

THE ROOTS OF IMAGINATION

A New Philosophy of Imagination,

Construing Imagination as a Dynamic, Evolving Synergy of Its Roots



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ABSTRACT

This work presents a new theory of imagination which tries to overcome the overly narrow perspectives that current theories take upon this enigmatic, multi-faceted phenomenon. Current theories are narrowly preoccupied with images and imagery. This creates problems in explaining (1) what imagination is, (2) how it works, and (3) what its strengths and limitations are.

(1) Ordinary language identifies imagination with both imaging (image-making) and creativity, but most current theories identify imagination narrowly with imaging while neglecting creativity. Yet imaging is a narrow power, while creativity is a broad power whose roots include imaging. Imagination in its fullest sense is thus creativity. Current theories are just about imaging, not imagination in its fullest sense.

(2) This preoccupation with imagery leads current theories to ignore imagination's transformation into more rational forms (as in the shift from myth and imagery to philosophy and reason). They see imagination in static, invariable terms, while it's actually a dynamic, creative synergy with various roots and with an evolving history.

(3) Current theories extol imagination's powers but neglect its limitations, though both are essential to effectively use and understand imagination. Again, a culprit is the narrow preoccupation with imagery: these theories neglect the more rational forms of imagination that best reveal its full powers and perils.

This work tries to remedy these three shortcomings. Its aim is *to more fully understand imagination by focusing not just upon imagery, but more broadly upon the evolving synergies between all of its various roots – biological, psychological and sociological – from which all its various structures, powers and limitations derive*. Only with a comprehensive perspective such as this can we begin to adequately understand what imagination is, how it works, and what it can and cannot do. The overall findings of this work are fully summarized in its final chapter.

DECLARATION

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

KEY WORDS

Imagination. Creativity. Images. Symbolism. Intuition. Thought and Language. Nature and Nurture. Human nature.

CREDITS

The photograph on the title page is of "Brother and Sister" by Paul Klee circa 1930.

INTRODUCTION

A NEW PHILOSOPHY OF IMAGINATION

CHAPTER 1

INTRODUCTION: THE NEED FOR A MORE COMPREHENSIVE PHILOSOPHY OF IMAGINATION

The aim of this brief introductory chapter is to clearly and simply state the purpose of this work, and to briefly outline how it will be achieved in subsequent chapters. The purpose of this work will be explained by citing the problems within current theories of imagination, as well as by explaining why these problems are important ones, and by noting the solutions this work will offer. Next, the work will be briefly outlined to show how this purpose will be achieved in the chapters to come. Finally, key terms used in stating the purpose of the work will be clarified (this is put last to avoid interrupting the narrative of the chapter with passages of linguistic analysis).

To begin with, however, it should be noted that there is perhaps no greater enigma than that of the creative mind. Its origin and nature are deeply mysterious. No less a mathematician than Pascal saw it in all its inexhaustible richness and infinite subtlety as a divine miracle beyond all reason. So magical do its powers seem and so boundless do its potentials appear, that to romantics like Blake it is as infinite and sublime as nature, itself. Imagination means endless power:

To see a world in a grain of sand
And a heaven in a wild flower,
Hold infinity in the palm of your hand
And eternity in an hour.

As daunting the creative imagination may be, some progress in understanding it has, nonetheless, been made over the last two centuries, especially since the birth of experimental psychology. However, the creative imagination still remains one of the greatest mysteries confronting us in all the universe. In fact, as we'll see, the problems in current theories arise from the *overly narrow perspectives* they take upon this dauntingly complex, multi-faceted phenomena. The full extent of the challenge before us can perhaps be conjured up best by referring to Arjuna's trembling reply in the *Bhagavad-Gita* to the Lord Krishna, as the Lord reveals some of his infinite, wondrous forms:

. . . struck with amazement, his hair standing on end . . . he said: I behold Thee, infinite in form on all sides . . . I behold Thee as one without beginning, middle or end, of infinite power, of numberless arms, with the moon and the sun as Thine eyes, with Thy face as a flaming fire, whose radiance burns up this universe . . . my inmost soul trembles in fear . . . Tell me who Thou art with form so terrible. Salutation to Thee, O Thou Great Godhead, have mercy. I wish to know Thee the Primal One, for I know not Thy Working.

The analogy between Arjuna's position and our own is instructive. The main claim of this work is that we can begin to fathom such a daunting, multi-formed phenomenon as imagination only through a very broad perspective that *looks across its whole history at its steadily unfolding capacities*. A similar point is perhaps made by the Lord Krishna as he reveals to Arjuna some of the endless forms he has taken throughout history. He answers Arjuna's plea, "Tell me who Thou art . . . for I know not Thy Working," by simply replying "Time am I".¹

THE PURPOSE OF THIS WORK

There are three main areas to the theory of imagination. They are concerned with (1) *what imagination is*, (2) *how it works*, and (3) *what its strengths and limitations are*. As we'll now see, the overly narrow perspectives of current theories create problems in each of these three areas. The purpose of this work is to develop a broader, more comprehensive theory that avoids these problems. So let's now look at the problems current theories face in each of these three areas, and at how a broader approach might remedy them.

Shortcomings in Current Accounts of What Imagination is

The overly narrow perspectives of current theories of imagination are quite apparent from the very outset in their initial accounts of what imagination is. It is here that these theories posit overly narrow definitions that simply don't do justice to everything we typically mean by the term "imagination".

What *do* we typically mean by "imagination"? A fuller analysis will appear in the next chapter, but for now it can be noted that the two mental powers that imagination is most typically identified with in ordinary language are *imaging* and *creativity* (or similar powers like imagery and insight).

Imaging is the production of images which are like sense experience, but which come

from the mind, itself, rather than from external stimuli. That imaging is indeed a primary sense of imagination is evident from the way we so often speak of people “imagining” scenes, faces, etc. in their minds.

Closely tied to imaging is *imagery*, which has also been identified with imagination.² Imagery is what is conjured up in poetry, myth and dreams. It consists of trains of concrete images linked together by intuitive associations and analogies. This concrete, associative thinking of imagery is often contrasted with the abstract, systematic thinking of reasoning.

In a different sense, we often speak of innovative scientists and artists as being highly “imaginative”. Here we’re referring to the *creativity* or fertility of their minds. Creativity is most often defined as the propensity to produce original and appropriate products (or in similar terms).³ It is closely tied to notions like insight, discovery and problem solving.

Now, the problem here with most current theories of imagination (e.g., J.P. Sartre, G. Ryle, M. Warnock, E.S. Casey, P. McKellar, and more recently, M. Johnson and E. Brann) is that they tend to view imagination narrowly in terms of imaging or imagery. They tend to neglect creativity, even though both powers are commonly identified with imagination, and are thus clear-cut examples of what imagination is. When they mention creativity, it is most often accounted for in terms of imaging or imagery.⁴

The problem with this approach is that imaging and imagery are comparatively narrow powers, while creativity is a broad power whose most powerful forms include both imagery (with its rich associations) and reasoning (with its systematic abstraction). The most creative forms of thought can be described as a “*synergy*” of imagery and reason, in that the latter join forces in creativity to do what they cannot do as well apart, namely, solve problems. (“*Synergy*” is one of the terms defined at the end of this introductory chapter). Arguably, imagination in the *fullest sense* should be seen as creativity, for creativity embraces narrower powers identified with imagination (like imagery and imaging) as its psychological roots.

Only with this broader approach can we embrace in a single, coherent concept all that is typically meant by “imagination”. But this is just what current theories fail to do because of their narrow preoccupation with imaging. In the end, they give theories of imaging, rather than of imagination in the fullest sense.

Shortcomings in Current Accounts of How Imagination Works

The overly narrow perspectives of current theories of imagination are also evident in their account of how imagination works. These theories (especially those based on phenomenological

and analytical approaches) seem to assume that imagination and all other cognitive processes are eternally fixed in their basic nature. They mistakenly presume that cognitive processes in all cultures and eras are basically the same, and they speak misleadingly of “the” relationships between perception, images, thought, language, etc. in static, invariable terms.

By contrast, the view above, that imagination is a synergy of imagery and reason, suggests that it is a highly *dynamic* phenomenon. This is because synergies are by their very nature dynamic, interactive processes in which independent elements join together to do what they can't do apart, and in the process transform both themselves and their relationships. (“Independent” is defined at the end of this chapter.)

These transformations will all be covered later, but some can be noted here to illustrate just how dynamic they truly are. The creative synergy of imagery and reason is in fact the culmination of an even more basic synergy between images, symbols and thought.⁵ Here thought gives meaning to both images and symbols, which are blind on their own. In turn, images and symbols serve thought by acting as its mediums. Images are concrete, so imagistic thought tends to consist of concrete associations (imagery). Symbols form abstract systems, so symbolic thought tends to develop into more abstract and systematic forms (reasoning).⁶

Now, there is evidence that this synergy of images, symbols and thought has actually developed through historical stages from poetic imagery to systematic reasoning. Witness, for example, the evolution from animistic to mytheopic, theogonic and scientific forms of natural explanation. Here symbolic thought was taking greater control of imagistic thought. This *symbolic reconstruction of thought* produced greater abstraction and mobility, while still retaining the rich, concrete associations of imagistic thought.

This symbolic reconstruction illustrates how *imagination isn't static, but dynamic and evolving*. In fact, imagination's powers are open-ended: its creativity comes from its ability to constantly build upon itself, examine and transform its existing structures and methods, and master its inner potentials. This is what makes our mind so uniquely and powerfully creative. It has opened up a symbolic universe of abstract ideas and endless possibilities.

Unfortunately, current theories of imagination are so narrowly preoccupied with *imagery* that they neglect this *symbolic* reconstruction into increasingly rational and powerful forms. Admittedly, one theory (Mark Johnson's *The Body in the Mind*) does try to show how imagination is *not* “eternally fixed” and static, but is instead embedded within our evolving “historical traditions”. But, ironically, the account of imagination in this theory is limited to imagery alone, so the theory remains silent about the symbolic transformations above which have so deeply shaped imagination into such powerful, rational forms.

A truly adequate account of imagination must see it as an evolving, *historical* phenomena. Single “snapshots” of the familiar present (as given by linguistic and

phenomenological analyses) need to be replaced with panoramic “motion pictures” that illuminate these snapshots by showing their place in the unfolding whole. Only with this broad historical perspective can we hope to fathom the true nature and potentials of imagination in all its “inexhaustible richness and infinite subtlety”. We need to heed the lesson of philosophy of science: historical studies are needed for sound theories of how science really works. We need to return to the historical perspectives of Vico, Hegel, Marx, Cassirer, Collingwood and Piaget.⁷

Shortcomings in Current Accounts of the Strengths and Limitations of Imagination

The overly narrow perspectives of current theories of imagination are also evident in their limited appraisals of the strengths and weaknesses of imagination. Most current theories of imagination follow the Romantic custom of simply extolling the virtues of imagination. They lack systematic, sober critiques of imagination’s powers. This is unfortunate, for we cannot adequately understand imagination, let alone fruitfully use it without systematically delineating its overall capacities, both positive and negative.

This requires looking beyond the psychological roots of imagination described above, to the sociobiological roots of imagination, namely, institutions and instincts. They are the external roots of imagination, for they powerfully shape imagination from the outside rather than constituting it from inside (as its psychological roots do).

Here again we find a synergy: one between *imagination, institutions and instincts*, with each promoting the other, so that they unlock their full potentials together. This has produced a real shift in the center of gravity in evolution from biological dynamics to social dynamics, to mental dynamics. It has produced the heydays of instinct, tradition and imagination, respectively.

But as imaginations and societies have grown more independent, real *strains* have developed between instincts, institutions and imaginations. These strains are evident in the arduous domestication of our instincts by our institutions and imaginations, as well as in the real backsliding that has occurred here.

Only by looking at these processes in which imagination, instincts and institutions *both promote and constrain* each other can we begin to systematically evaluate the powers and limitations of imagination. But current theories (especially phenomenological and analytical ones) lack the comprehensive psychological and sociobiological framework for doing this. They are thus quite limited in their ability to help us adequately understand and soberly utilize imagination.

They are also limited, once again, by their preoccupation with imagery and their neglect

of the symbolic reconstruction of the mind into more rational, powerful forms. Only by looking at this reconstruction can we reveal imagination's full powers. And only from this perspective can we see the real limitations of our boldest and most powerful forms of imagination in dealing with the sociobiological forces noted above. In other words, focusing on just prerational imagery blinds us to the full powers and limitations of imagination.

Summary

We've just noted how current theories of imagination fail to deal adequately with (1) what imagination is, (2) how it works, and (3) what its strengths and limitations are. A recurring problem here is that these theories are so preoccupied with imaging and imagery that they neglect the symbolic reconstruction of imagination into its most powerful, rational forms.

(1) Although ordinary language identifies imagination with both imaging and creativity, most current theories of imagination define it narrowly in terms of imaging (or imagery) and then try to account for creativity in these terms. But the fullest sense of imagination is creativity, for creativity is a synergy which involves both imagery (or imaging) and reason.

(2) Current theories see imagination in static, invariable terms, but it is in fact a dynamic, evolving synergy that is constantly transforming itself in powerful ways. Its unfolding nature and potentials can be fully understood only through a broad historical perspective. The most important transformations of imagination came from its symbolic reconstruction into more rational forms. But current theories are blinded to this due to their narrow preoccupation with imagery, which is pre-rational.

(3) Current theories extol imagination's powers but largely ignore its limitations. Yet we must study both to effectively use and understand imagination. This requires that we broaden our perspective to study how imagination, institutions and instincts both promote and constrain each other in a dynamic synergy. But current theories are hindered here by their neglect of the more powerful, rational forms of imagination and their preoccupation with imagery, which is pre-rational.

It is unfortunate that current theories so often neglect such questions about the relationship of imagination, creativity and imaging, or of intuition (non-inferential thought), images and symbolism, or of imagination, institutions and instincts, for they represent vital questions about the proper formulation and capacity of imagination.

In conclusion, then, current theories of imagination seem to take an overly narrow perspective upon this complex, multi-faceted phenomenon. They fail to see that creativity is better defined broadly in terms of creativity than narrowly in terms of imagery alone, that it is a

dynamic and evolving synergy with a long history rather than a static phenomenon, and that it has real limitations as well as remarkable powers. All these limitations are tied to a narrow view of imagination as mere imagery that overlooks its dynamic, creative, synergistic nature.

This work tries to remedy these shortcomings by developing a broader, more comprehensive perspective that looks beyond the narrow preoccupation with mere imagery to embrace all the various roots of imagination. Each of the problems noted above is remedied by looking into the evolving synergies between imagination's roots, for as we've begun to see, it is from these synergies that all of imagination's structures, powers and limitations are ultimately derived. Only from this more comprehensive perspective can we adequately establish just what imagination is, how it works, and what it can and cannot do.

Thus, *the aim of this work is to more fully understand imagination by focusing not upon mere imagery, but more broadly upon the evolving synergies between all of its various roots, from which all its various structures, powers and limitations derive.* Simply put, this work aims to more fully understand imagination by examining the evolving synergies between all of its roots.

A BRIEF OUTLINE OF THIS WORK

Having looked at the purpose of this work, let's now preview an outline of the actual arguments that will be used to achieve this purpose. Because the purpose of this work is to more fully understand imagination by looking into the evolving synergies between its roots, we will look in *part one* at the synergies of its psychological roots (images, intuitions and symbols), and in *part two* at its synergies with its sociobiological roots (institutions and instincts). These synergies will be covered systematically in the next four chapters by looking, respectively, at intuition and images, intuition and symbols, imagination and institutions, and institutions and instincts.

If the overall structure of this work follows from its purpose, so does the structure of each of its chapters. The two chapters in *part one* will argue that these psychological roots are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its evolutionary *history*, and that constitutes *imagination* in its core sense of creativity.

It is necessary to begin by establishing the *independence* of these roots in order to prepare the way for the later arguments that their relationship is synergistic. This is because synergies can obtain only between truly independent elements: synergies are defined as cooperations between independent elements which enable them to do together what they cannot do apart.

We'll find that in these *synergies*, images and symbols act as intermediaries between the

senses and thought, for they can re-present the sensory world in its absence to thought. But images and symbols will be seen to mediate between sensory raw materials and thought in their own special ways: images fostering concrete, spatial thought; symbols fostering abstract, organized thought. We will see how their synergy produces rational imagination, a powerful synthesis of rich, vital imagery and systematic, disciplined reasoning.

Part one will thus look at imagination primarily from the psychological perspective, and will conclude that it consists of dynamic synergies of intuition (non-inferential thought), images and symbols which constantly build upon, and transform themselves into more powerful and dynamic forms. Part one raises the need for a natural *history* of imagination to document and explain the historical developments that actually helped to forge these psychological synergies, for they were driven in part by potent sociobiological forces outside themselves.

Part two will supply this natural history of imagination. From the sociological and biological perspectives, we'll look at the unfolding synergies of imagination, institutions and instincts which so stimulated the development of all three. These sociobiological roots externally shape imagination, unlike the psychological roots above that actually constitute imagination. Our focus will be upon how these synergies culminated in the *rational reconstruction* of the human mind from its primal form which was dominated by emotion and intuition into a more civilized form with disciplined control of emotion and intuition. In this way, the largely psychological approach of part one is complimented by the largely evolutionary and sociobiological approach in part two. They work together to argue that imagination is a dynamic, evolving phenomenon that must be understood historically, within the context of the synergies from which it emerged.

Paralleling part one, part two will try to show that mental, cultural and biological evolutions are independent yet interactive phenomena engaged in dynamic, evolving synergies together. Accordingly, we will scrutinize attempts to deny their independence from each other. This will involve trying to overcome the territoriality of psychology, sociology and biology, and trying to reconcile competing ideologies within them. In reconciling these approaches, we'll see how mental, cultural and biological phenomena can flourish together by unlocking each others' inner dynamics, and how they can thereby realize their fullest evolutionary potentials together.

We'll see how this intensifying interaction between the three evolutions resulted in a shifting center of gravity between them, from biological, to social, and finally to mental evolution, respectively (the heydays of instinct, tradition, and imagination). This represents a progressive liberation of the mind in evolutionary history, first from biological determinism, then from cultural determinism. With the advent of settled life, then civilization, humans were lifting themselves from their submergence in nature and tradition, and were beginning to imaginatively reconstruct their natural and social worlds according to more conscious designs. They were emerging from the world of blind necessity into a world with wide-open horizons of possibility.

It will be argued that the civilized, rational world that we created in this process represents real *progress* in human history, as well as in evolution as a whole. This is because it gives us more organized and efficient means of achieving basic needs, greater power over our destinies, and more enriched and enjoyable lives.

However, we'll also see that this shifting center of gravity between mental, social and biological evolutions didn't wholly emancipate the mind from its sociobiological roots. As in any synergy or marriage, these elements constrain as well as promote each other. We'll review historical evidence that imagination's social and biological roots do constrain it. But the reverse also seems to be true in a way, as we'll see. Human nature seems to have been domesticated by our imaginations and institutions on the road to civilization.

Human history can thus be viewed in terms of the efflorescence and triumph of imagination. The emerging capacity of our imagination is what most clearly delimits our *uniquely human nature, freedom and predicament*. Only humans have lifted their eyes from the limited perceptual horizons of beasts and gazed out into a conceptual universe of ideas, whose infinite possibilities are the source of not just our free will, but also of our peculiar predicament. To echo Kant and Aristotle, the human predicament is that, due to the nature of our imaginations, we lack both the sure guidance of beasts and the omniscience of gods, and are thus left in between in a world of eternal conflict, intractable dilemmas and bewildering possibilities.

Perhaps the greatest predicament of all opened up by our possession of imagination is that we alone can choose *who* and *what* we are. Humans alone are faced with the perplexing question of how to choose what they want to be, of how to best realize their potentials and how to best fulfill their nature, with its various, conflicting demands. The conclusion of this work is that guidance here can't come from imagination, institutions or instincts alone, but rather from the *genuine dialog* of each, with each promoting and supporting the others in subtle, complex ways that often elude us. Communism's failure, and similar backsliding from imaginative ideals in history, will help to make this point.

This is, once again, why a more comprehensive account of imagination is needed. Philosophies of imagination can't sit on the fence about such questions as the proper balance of intuition, images and symbolism, or of imagination, institutions and instincts, for they represent vital questions of the proper formulation and function of imagination. These questions are as much matters of values as of facts: they require systematic accounts not just of the actual interrelationships of these phenomena, but also of what is progressive and fruitful in the ongoing development of imagination. In the end, the question, "what is imagination" becomes a matter for imagination, itself: it becomes one of the most central problems that the human imagination faces. An adequate answer here can come only through a comprehensive account of imagination that tries to reconcile not only the different sciences (psychology, sociology, biology, etc.) but

also the different epistemologies (rationalism, empiricism and intuitionism), as well as other competing disciplines.

CLARIFICATIONS OF KEY TERMS

What follows isn't meant to be a full glossary of terms. Instead it just aims to clarify the terms used in this work's key claim that imagination can only be fully understood by looking to the evolving synergies between its roots. Most of the terms in this claim are straightforward and don't need clarification, but "synergy" and "roots" perhaps do. Also, because a synergy is a relationship between "independent" elements, this term will also be clarified. Two other terms deserving clarification are "autonomous" and "irreducible", for they serve in this work as two specific and precise senses of the more general and vague term, "independent". We'll end by applying some of these terms together to actual examples to get a fuller insight into how they actually operate together in the chapters to follow. Here the discussion will become more technical than in the rest of this chapter.

Roots: The core sense of "roots" is the biological one, which refers to the (typically) underground part of certain plants which acts as a source of nutrition and anchorage. But often the term is metaphorically extended to mean "underlying support or basis", "original cause or source", etc. All these senses are reflected in this work's discussion of imagination's psychological and sociobiological roots. The psychological roots of imagination serve as its "original sources" by combining and cooperating to actually constitute imagination, while its sociobiological roots shape, "nourish" and "support" imagination. Together these roots are the "original sources" of imagination's structures, powers and limitations.

Synergy: Synergies are simply defined as "cooperations between independent elements which enable them to do together what they cannot do apart." Just because these elements are independent, their cooperations produce both mutual benefits and mutual tensions, both of which are explored in this work. A similar term to "synergy" is "dialectic", but this latter term is avoided in because of the all the technical baggage and undesirable connotations surrounding it.

Independent: To say that something is independent is simply to say that it doesn't depend on or rely upon something else. This independence can be causal, logical, political, etc., depending on the context. In this work, this very broad and general term will be used in two precise, specialized senses, namely, "autonomous" (i.e., self-determined rather than externally

determined) and “irreducible” (i.e., not explainable or describable away into a more fundamental form).

Autonomous: To say that something is autonomous is to say that it is self-determined: it’s properties or existence are fixed independently of external forces, at least comparatively (compare the definition of “determine” below). An example is the claim in chapter three that thought and language are two autonomous faculties⁸ capable of existing independently of each other in brain-damaged people, and of operating independently of each other in the form of preintellectual speech and prelinguistic thought. Another common example (this time from chapter four) occurs in the traditional nature/nurture debate, for here part of the argument is over whether our cultural and biological heritages are autonomous forces or are instead mere puppets or epiphenomena of each other.

Questions about autonomy will be settled by examining whether a phenomenon’s causal dynamics are self-determined rather than externally determined. For example, a primary concern of part two is to show that mental, social and biological evolutions are independent of each other by showing that they each have their own autonomous dynamics. This will involve showing, for example, that genomes, social institutions and mental constructs (ideas) each have their own internal developmental logics which cannot be fully accounted for in terms of the developmental logics of the others. This makes these phenomena “independent” of each other in the sense of being “autonomous”.

Irreducible: Similar terms to “reduce” are “assimilate” and “absorb”. The term “reduce” has many uses, but the meaning we’re concerned with is “to fully explain or describe a phenomenon’s properties in terms of the properties of a more fundamental phenomenon, so that only the latter remains.” A simple example is the way we explain to children that clouds in the sky and fog on the ground are really the same phenomenon, namely, water droplets suspended in the air. Another example is psychologism’s claim in chapter four that all socio-cultural phenomena are mere products of individual’s minds, so that societies and cultures don’t exist outside of our minds.

Questions about reducibility will be settled by examining whether a phenomenon possesses properties that can’t be accounted for by other phenomena. For example, a primary concern of part one is to show how *images, symbols and thought are independent* of each other by showing that each has its own unique properties that can’t be accounted for by the others. It will be argued, for example, that images differ from thoughts by being scannable and observable (something that phenomenological reductions overlook). Another example is the argument that images differ from symbols in that symbols represent in conventionalized, abstract ways and

combine into systems possessing formal syntaxes, discrete elements, clear truth claims, etc.; while images represent by vivid resemblances and don't possess formal syntaxes, discrete elements, clear truth claims, etc. (differences that reductionists on both sides in the cognitive sciences overlook).

Determine: To “determine” something means to tightly fix its properties. Something's properties can either be *externally determined* (as, for example, in the biological determinist's claim below that our biological heritage determines our cultures by tightly fixing their characters through the unfolding of genetically programmed mechanisms) or *self-determined* (as in the reply to biological determinism below that cultures are autonomous of genes because they develop in large part according to their own internal principles and system requirements). One way that determining and reducing differ is that, when X is reduced to Y, typically it is fully (rather than just comparatively) explained away in terms of Y. By contrast, when X is determined by Y, typically, its character is comparatively (rather than fully) fixed by Y.

Autonomy and irreducibility contrasted: Questions about autonomy are concerned with the causal independence of phenomena. They can be contrasted with questions about reducibility, which are concerned with the independence of levels of explanation or description (as when it's debated whether the behavior of chemical compounds is reducible to that of atoms, or whether John is really Linda in disguise). Questions about autonomy presuppose that different phenomena exist, while questions about reducibility question whether phenomena actually are different.

Epiphenomenalism is an instructive example, It reduces the causal dynamics of a phenomenon to another phenomenon, while retaining the independence of other properties in the former (in the theory of mind, dualistic epiphenomenalism is an example). Where these other properties are also eliminated, the reduction may become complete, to the extent that there is no longer any reason to speak of two different phenomena. Here, reductionism could replace epiphenomenalism.

Another instructive example here is the debate in chapter four between psychologism, which claims that societies are reducible to the relationships and activities of individual's minds, and social determinism, which claims that individual minds are mere puppets of societies and their dynamics. Social determinism assumes that both individuals and societies exist, and that the former is determined by the latter. Psychologism simply claims that only individuals exist. Despite these differences, the debate can be actually arbitrated by showing that *both societies and minds have their own inner dynamics*. This refutes social determinism by showing that minds are partly self-determined, while it refutes psychologism by pointing to properties

possessed by societies which can't be explained in terms of the activities and interrelations of individual minds.

The point is that *even though one position is determinist and the other is reductionist, there are real points of conflict between them.* Their competing claims can actually be reconciled by pointing to *properties (i.e., powers for self-determination) unique to both* which rule out both lopsided determinism and lopsided reductionism.

Another instructive debate here is the nature of images. One kind of epiphenomenalism claims that images play no causal role in cognition. This rejects the autonomy of images from cognition and rejects synergies between the two, for there can be no interaction between them. A synergy of images and cognition is also ruled out by various reductionisms. For example, phenomenologists interpret the recollection of a face as merely thinking visually, not as observing and scanning something (like in perception). Similarly, propositionalists reduce images to a symbolic form (e.g. of the kind used in transmitting planetary images through telemetry). These reductionisms fully account for images in terms of other cognitive processes, and thus deny any synergy between images and these other processes, except perhaps in the limited sense that different kinds of thought could interact (in phenomenology) or different kinds of symbolic operations could interact (in propositionalism).

The phenomenological reduction will be dealt with by appealing to evidence that we actually do observe and scan imagination's images rather than just think visually. It will be further argued that we do not do these things by thinking verbally as propositionalists claim, and that these images actually do play a causal role in cognition, counter to epiphenomenalist claims. These arguments try to establish the *independence* of images from other cognitive processes as both *irreducible* and *autonomous* entities, which paves the way for showing how true synergies exist between images and other cognitive processes.

Not noted here is the claim that images aren't reducible to thought but nonetheless never exist without thought (all images being thought-imbued). Although this position is unclear about the causal relationship of images and thought, its most plausible interpretation is that images are causally independent of thought for their origin and existence, but that they are nonetheless always thought-imbued simply because our cognition is so constructed that thought always pervades conscious experience. This actually aligns with the just-noted position of this work that images are causally autonomous from, and irreducible to thought. In both cases, the door is opened for a true synergy of images and thought. However, these positions differ in that this work argues that images and thought do not form an "indissoluble package".⁹

CHAPTER 1 NOTES

1. The *Gita* isn't suggesting that history alone can reveal the full nature of the Lord Krishna. The *Gita* can be seen as combining a theistic metaphysics with a yogic ethics. As such it recognizes the value of history (as most theistic, prophetic religions do), but also places much value on meditation as the route to knowledge (as most mystical religions do).

2. Imagination is identified in various ways with imagery by Mark Johnson, Anthony Flew and Peter McKellar, though they don't all use the term "imagery".

3. Creativity is usually defined in terms of its products, for these are the real evidence of creativity. Creative products are typically treated as being original: we don't normally call something creative that is repetitive, habitual or imitative. Also, creative products are ordinarily treated as being appropriate in the sense of fitting standards of their field and requirements of their situation, (this allows us to distinguish between the bizarre delusions of schizophrenics and the genuine insights of a Newton or Picasso).

4. Mary Warnock (1976) is a good example of this attempt to account for creativity in terms of imaging because she synthesizes many of the other current theories we've noted into her own. She identifies imagination as the faculty for making images (imaging), and gives phenomenological and analytical arguments (adapted from Sartre, Ryle, etc.) for treating these images as ways of *thinking* which permit us to interpret things, to grasp forms and their significance in activities as diverse as creating, envisioning and perceiving. But as we'll see, there are problems with this attempt to account for creativity in terms of imaging.

Mark Johnson (1987) represents a recent example of accounting for creativity in terms of imagery. He sees imagination as a vast complex of primitive, prototypical notions metaphorically structured on the basis of primitive, bodily experience. This imagination organizes perceptual experience into a coherent form, shapes our reasoning and understanding, and is the rich seedbed of creative connections. His account of what a "complete" theory of imagination and creativity involves makes scant mention of anything but imagery. He thus gives an inadequate account of the most rational and powerful forms of imagination.

Evan Brann (1991) is a rare counterexample to such attempts to account for creativity in terms of imaging or imagery. She defines imagination solely in terms of imaging, and treats it as a mere "conduit of visions" which has a certain role in creativity, but is in itself "essentially receptive rather than creative". Her theory of imagination neglects creativity in a different way than most other theories: she simply excludes it from her notion of imagination.

5. The synergy is between images, symbols and thought in its simplest, most intuitive form. Compare how Bruner sees the course of cognitive development as being determined by our evolving modes of representation, which include *images and symbols*. He sees this development as a progression: although images have greater vividness and detail, they're limited because of their largely static nature, so we are unlikely to revert to this form of representation once knowledge is represented symbolically.

6. As we'll see, imaging helps clarify and illustrate thought because its images so vividly and richly resemble what they represent. But images are limited as mediums of thought by their inherent ambiguity and lack of effective syntax. Symbols represent by arbitrary conventions, which emancipates them from experience and allows them to represent in precise, flexible, abstract ways. Images can do this only by relying on, or taking on attributes of symbols. For example, diagrams can convey complex, abstract information, but only if supplemented by text, and only by actually becoming highly conventionalized

and symbolic themselves. Much the same applies to the gestalts structures we abstract from images to organize these images into coherent experience (Mark Johnson 1987).

Symbols thus seem better suited to abstract *reasoning*, while *images* seem better suited to thinking via concrete *imagery*, as in the rich associations and vivid analogies of myth and poetry. Reverie exemplifies imagery, while scientific thinking exemplifies reasoning. Myth and poetry are transitional in character: they are “symbolically articulated imagery” (to use Piaget’s term). They conjure up concrete images linked together by associations and metaphors, but they do so through linguistic systems. They are best classified as forms of imagery because their thought processes aren’t based on reasoning but on the resemblances of which all imagery partakes.

7. *Vico* (1668-1744) is worth noting here because the present work is perhaps closer in spirit to his *New Science* than to any other work. *Vico* was a farsighted founder of the philosophy of history. He was seeking the patterns and principles within history. His novelty was his systematically historical and comparative approach, which drew on different eras and cultures in seeking to understand man. Prior to *Vico*, it was generally assumed that man’s character was fixed and static. This led, as *Vico* pointed out, to anachronistic views of the state of nature which depicted “primitives” as modern, rational men who just lived in primitive environments (compare the comments about contemporary views of imagination above). *Vico* realized that man’s character has evolved through stages. He saw that thought and institutions evolve together (“the order of ideas must follow the order of institutions”), and that they fit together in what *Hegel* would later call the “spirit of the age.”

Vico thus saw that thought and institutions form a dynamic, complex system whose complexion develops through stages. His study of myth and symbols showed him that humans developed from an imaginative childhood into rational maturity (an insight that later inspired *Cassirer* to develop his philosophy of symbolic forms). He adapted *Herodotus*’s stages of history into a “state of nature” (where we lived as lawless beasts), an “age of gods” (early agricultural life, centered upon gods and rituals), an “age of heroes” (dominated socially by ferocious tribal chiefs and solemn traditions, and dominated intellectually by the vivid, poetic imagination of myth), and an “age of men” (dominated socially by the rule of law and liberty, and dominated intellectually by reason). These stages recur cyclically according to internal principles like class conflict (here *Marx* saw “a gleam of genius” in *Vico*) and divine providence (which transcends individuals like *Adam Smith*’s “invisible hand,” and which *Hegel* later transformed into an immanent spirit in history). Many of these same themes will be echoed in the chapters below.

More recently, an historical, developmental approach to the intellect has been promoted by *J. Piaget*. His influence on this work also runs deep, like *Vico*’s. Unfortunately, his importance to the theory of imagination is often ignored due to misunderstood criticisms of his work. One recurring criticism is that cognitive abilities sometimes appear either earlier or later in individual development than he found. He provided explanations for some of this (e.g., he allowed that social and educational factors can alter the speed, but not the sequence of development, and he felt that *decalage* or “unwedging” can account for uneven development within stages).

But most importantly, his developmental taxonomy does seem to hold in its most *fundamental* form. This seems to be a direct implication of the epistemological constraints upon our cognition. We can’t grasp the structure of reality directly, but only through the mediation of the senses, so we must abstract information from the senses and organize it into a coherent form in stages (as *Aristotle* noted here, perception works in reverse direction from reality, for the order underlying phenomena must be reconstructed by the mind). So, at first thought is submerged in perception, concepts are impressionistic and unsystematic, and subjective contributions of the mind are difficult to distinguish from objective properties of things (preoperational thought). We slowly penetrate below perceptual surfaces to plumb the objective connections between things, but again, this proceeds from a concrete stage (concrete operational thought) still tied to immediate realities, into a more abstract, organized stage capable of systematically exploring theoretical possibilities (formal operational thought).

Besides the intuitive plausibility of this progression, there is also, as we'll see, considerable cross-cultural evidence that these stages are universal in their most fundamental features. This last fact also represents a reply to another often-heard criticism of Piaget's work, namely, that in positing *universal* developmental stages, it overgeneralizes from observations of a few European schoolchildren.

This work also echoes *Hegel and Marx* in certain ways. The notion of "synergy" discussed above is quite similar to their notion of dialectic, though without all the dogmas that surround the latter. Also, this work is concerned with the progressive unfolding of mind in history, though without the dogmas of "an end of history" and without metaphysical commitments to either idealism or materialism. An Hegelian theme that this work echoes is the notion that there is an inner logic to the development of *ideas* in history (Piaget argued for a dialectical unfolding of ideas in history also). A Marxist theme that this work echoes is that ideas are often determined by our *institutions*, which are in turn determined by economic and technological forces. In fact, ideas and institutions both have their own inner developmental logics, and together they unlock each other's full potentials.

But both Hegel and Marx neglected a third determinant of history. They both failed to realize that there is a fixed human nature and that *instincts* profoundly shape our history. Any adequate philosophy of history must recognize these three determinants: imagination, institutions and instincts. Each has its own inner dynamics, and each promotes the other, so that they unlock their full potentials together. Such a philosophy of history is an integral part to explaining the developing nature and capacity of imagination.

8. A "faculty" is a separate power of the mind, such as memory, perception, imaging, etc. The old "faculty psychology" sought to divide the mind up into such faculties and to isolate them all in specific locations in the brain. However, such approaches were discredited as it was learned that these powers were more interdependent than thought, and harder to isolate into their own specified brain areas. The term "faculty" was proscribed altogether from psychology by behaviorists, but it has made a comeback, especially in the cognitive sciences, where it refers to specific mechanisms which work only on specific domains of information. Also, the brain is now seen as being organized into numerous modules of brain cells with special functions such as facial recognition. Thus it could be said that they act like faculties, though it should also be noted that they are interrelated with other abilities.

9. This claim that images aren't reducible to thought but nonetheless never exist without thought is unclear about the causal relationship of images and thought. Are there no images outside thought because images are *causally dependent* upon thought for their origin and existence in some way? This interpretation rules out autonomy for images and as well as synergies of images and thought. But just how are all images causally dependent upon thought for their origin and existence, as opposed to being reducible to thought (as in phenomenology, for example)? Why can't we, for example, transform our visual fields at will to suit the whims of thought? Also, what evidence could there be for this dependence (evidence against it is considered below)?

More plausibly, the claim could be that images are *causally independent* of thought for their origin and existence, but that they are nonetheless always interpreted simply because our cognition is so constructed that thought always pervades conscious experience. Because this latter interpretation allows that images are causally independent of thought for their origin and existence, it aligns with the arguments in this work for the autonomy and irreducibility of images from thought. In both cases, the door is opened for a true synergy of images and thought.

But where this work differs from *both* interpretations above is in rejecting their assumption that images and thought form an "indissoluble package". This assumption (which is shared with phenomenology and other outlooks attacked in this work) is criticized in the next chapter on various grounds. If all images are conceptualized, why do we have to *hunt* for things within our perceptual fields (like a fork in plain sight in the kitchen drawer)? There is considerable experimental evidence that our *actual awareness* of perceptual images is built up through stages, beginning with simple feature analyzer that

construct bare contours, and proceeding through their interpretation as physical objects, to their recognition as specific, familiar objects. These latter stages bring the conceptual resources of focal attention narrowly to bear upon the figural syntheses of the lower levels. Studies of the decortication of cats, the evolution of cognition, etc. also suggest this same conclusion, namely, that bare sensory awareness precedes conceptual awareness, and can occur without conceptual awareness.

PART 1

THE PSYCHOLOGICAL ROOTS OF IMAGINATION:

IMAGES, SYMBOLS AND INTUITION

CHAPTER 2

THE SYNERGY OF IMAGES AND INTUITION

The purpose of this work is to gain a more comprehensive understanding of imagination by looking into the evolving synergies between its roots, from which its structures, powers and limitations derive. In keeping with this purpose, we'll look here in part one at the synergies of its psychological roots (images, symbols and intuitions), while in part two we'll look at the synergies of its sociobiological roots (institutions and instincts). In this chapter we'll look specifically at the synergy of intuition (non-inferential thought)¹ and images. Here we'll pursue the purpose of this work by looking at the synergistic relationship between these roots.

In keeping with this purpose, this chapter will develop four themes. The first will be that thought and images are *independent* phenomena. This will be argued to prepare the way for later arguments that their relationship is synergistic in that it consists of genuinely independent elements joining together to do what they cannot do apart. The independence of images will be defended against prevailing philosophies which treat them as mere objects of thought or language, rather than as observable objects existing independently of thought or language as describable mental pictures. This defense will consider everyday experiences we have of examining images in our minds, as well as recent experimental evidence of our ability to actually rotate, scan and describe mental pictures. We will also see how images have different powers from words, so that some mental tasks are inherently better suited to imagery than words (e.g., mentally counting the windows in our home), while others are better suited to words than images (e.g., arguing about the national debt).

After thus trying to defend the independence images and thought, we'll introduce the second theme: that their true relationship is *synergistic*. This will involve showing the *intermediate* role that images have between the senses and thought in *re-presenting* the sensory world in its absence to thought. Thought gives meaning and direction to images, while images bring spatiality, concreteness and clarity to abstract thought, thus helping thought to penetrate, grasp and manipulate the world. This intermediate, image-producing faculty has been identified as *imagination* by philosophers stretching from Aristotle up to contemporaries like Brann and Warnock.

The third theme will be that the common meanings of imagination can only be embraced together in a coherent concept by viewing *creativity* as the widest and most encompassing sense

of imagination (its common thread), and by treating this widest sense as embracing narrower senses like imaging and intuition on the grounds that they serve as the creativity's psychological roots. This stands in contrast to the tradition just noted above, which identifies imagination simply as the intermediate, image-producing faculty.

Finally, the fourth theme will be that because imagination is comprised of these complex synergies, it is an exceedingly dynamic, variable, multi-faceted phenomenon that's constantly building upon itself. It's an emerging phenomenon whose powers, reach and mobility are constantly expanding. This means that the method for studying imagination must be in part *historical*. Only by looking at imagination *unfolding across all cultures and eras* can we hope to gain a more comprehensive understanding of what this intricate, elusive, emerging phenomenon really is. This will be one aim in the chapters ahead.

The overall themes of this chapter are thus that thought and images are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its *history*, and that helps to constitute *imagination* in its core sense of creativity.

In arguing these themes, criticisms of most theories of imagination will be introduced. Because Warnock's eminent work, *Imagination*, synthesizes many of these theories, much of this criticism is focused upon it. She sees imagination as the faculty of creating images which is present in activities ranging from ordinary perception to creative genius. While she finds these interpretive and creative roles in, e.g., Hume, Kant, Coleridge and Wordsworth, she also feels that these roles are compatible with phenomenology, if we don't talk about processes of perceptual synthesis or about images as inner pictures. She also ties these roles to Wittgenstein's notion of aspect-seeing, which blends the interpretive, creative and image-forming roles of imagination. Imagination is thus seen not just as producing inner pictures, but as our way of thinking about the world: it allows us to go beyond the actual to the past, future and ideal.

Warnock's account will be criticized because (1) her assimilation of images to thought is hard to reconcile with both experimental evidence about images and her own apparent belief in the interaction of perceiving, imaging and thinking, (2) the "common thread" in typical uses of imagination isn't the imaging she focuses on, but creativity, which embraces imaging, and (3) she overlooks imagination's historical variability: to be fully understood it must be studied historically.

Imagery

In preparation for looking at the relationship of images and intuition, let's look at the familiar ways in which they appear together. As Brann points out at the outset of her monumental study

of imagination, much of our life is spent engaged in various kinds of *imagery* (thinking figuratively with images), including daydreaming, night-dreaming, recalling past scenes, envisioning future scenes, and projecting mental images onto present perceptions. Much of our inner life occurs as imagery that can never be adequately reduced to words. Quite simply, the richness and concrete detail of personal thought eludes language, which is inevitably spare and abstract by comparison. Yet psychology and philosophy have extensively analyzed imagery. In this opening section, let's try to clarify the terminology used in these analyses.

What makes imagery so important to this chapter on intuition and images is that imagery is usually seen as being comprised of both mental images (mental representations or pictures of things) and the intuitive, figurative thought of metaphor and simile.² The fact that imagery is seen as being comprised of both isn't surprising, for mental images and figurative thought typically go together. Primitive thought, dreams, myth, poetry and painting are examples.

Mental images and figurative thought so typically go together because of the "pictorial logic" of images. Images are concrete and particular, not abstract and general like propositions. So when we think in terms of images, as children and traditional people tend to do, relationships tend to be seen in terms of the *concrete* associations (e.g., the barking and biting associated with dogs) that figurative language thrives upon, rather than in terms of the abstract taxonomies of rational thought (exemplified by how biology classifies dogs). Their concrete, imagistic thought isn't too suitable for the abstract principles, systematic operations or comprehensive perspectives of abstract, *rational* thought, but is more suitable for the purely *intuitive* thinking of analogy, metaphor and figurative thought. Thus, concrete, imagistic thought lends itself less to scientific outlooks and more to magical, mystical and animistic outlooks. This can be summed up by saying that imagery consists of concrete images and the strictly intuitive associations that so typically accompany such images. More will be said about these points later.

Images can be contrasted with symbols. Both can be seen as mediums of thought,³ in that thought uses images and symbols to represent, grasp and manipulate reality. But images represent things on the basis of their inherent resemblance to them, while symbols represent simply on the basis of conventional rules. The point is that images are pictorial and concrete, and resemble what they stand for, while symbols are abstract and general, and represent what they stand for just in conventional ways.⁴ As we'll see, this means that both have special properties (special "logics", as noted above) as mediums of thought.

As we'll also see, mental images are, arguably, distinguishable from thoughts. Images are spread out in space, while thoughts are not. Also, images are, arguably, inert on their own, and come alive only as instruments of thought and emotion, which are active forces in the mind. Brann (1991:197ff.,773ff.) notes that thoughts are often the source and message of images. We purposely create images as incarnations of our thought, and this thought is the ultimate meanings

of these images. However, as we'll also see, even though deliberate images are under the dominion of thought in this way, they are still often vital components of effective thought (compare, for example, how illustrations can clarify and illuminate an abstract, theoretical text). But we'll see that this role of images in thought varies, depending on whether the thought is concrete or abstract.

We will describe the various kinds of images below: dreams and daydreams, the imagery that occurs while falling asleep and waking, the imagery of directed thinking, hallucinations, and eidetic imagery. Thought is *apprehension of conceptual relationships*. It's traditionally classified by philosophers as theoretical (contemplating in order to attain knowledge) and practical (deliberating over courses of action), or as judging, reasoning and conceiving (conceptualizing). Psychologists have classified thought as directed (aimed at problem solving) and undirected (reveries or dreams), as well as imagistic and symbolic. Symbolic thought admits of various stages, extending from intuition to reason, depending on the degree of its fusion with symbolism.

The images in thought are said to differ from those in perception in various ways. But these differences aren't clear-cut or hard-and-fast.⁵ (1) Sensory images are said to possess brute, fixed features, while mental images don't. But it's often claimed that all experience is interpreted (as suggested by ambiguous figures, like the duck-rabbit), so that we shouldn't talk of a purely sensory element to perception. (2) Sensory images are said to have greater strength and vivacity than other mental images. But not so in hallucinations, for example. (3) The images of memory and thought are said not to reveal themselves by observational scrutiny, like sensory images. But, as Brann notes, mysterious figures in dreams can reveal their identity by turning around and facing us as our dream unfolds. (4) It is said that only sensory images can be rotated. But, as we'll see, research on mental imagery now suggests otherwise. (5) While the objects of thought leap into view, perceptual objects are said to move in a continuous space. But imagination can mimic perception here at times. (6) It is also said that while thought images are always meaningful, we have to struggle to make meaning of perceptual images. But we can sometimes struggle with the meaning of our own thought images. (7) The images of thought and memory are said to re-present their objects which needn't be present, while perception directly presents us with objects before us. But there are problems here with the representative theory of perception, as well as with hallucinations again.

Even though the difference between perceptual and thought images isn't clear-cut or hard-and-fast, we needn't conclude that perception and imagination are indistinguishable, for we have workable ways of telling them apart. For example, we check whether we are actually seeing something correctly, rather than just imagining it, by comparing what we see with the reports of others (thus our skepticism of alcoholic's sightings of pink elephants), and with what we know of the world (thus our skepticism of sightings of water on the desert horizon).

The images of memory and thought are also said to differ. Memory images differ from thought images in that the former have a sense of familiarity and presume the former existence of that which is recalled (Casey 1977). Again, this isn't a clear-cut, hard-and-fast distinction: memory images are partly constructions of thought (as Bartlett, Neisser and others have shown), and imaginative images are composed of elements from memory. But, as in the case with perception, we have ready ways of deciding whether memories are veridical. We can rely on the coherence of interpersonal accounts, so that in the end the distinction is a quite workable one. It should be noted here that when imagination is defined as the faculty of producing images, it tends to overlap with memory,⁶ though we might wish to distinguish here between purely reproductive imagination and more creative uses of imagination.

Varieties of Imagery

Concerning the varieties of imagery, Brann says,

Imagery can be distinguished by the state of mind in which it occurs (waking, sleeping, hypnotized or drugged), the location of its appearance (psychic, entopic or external), and its volitional character (autonomous or intentional). [1991:328]

It can also be distinguished in terms of its particular sensory mode, or in terms of its distinctness or clarity (compare, for example, the clarity of the images used in doing trigonometry with the vagueness of so much dream imagery). On such bases, it may at times be more useful to locate the varieties of imagery in a continuum, rather than in discrete categories.

Though (as just noted) images pertain to different sensory modes, Brann argues (1991: 15ff.) for the primacy of the visual mode on the grounds that (1) it registers not only change but also a static manifold (2) it is the spatial sense *par excellence* (3) it can separate at a glance matter from form (e.g., the cathedral spire from its stone).

As already mentioned, the varieties of imagery include dreams and daydreams, the imagery that occurs while falling asleep and waking, the imagery of directed thinking, hallucinations, and eidetic imagery (which is perhaps more akin to the perceptual icon). The imagery of directed thinking and problem-solving will be covered throughout this chapter, as well as the next chapter, but the other kinds of imagery will be briefly described now.⁷

Eidetic imagery is the closest thing we have to "photographic memory." McKellar gives the following examples of it.

One of the commoner kinds of eidetic image is an imagery replica of sense data which has been fixated for a long period of time. For example, a person who has worked for some hours at a microscope sometimes has afterwards an eidetic-like image of the microscopic field. After a long period of weeding in the garden a person may experience, at least with closed eyes, preservative eidetic images of the shapes of the weeds for which he has been looking. [1957:27]

Eidetic imagery is thus extremely vivid. It can perhaps be described as a particularly persistent form of iconic memory, i.e., a persisting form of the visual field. They are actually seen in the same way as the perceptual field, though the subject knows that the objects are no longer externally present. Unlike afterimages, which are burned upon the retina and move with the eye, eidetic images can be scanned (Brann 1991:291). However, they aren't infallible, and can be interfered with by attempts to conceptually interpret them (Brann 1991:291). There is considerable variation among individuals in their susceptibility to this imagery (as is the case with imagery in general). But in general such imagery is comparatively common in children, yet not in adults (McKellar 1957:26). However, this imagery extends into adulthood more often in primal cultures, probably because of the concrete, preoperational nature of their thought.

McKellar gives the following illustrations of hallucinations.

To illustrate auditory psychotic hallucination, we may instance the account given in interview by a schizophrenic patient. He declared that these "voices" were more likely to be heard when he was alone than when in the company of other people; they tended to repeat his own thoughts, but were quite distinguishable from his own voice; he did not experience hallucinatory sounds other than voices, and had never experienced visual hallucination. Visual psychotic hallucination is illustrated by another schizophrenic patient who reported three snakes which appeared at the end of his bed; they had black mouths and speckled skin, and seemed very real. [1957:29-30]

Hallucinations can result from causes such as psychosis, sensory deprivation, drugs or anxiety. Some would even characterize mystical experiences as hallucinations. An example here is the poet and prophet, William Blake, who reportedly had hallucinations, often of a highly mystical character. These included a tree full of angels, God's face looking at him through a window, conversations with Old Testament prophets, his dead brother walking about the house, and an apparition "above the stairs". Some of these were even rendered into his poems and engravings (McKellar 1957:2,67f.). But hallucinations may also appear in quite mundane, normal situations. McKellar personally knew of a professor who made the following claims:

I seem to have a fairly acute sense of smell but I have learned not to rely on the

information it gives me, because I have so often been misled by mistaking imagery for percepts . . . I now distrust my olfactory experiences unless other people experience them at the same time. [1957:30]

Hallucinations are highly autonomous in that they are independent of the viewer's will, like objects of perception. Hallucinations and illusions are both cases of false perception, but the former are personal, while the latter are intersubjective. Because both are (false) perceptual phenomena, they must occur while one is awake. Unlike afterimages, which move with the eye, hallucinations are scannable (Brann 1991). Here they are like eidetic imagery; but they differ from eidetic images in that they are seen as being really present.

Imagery that occurs while falling asleep is usually called "hypnagogic," while imagery that occurs while awakening is usually called "hypnopompic". One of McKellar's subjects describes them as being "like a succession of lantern slides, appearing without voluntary control, and containing detailed material which I didn't know I knew." They are of nearly hallucinatory vividness and autonomy, and are, indeed, on a continuum with hallucination and dream. Yet they differ from hallucinations in that the subject isn't awake enough to assert the reality of what is perceived (Brann 1991:334). They differ from dreams in their hallucinatory character, their lack of unity, and in the ability of subjects to have thoughts or perceptual experiences together with these images that are unrelated to these images (McKellar 1957:36). Other differences are that the hypnagogic dreamer is merely a spectator of an apparition, while the normal dreamer is quite often a participant, and sleeping dreams are hermetically sealed in their own worlds, and thus lack the sense of perceptual invasion so evident in hypnagogic imagery (Brann 1991:335ff.).

Brann gives a vivid description of the oftentimes bizarre character of hypnagogic imagery, and follows it with a good example this kind of imagery from her own experience.

They are uncanny faces, ominous voices, garish shapes, exotic animals – tinselled elephants and bug-eyed fish – as if alien civilizations had let loose the contents of their bestiaries . . . I remember lying in a tent filled with green moonlight after a day of driving through the canyons of New Mexico and seeing behind my eyelids an incessant coming of arroyos suddenly streaming with water, latticed stems of dead chollas growing into stands of aspen, hogans metamorphosing into adobe cathedrals, red mesas shifting against blue mountains – as if the land itself had become mobile around a wearily stationary driver. [1991:335]

Like most other forms of imagery, these images can be terrifying or ordinary, as well as wish-fulfilling or anticipatory of actions about to be performed. For example, one of McKellar's subjects said, "Often when I am waking up I imagine I am really up and am going about the morning's work: washing, shaving, etc." Another subject said, "Terrifying faces, one replacing

the other. This happened quite often when I was younger . . . They seemed too vivid and too extraordinarily evil not to belong to something real, somewhere.” Such reports of faces in the dark are very common. One subject, for example, reported seeing “a large bloated yellow head, pouting red lips, wild blue eyes rolling, hair dishevelled . . . The mouth was moving but there was no sound.” Given the sheer richness and vividness of this such imagery, it isn’t surprising that it has been often been taken as signs of omens, possessions or other sorts of supernatural communications, especially in simple cultures.⁸

Daydreams are the fantasies and reveries we have while awake. Our minds wander to upcoming vacations, desired sexual encounters, etc. Daydreams are also propelled by darker emotions such as anger, fear, shame and self-pity. They are similar to night dreams in their generally looser structure, but they differ from some night dreams because of the lack of rapid eye movements and the ease with which they are summoned forth, as well as because the subject is not sound asleep, but only temporarily withdrawn from his surroundings, in something akin to a “default” state where the mind is idling (Brann 1991:328ff.). Daydreaming differs from the imagery of directed thinking in that it is done for its own sake, for wish fulfillment or fantasizing, rather than to solve some problem. Its structure is loose and divergent compared to directed thought partly because it’s so strongly propelled by, and suffused with emotion.

Night dreams are the highly fanciful experiences suffused with imagery and emotions that accompany our sleep. They are incoherent and disjointed, resembling “a play broken up into a series of scenes rather than a continuous chain of events”. But they may also assume greater narrative structure as they recycle during the night, and they may even undergo fairly reflective stages called “lucid” dreaming. Night dreams seem to be related to daydreams, for curtailing night dreaming increases daydreaming. Dreaming may emanate from the right brain, for damage to this hemisphere has caused total loss of dreaming (and visual imagery) when awake (Blakeslee 1980:31,201).

Overtly, night dreams are often marked by rapid eye movement and unresponsiveness to external stimuli. However, sleep without rapid eye movement also can yield dreams, they’re just less colorful in content and more often described as mere “thinking.” Interestingly, dreamers aren’t wholly unresponsive to external stimuli. Such stimuli can even be incorporated into dreams. Ian Oswald notes a case in which “Robert, Robert, Robert” was spoken to a sleeper, who subsequently reported a dream about a “distorted rabbit.”⁹

As Brann notes (1991:337), dreams are divorced not only from one’s immediate perceptual surroundings, as just noted, but also from the constraints of reason. She summarizes Freud’s views here as follows:

. . . dream thoughts cannot be self-contradictory, for they do not simultaneously

signify a thought and its negation in the manner of . . . reason. Instead some one part of the dream is turned into the opposite of another.

Brann then adds that Freud's discovery of a dream logic is in fact the discovery that dreams are essentially pictorial in nature. For example, there is no such thing as pictorial negation or contradiction. Whatever a picture shows is positive, it can't picture a negation without relying on symbols. Furthermore, nothing can be done to render a picture self-contradictory (they may be made to look physically impossible, but they can't be rendered self-contradictory).

A further note about dream logic that might be added to what Brann says here is that the highly emotional and concrete nature of dream imagery goes hand-in-hand with concrete fields of associations based on resemblance, contiguity, etc., rather with the more abstract principles and coordinated relationships of rational thought. Lacking these comprehensive, systematic perspectives, anything is possible, nothing is ruled out, everything is fluid and ambiguous, and capable of metamorphosing into anything else. We find the same logic applying to myths (which Freud calls "collective dreaming").

Brann takes note of numerous speculations about the supposed purpose of dreams. For example, Freud claims that they guard sleep by assimilating potentially disturbing stimuli (e.g., noises, thirst) into the dream itself (recall the rabbit dream, above), or by fulfilling emotional impulses that would otherwise agitate slumber once the sleeping ego relaxes its control over them. Fromm saw dreams as escapist regressions from the rigors of life; they are also sometimes seen as attempts by the mind to sort through and consolidate daily experience, or as cognitive rehearsal or practice play.

But Brann feels that dreams needn't have any such practical purposes.

Isn't there an argument that the best things in life are un-functional . . . ? Dreams, I want to propose, are essentially feeling-informed imagery. It is the lay opinion that the arts express emotion and that artists make art at once to expel, express and enhance their feelings Dreams are visual or musical precipitations of feeling, the shaped appearances of passion. They need be nothing more than the soul's representation of its affective life to itself. [1991:346]

Brann's point seems, as usual, insightful. But the emotional expressions she mentions need not be *incompatible* with the very practical end of catharsis, for example. Emotional expressions often seem to fixate upon the powerful, primordial fascinations and needs at our instinctual depths. Paranoia seems to be a particularly prominent feature of the dreamy mind, not just during nightmares (especially in people under daytime stress¹⁰), but also when we awaken

temporarily in the middle of the night. Then it sometimes seems as if we can almost hear (like Kafka seemed to) the helpless, frightened cries of the wild, caged animal who stirs deep within us while its civilized keeper sleeps. Dreaming might serve in part as attempts by our instinctual, animal selves to confront, indulge, defuse and purge the emotional ordeals we encounter in the natural and social jungles we inhabit. We do much the same while awake, when we talk out emotionally charged problems with friends, or work through them alone in our minds.

This may be relevant to speculation about possible links between dreaming and insanity. Many authors have noted that dreams and insanity resemble each other. For example, Kant remarked that “the madman is a waking dreamer” in *The Classification of Mental Disorders*. Both dreams and hallucinations of the insane are typically autonomous (the subject has little conscious control over their content) and autistic (self-absorbed and resistant to reality checks). But another similarity might be that both dreams and some psychoses are deep-rooted attempts by the mind to purge emotional conflicts or indulge emotional needs with wish-fulfillment.

With this point in mind, it isn't surprising to find that psychotic hallucinations actually take the form of both nightmares and wish fulfillments, just as dreams do. An example of nightmarish hallucinating has already mentioned above. An example of wish-fulfilling hallucinating is given by McKellar (1957:16). He quotes a schizophrenic who resented McKellar's attempts to take her “dream world” away from her. She complained to him in the course of her therapy that “You've wakened me up now I don't want to come back, but I'm half-way back.” (Compare mystical experiences here.) But there are clearly many other factors at work in psychoses other than confronting and indulging our emotions. The main point is simply that the emotional expression Brann rightfully speaks of may have a genuine functional role to play in our psychological well being, as well as just an aesthetic role.

THE INDEPENDENCE OF IMAGES AND THOUGHT

Having seen the familiar ways in which images and thought appear together, we can now turn to their independence from each other. To start with, it's hard to see how thought can be assimilated to imaging, for not only is much thought obviously imageless, but also the more deliberate forms of imagery are obviously invoked by thought and get their meaning and direction from thought. So the independence of thought from images isn't very controversial. Therefore, the brunt of the argument below will be to defend the more controversial position that *images are independent of thought*. This view conflicts with well known views that images can be assimilated to thought. In the latter views, images are not *observable* objects that we mentally scan, but are instead mere *thought* objects that we simply contemplate (or verbal objects that we talk about).

Assimilating Images to Thought

While psychology in this century has had much to contribute to our understanding of imagery, the two dominant philosophies in this century, phenomenology and analytical philosophy, have unfortunately largely concerned themselves with repudiating the existence of mental imagery as normally construed, namely as private mental representations or pictures of things.¹¹ Instead, images are seen as inherent parts of thought processes, or (when spoken) as verbal descriptions.

Phenomenology is the study of what appears in consciousness. Though founded by Brentano (1838-1917), it was shaped most by Husserl (1859-1938). He sought to give introspective descriptions of the forms of consciousness, and to analyze the essential structure of consciousness. He tried to give a pure and unbiased description of just what directly appears in consciousness, without any presuppositions about the existence of an external world independent of consciousness, and without any attempts to explain appearances in terms of some underlying reality (a preoccupation of science). This so-called “phenomenological reduction” thus “brackets” or suspends beliefs in the external world and treats this world simply as a phenomenon, i.e., an appearance in consciousness. Supposedly, if we stick in these ways to describing just what we experience, we’ll find that in imagining something, there’s only the self and this imagined thing, but no third item (the *image of the thing*). Imagining something is thus *thinking about it*, not *observing an extraneous image*.

This phenomenology is most popular in continental Europe, and reflects the continent’s traditional rationalist tendencies. This is apparent, for example, in its preoccupation with what’s absolutely certain in consciousness (compare Descartes) and its concern with essential structures of consciousness (compare Kant). In these ways it’s like another modern continental approach to the mind, namely, structuralism.

The aim of analytical philosophy is conceptual analysis. It is most popular in the English-speaking world, and reflects British empiricism’s traditional aim of reorienting philosophy from dogmatic metaphysical speculation to the more humble task of analyzing ideas in order to clarify philosophical problems. However, analytical philosophy differs from traditional empiricism (as well as phenomenology) in that it replaces introspective analysis with linguistic analysis. The aim here is to stick to what is publicly observable rather than private and hidden. Here, a *verbal description* can “simply take the place of the image.” Analytical philosophy thus retains the traditional empiricist disdain of metaphysics, and typically prefers to stick to the actual linguistic usage, rather than engaging in rationalist searches for absolutes and essences (again, in contrast to phenomenology).

Here analytical philosophy resembles another philosophy popular among English

speakers, i.e., functionalism. The latter rejects structuralism's search for deep structures cutting across all cultures, and instead focuses on particular cultures and how their particular elements function together.

Thus phenomenology and analytical philosophy often exhibit contrasting approaches. The former engages in a rationalist search for essential truths about the structure of experience through introspection. The latter takes a more empiricist approach that rejects the rationalist search for essences and the introspective method in favor of analyzing (in all its empirical diversity) how we actually speak about experience. As we'll see below, although both traditions tend to reject images as inner pictures, their reasons for doing so stem back to these two quite different sets of convictions. With these points about both traditions in mind, let's now turn to their accounts of imagery.

Sartre

Sartre begins his *Psychology of Imagination* (1940) with a phenomenological attempt to establish the essential character of the image and imagination. At the very outset, he finds four characteristics of imagining: (1) it is a form of consciousness rather than an observing of pictures in the mind, (2) it is quasi-perceptual because its objects exist only in so far as they are thought of, (3) it posits its objects as nothingness, i.e., as not being real, and (4) it is spontaneous and creative, unlike perception, which is passive. He then goes on to say on this basis that the image acts as an analog to help us envision an absent object.

Concerning the first characteristic, that imaging is a form of consciousness, Sartre is out to debunk the supposedly naive view of images that treats consciousness as "a place peopled with small likenesses" which we call "images." This misconception (which arises from thinking spatially) appears in Hume when he defines ideas as the faint images of impressions in thought, and when he adds that ideas have merely *extraneous* relations to what they refer to:

But to form the idea of an object, and to form an idea simply is the same thing; the reference of the idea to an object being an extraneous denomination, of which in itself it bears no mark or character. (*Treatise*, p.20)

Sartre's reply is that,

The imaginative consciousness I have of Peter is not a consciousness of the image of Peter: Peter is directly reached, my attention is not directed on an image, but on an object. [p.8]

As a phenomenologist, Sartre sees consciousness as being by its very nature intentional, i.e., always directed toward objects (to see, think or feel is always to see, think or feel something¹²). When we envision something in our mind, *we're directly aware of the object itself, not of an image extraneously related to the object*. There's only Peter and I, not a third entity – the mental image of Peter which intervenes between us and represents Peter to me.

In treating images as pictures in mind, supposedly Hume labors under what some would call the “illusion of immanence,” that is, he treats such images as actually immanent in (residing in) consciousness as its true object, when in fact (according to Sartre) we're directly aware of the object itself without any intermediary. These objects are part of our thought, they aren't things outside our thought which we inspect like we do with pictures. When we think of an absent chair, we're not observing something which is *independent* of thought (the picture in our mind), but only thinking about something *residing within* thought. Imaging is thus seen by Sartre as a way of thinking about objects, *a form of consciousness* towards an object, rather than the observing of pictures in the mind. (The distinctive traits of this “imaginative consciousness” will be noted below.)

Sartre feels that the naive view of images as mental pictures of things absurdly treats such images as “opaque” intrusions into consciousness. In fact, “all consciousness is consciousness through and through,” that is, consciousness is wholly transparent to itself. He claims this because opaque, hidden, impenetrable facets of consciousness are incompatible with his phenomenological aim of describing only what is directly given in consciousness.

. . . it was impossible to slip these material portraits into a conscious synthetic structure without breaking the contacts, arresting the flow, breaking the continuity. Consciousness would cease being transparent to itself; its unity would be broken in every direction by unassimilable, opaque screens. [p.6]

Sartre's claim here that consciousness must be transparent to itself, is a highly debatable one. For there does seem to be different levels of awareness of objects, in that shifting our attention can allow us to become more fully aware of these objects in our consciousness. An example is driving while talking: here we do both simultaneously, while constantly shifting the levels of attention given to each task.

Sartre's point is that “When I perceive a chair it would be absurd to say that the chair is *in* my perception . . . the chair is the *object* of that consciousness.”

What we find here is not a semblance of the chair which suddenly worked its way into consciousness and which has but an “extrinsic” relation to the existing chair,

but a certain type of consciousness, a synthetic organization, which has a direct relation to the existing chair [p.7]

Imaging is *nothing more than* this form of consciousness, this direct relationship with its object. It's an "imaginative consciousness," not an intervening picture in the mind.

Having found that imaging is a form of consciousness rather than an observing of pictures in the mind, Sartre is then concerned with the distinctive traits of this "imaginative consciousness." This brings him to the second overall characteristic of imagination, namely, that it involves an attitude towards its object called "quasi-observation." He arrives at this finding by comparing different types of consciousness with the imaginative consciousness.

To perceive, conceive, imagine: these are the three types of consciousness by which the same object can be given to us. In perception I *observe* objects. By this we must understand that although the object enters into my perception in its completeness, I nevertheless see it only from one side at a time When, on the other hand, I *think* of a cube as a concrete concept, I think of its six sides and its eight angles all at once . . . [p.9]

Perception and imagination differ in several ways. When we imagine the cube, we know straight off that it's a cube: "we no longer have to make a tour of it" to find out what it is. Also,

The image teaches nothing . . . it is complete at the very moment of its appearance. If I amuse myself by turning over in my mind the image of a cube, if I pretend that I see its different sides, I shall be no further ahead at the close of the process than I was at the beginning: I have learned nothing No matter how long I may look at an image, I shall never find anything in it but what I put there. [pp.10-11]

Sartre might have been surprised here to learn of the individual who described his vivid hypnagogic imagery as being "like a succession of lantern slides, appearing without voluntary control, and containing detailed material which I didn't know I knew." This is a commonly reported feature of such imagery (see McKellar, p.34ff.).

Sartre says that whereas perception is "overflowing" with potential observations ("there is always . . . infinitely more than we see"), the image is "impoverished," it exists only as it's actually thought of.

We must not say that the other relationships exist in secret, that they wait for a bright searchlight to be directed upon them. No: they do not exist at all Objects exist only in so far as they are thought of. This is what all those [like

Hume] who consider the image to be a reborn perception fail to understand In a word, the object of the perception overflows consciousness constantly; the object of the image is never more than the consciousness one has; it is limited by that consciousness: nothing can be learned from an image that is not already known. [pp.11]

Imaging seems to be like perception: “because its content retains a sensible opacity, like a phantom . . . it gives the impression of being an object of observation.” Yet it is in fact only *quasi-perception* because, as just noted, its objects exist only in so far as they are thought of.

Our attitude towards the object of the image could be called “quasi-observation.” Our attitude is, indeed, one of observation, but it is an observation which teaches nothing. [p.13]

Again, these claims might be considered controversial. Arguably, images aren’t always fully penetratable by thought, and can exhibit unnoticed details or hidden designs upon further inspection. This is evident when we try, for example, to mentally contrast the different kinds of chairs or windows in our home, or try to mentally solve the problems like the following one:

. . . a 6-centimetre cube of wood is painted all over with red paint. Now the cube is cut into 1-centimetre cubes. How many of these have (i) three red sides; (ii) two red sides; (iii) one red side; (iv) no red sides?¹³

Sartre’s third characteristic of imagination is that, unlike perception, it posits its objects as nothingness, i.e., as not being real. “Alive, appealing, and strong as an image is, it presents its objects as not being.” (p.18) His final characteristic of imagination is that it is spontaneous. That is, it’s active and creative, unlike perception, which is passive. “The consciousness appears to itself as being creative, but without positing that what it has created is an object.” (p.18)

Sartre then goes on to say on this basis that the image acts as an analog to help us envision an absent object. He means that the image serves like a photo here to help us recall what the object looks like. This doesn’t mean that we have a picture in our mind like a photo. Rather, it means that thinking with images is thus *thinking analogically* (by means of representations) just like thinking of something by means of a photo. He thus defines the having of an image as follows:

. . . the image is an act which envisions an absent or non-existent object as a body, by means of a physical or mental content which is present only as an “analogical representative” of the object envisioned. [p.26]

Wittgenstein

Turning to analytical philosophy, we find a similar skepticism about treating mental images as pictorial objects. Although Wittgenstein's early picture theory of meaning was compatible with images, his later philosophy saw them as irrelevant to meaning. He asks in his *Philosophical Investigations* (1953), "What makes my image of him into an image of him? Not its looking like him." (p.177) Similarly, he says, "An image is not a picture though a picture can correspond to it." (*PI*,301) What, then, is an image? His answer is that "the mental picture is the picture which is described when someone describes what he imagines." (*PI*,367) In the same vein, he says,

Suppose, however, that someone were to draw while he had an image He could be asked: "Whom does that represent?" And his answer would be decisive. It is quite as if he had given a verbal description: and such a description can also simply take the place of the image. [*PI*,p.177]

So here, as with phenomenology, the tendency is to treat images not as pictorial objects that we inspect in our minds, but as inherent parts of our thought processes or (when spoken) as verbal descriptions.

With this claim that descriptions can take the place of images, Wittgenstein is verging on what has recently been called "propositionalism," which is the reduction of all mental activity, including imagery, to verbal formulations. This orientation is also evident in his claim that "the mental picture is the picture which is described when someone describes what he imagines" (*PI*,367), as well as in his claim that images are useless in talking or thinking about someone, "A picture of him won't do, for how are we to know whom it represents?". Again, this orientation is evident in his famous dictum (which we'll encounter below) that the inner event stands in need of an outer criterion, as well as in his observation that the private image is an idle ornament, "a something about which nothing could be said." (*PI*,304).

Brann objects to this contention above that verbal descriptions can simply take the place of images, citing those who have lost the ability to image, and who in fact feel this to be a real *loss*. Again, the abilities of idiots savants can be fully understood only by reference to their phenomenal powers of imagery.

But Wittgenstein's main point has less to do with the non-pictorial character of images than with the meaning of mental terms like "imagine." Here his attack is on his older referential theory of meaning with its implicit assumption that the meaning of terms is what they refer to, which in the case of mental terms would be an underlying mental object or process (thus the meaning of "imagine" would be in terms of underlying mental imagery). This attack fits into the

analytical tradition's stress on looking to the actual diversity of language uses, rather than setting off in a bold search for the essential nature of things.

But now it may come to look as if there were something like a final analysis of our forms of language . . . as if there were something hidden in them that had to be brought to light This finds expression in questions as to the essence of language, of propositions, of thought . . . they seen in the essence, not something that already lies open to view . . . but something that lies beneath the surface. [PI,91-2, cf. PI,66 on games]

When we look specifically to the mental term, "imagine," we find that the underlying image is irrelevant its analysis.

One ought to ask, not what images are or what happens when one imagines anything, but how the word "imagination" is used. [PI,370]

He takes the same approach to the rest of our mental vocabulary.

We are not analyzing a phenomenon (e.g. thought) but a concept (e.g. that of thinking), and therefore the use of a word. [PI,383]

Private events like images and sensations are irrelevant to language because language is an social practice which is taught and corrected according to public rules. But because images and sensations are private, there's no way to publicly verify what we say about them, unless this privileged access is assumed to be incorrigible.

Let us imagine a table (something like a dictionary) that exists only in our imagination. A dictionary can be used to justify the translation of a word X by a word Y. But are we also to call it a justification if such a table is to be looked up only in the imagination? –"Well, yes; then it is a subjective justification." –But justification consists in appealing to something independent. –"But surely I can appeal from one memory to another. For example, I don't know if I have remembered the time of departure of a train right and to check I call to mind how a page of the time-table looked. Isn't it the same here?" –No; for this process has got to produce a memory which is actually *correct*. If the mental image of the time-table could not itself be *tested* for correctness, how could it confirm the correctness of the first memory? (As if someone were to buy several copies of the morning paper to assure himself that what it said was true.) [PI,266]

From the standpoint of linguistic analysis, the private image or sensation is an idle

ornament. It exists, but it is “a something about which nothing could be said.” (*PI*,304). Only its public manifestations are relevant. Our concept of pain, for example, must be understood in terms of pain behavior, not in terms of the private, inner event. Thus, “An ‘inner process’ stands in need of outward criteria.” (*PI*,580).

Wittgenstein denies that he’s a behaviorist, at least in the sense of denying the existence of inner objects. They aren’t fictions (“naturally we don’t want to deny them”) except in the sense of grammatical fictions (*PI*,307-8). They’re “a something about which nothing could be said.”

His denial that he’s a behaviorist may seem equivocal to some. By saying that “An ‘inner process’ stands in need of outward criteria,” he is, indeed, allowing that mental events exist (unlike some of the most radical behaviorists, perhaps). But at the same time this dictum points to a purely behavioral account of the meaning of mental terms which is characteristic of all philosophical behaviorists (though Wittgenstein’s analysis is not in terms of simplistic necessary and sufficient behavioral conditions for employment of mental terms).

Ryle

While Wittgenstein’s later works are subtle, incisive and inquiring, Ryle’s *Concept of Mind* (1949) is bold, hammering and polemical. Ryle’s account of imagination is part of his overall attempt to rid philosophy of the dogma of “the ghost in the machine”. This dogma says that our body is a physical substance that is controlled from within by our mind, which is a mental substance that’s wholly private and hidden except to its own introspection. Ryle wants to replace this dogma with an objective, behaviorist analysis of mental terms.

. . . when we characterize people by mental predicates, we are not making untestable inferences to any ghostly processes occurring in streams of consciousness which we are debarred from visiting; we are describing the ways in which those people conduct parts of their predominantly public behavior.

Ryle (like Wittgenstein) is located in the analytical tradition and influenced by the phenomenological tradition. He begins his chapter on imagination much like Sartre’s earlier work above, by setting up the supposedly naive view he is about to debunk.

The crucial problem is that of describing what is “seen in the mind’s eye” and what is “heard in one’s head”. What are spoken of as “visual images”, “mental pictures” . . . are commonly taken to be entities which are genuinely found

existing and found existing elsewhere than in the external world. So minds are nominated for their theaters. [p.232, cf. his p.236 on Hume.]

Just as Sartre attributed this misconception to spatial interpretations of the mind, so Ryle attributes this view that we can actually visualize images to the role of vision in our lives.

Among the common objects of visual observation there exist both visible things and visible simulacra of them, both faces and portraits . . . both babies and dolls; and this makes it natural to construe the language in which we describe imaginations in an analogous way. [p.234]

Ryle doesn't deny that we see things in our mind's eye, but just that there exist things like material objects which we see.

. . . the familiar truth that people are constantly seeing things in their minds' eyes and hearing things in their heads is no proof that there exist things which they see and hear, or that the people are seeing or hearing. Much as stage-murders do not have victims and are not murders, so seeing things in one's mind's eye does not involve either the existence of things seen or the occurrence of acts of seeing them. So no asylum is required for them to exist or occur in. [p.232]

The problem thus isn't whether images exist, but what their nature is. A constructive view of imagination as people "fancying themselves witnessing things" soon appears in Ryle's polemics.

I want to show that the concept of picturing . . . is a proper and useful concept, but that its use does not entail the existence of pictures which we contemplate or the existence of a gallery in which such pictures are ephemerally suspended. Roughly, imaging occurs, but images are not seen. I do have tunes running in my head, but no tunes are being heard . . . [p.234]

There is not a real life outside, shadowily mimicked by some bloodless likenesses inside; there are just things and events, people witnessing some of these things and events, and people fancying themselves witnessing things and events that they are not witnessing. [p.235]

Ryle's constant reference to imagining as "fancying" has led commentators to say that he treats imagination as a form of pretending. This view that when one imagines an object then one is simply fancying or pretending that one sees it, has been roundly criticized over the years (and not surprisingly). Yet, as Warnock points out, Ryle elaborates on his view that imagination is fancying that one is seeing something not present, by comparing this to seeming to see someone

in a photo: both the photo and image help us to think about the person.

. . . when I hear a recording of a friend's voice I fancy I hear him singing or speaking in the room, though he is miles away. The genus is seeming to perceive, and of this genus one very familiar species is that of seeming to see something, when looking at an ordinary snapshot of it. Seeming to see, when no physical likeness is before the nose, is another species. Imaging is not having shadowy pictures before some shadow-organ called "the mind's eye"; but having paper pictures before the eyes in one's face is a familiar stimulus to imagining. [p.240]

Ryle's point seems to be that visualizing someone is thinking about him in a certain way: it's fancying that one is seeing him, not actually seeing him by looking inward at a "paperless photo." Warnock, who sympathizes with this view, highlights its links with phenomenology. In commenting on the passage above, she refers to Brentano's view that when we imagine an object not present, there is only the object and oneself, not a third entity (the mental image of the object which intervenes between us and represents the object to me).

It seems that Ryle has added to the simple demolitionist theory of Brentano a further factor. A imagining B and A perceiving B are both relations between A and B. But there is a halfway kind of perceiving when the relation between A and B is mediated by another object, a portrait or representation of B. Imagining B is now likened to this kind of perception. But there is a good sense in which A, when he looks at the portrait of B, is not perceiving B at all. What he is doing is thinking about B, and perceiving a canvas. So, when he is imagining B he is thinking about B and not perceiving a canvas, or anything else at all. But he is thinking visually. This is what Ryle refers to, somewhat misleadingly, as "fancying that he is seeing." (*Imagination*, p.156)

On this view, Ryle is portraying imagination as thinking about an object through the mediation of an image, just like one thinks about someone seen in a photo (though, again, there is no paperless photo and no actual perception within our minds). This is similar to Sartre's account, above, which portrays thinking with images as thinking analogically (by means of representations), just like thinking of something by means of a photo. Both are claiming that photos and other physical analogs of objects are the model for interpreting images.

It should be noted that this isn't easy for everyone to accept. What these authors are rejecting is nothing less than what people naturally and commonly describe as the *observing of pictures* in their minds. This is what we do when, for example, we're wondering whether a tie on sale will go with the jackets hanging in one's closet back at home, or when mentally counting the windows in one's house room by room to estimate drapery costs. In such circumstances, we

might wonder how people can be so profoundly wrong when they commonly think they are actually seeing something and can describe it in detail. We'll return to this below.

Construing imagining as thinking visually or fancying that we are seeing something absent fits into Ryle's analysis of mental language in terms of dispositions to behave in certain ways, like pretending, anticipating or rehearsing.

Going through a tune in one's own head is like following a heard tune and is, indeed, a sort of rehearsal of it. But what makes the imaginative operation similar to the other is not, as is often supposed, that it incorporates the hearing of ghosts of notes similar in all but loudness to the heard notes of the real tune, but the fact that both are utilizations of knowledge of how the tune goes Knowing a tune just is being able to do some such things as recognize and follow it, produce it, detect errors in the playing of it, and go through it on one's head . . . [p.254]

Similarly, our ability to, for example, draw an absent object isn't due to the existence of an inner picture of it, but simply to having "learned and not forgotten" it (p.257ff.).

This sort of analysis of imagination also fits the analytical tradition of looking to the actual diversity of phenomena, rather than setting off in a bold search for the essential underlying nature of things. In this case this essence consists of the presumed mental phenomena which supposedly underlie and give meaning to our mental vocabulary.

There is no special Faculty of Imagination, occupying itself single-mindedly in fancied viewings and hearings. On the contrary, "seeing" things is one exercise of imagination, growling somewhat like a bear is another; smelling things in the mind's nose is an uncommon act of fancy, malingering is a very common one, and so forth. [p.244]

By contrast, those who feel that imagination actually does produce pictorial images in the mind assert precisely what Ryle's is here denying: that there is a true *faculty* of imagination (i.e., of imaging). They would point, for example, to how intellectually impaired people can have extraordinarily rich abilities for concrete imagery (Sacks 1987), or to how verbal and imagistic skills can be damaged separately through injury to the left and right temporal lobes, respectively (Hebb 1972).

Ryle downplays the efficacy of imagery. He makes the same point Sartre did about images being impoverished and teaching nothing new: they are "at best, ways of conveying lessons already learned." (p.260) He then goes on to say it is a mere "knack" whose fidelity is grossly exaggerated, and which is evidenced only by successful description.

Reminiscence in imagery does not differ in principle [from mimicry], though it tends to be superior in speed, if otherwise greatly inferior in efficiency; and it is, of course, of no direct public utility. People are apt grossly to exaggerate the photographic fidelity of their visual imagery The main reason for this exaggeration seems to be that they find that very often . . . they can give very comprehensive detailed . . . verbal descriptions of episodes at which they have been present. They are then tempted to suppose that they must be checking their narratives against some present replicas . . . of the vanished scene Ability to describe things learned by personal experience is one of the knacks we expect of linguistically competent people; ability to visualize parts of it is another thing that we expect in some degree of most people and in high degree of children, dress-designers, policemen, and cartoonists. [p.260-1]

As Brann points out, these observations move Ryle in the direction of reducing all mental activity, including imagery, to verbal thought and reports, a position that cognitive scientists have subsequently called “propositionalism.” Here he is comparable not only to Sartre in stressing the impoverishment of imagery, but also to Wittgenstein, who as we saw above, claimed that descriptions can take the place of images, and that the inner event stands in need of an outer criterion.

Despite Ryle’s attacks on Cartesian dualism and introspective psychology, one is left with the distinct impression in the end that rather than launching a *direct assault* on these doctrines, Ryle is in fact talking at *cross purposes* with them and actually wholly bypassing them. While Ryle’s targets are concerned with traditional metaphysics and inner psychological processes, Ryle himself is actually engaged in the *quite different* enterprises of linguistic and phenomenological analysis of mental terminology. This isn’t to say that there are no points of contact between these different approaches; but where these do occur, the conclusions aren’t so cut and dry as Ryle makes them out to be. As we’ll see, despite Ryle’s real contributions to linguistic analysis, his conclusions about the nature of the imagination and mind are in fact highly debatable.

Warnock

Writing, with great erudition and keen insight, Warnock synthesizes many of the views above with those from other interesting sources, to produce one of the most important works on imagination to date. She, like Ryle, is an analytical philosopher influenced by the phenomenological tradition. Like both of these traditions, she is skeptical about treating mental images as mental pictures of things. In her book, *Imagination*, she is, like Ryle, questioning claims about

the nature of images, but not about their existence. Denial that we “visualize things or attempt to recall things by ‘seeing’ them . . . is manifestly absurd . . . our problem is what images are, not whether they exist.” (p.154) What images are most certainly *not* are mental pictures that we inspect in our mind: “the image cannot be treated as an independent object which can be examined on its own.” [p.172]

Her constructive account of imagination also reflects the view of Ryle and Sartre. She sees their view as being that photos, portraits and other physical analogs of objects are the model for interpreting images. Imagining is, on this view, thinking analogically (by means of representations) about an object through the mediation of an image, just like thinking about someone seen in a portrait.

. . . he [Sartre] has argued that we must not regard a mental image as something in itself which can be inspected and observed, in the way that an object in the world can be observed. The image, we were told, was nothing in itself but only our way of attempting to bring within our perceptual grasp, by means of an analogue, something which was not within our grasp. [p.178]

We may not speak of the image as a thing, like a canvas only in our heads. But we may say that in thinking with images we are thinking analogically, or by means of representations, just as we are when we look at somebody’s portrait rather than at himself. [p.163]

Warnock accepts this view with minor reservations.

For my part I have no doubt that what we may call the phenomenological tradition, and this includes Ryle, offers a better way of describing mental images than the empiricist, or Humean, tradition before it, but has not, even so, got it completely right. [p.156]

She has reservations, for example, about Sartre’s attempt to reveal the nature of images in a pure form with a presuppositionless “method of certainty,” because she feels that the image cannot be separated from thought about the object. She also has reservations about Sartre’s claim that we construct images deliberately (and his related assumption that the mind is wholly transparent to introspection), because we are obviously capable of having different trains of thought at the same time, as when we talk while driving or daydream while reading. Finally, she has reservations about Sartre’s claim that imagination and memory are wholly distinct (which he claims because he feels that the former but not the latter emancipates man from necessity), for we use imagination to interpret both the future and past (compare Bartlett’s experimental findings that memory is a highly constructive process). But, again, she feels that these reservations

only require modifications of Sartre.

Like the other writers noted above, Warnock emphasizes that the image is a form of thinking rather than an perceptible object: “in talking about images we are talking not only about a class of things which represent, but about a species of thinking” (p.159). She quotes Wittgenstein’s claim that images are useless in talking or thinking about someone, “A picture of him won’t do, for how are we to know whom it represents?”. She then surmises (p.158) that “We must concentrate not on the pictures but on how we interpret them . . . “ Here Warnock seems to reflect the same propositionalism (reduction of all mental activity, including imagery, to verbal thought and reports) that we saw in Sartre’s claims about the impoverishment of images, Wittgenstein’s claims about descriptions substituting for images, and Ryle’s claims that imagery is a mere knack whose fidelity is grossly exaggerated, and which is evidenced only by successful description.

In keeping with this approach, Warnock actually sees the image as “our attempt to reach the object in our thoughts” as we concentrate on various sensory aspects of it.

If I conjure up the image of a man as was yesterday, I may concentrate on what he looked like Or I may concentrate on what he said and the tones in which he said it Was it a threat? A promise? A confession But all the time *he* is the object of my thought. The image *is* our attempt to reach the non-existent or absent object in our thoughts as we concentrate on this or that aspect of it, its visible appearance, its sound, its smell. [p.173]

Thus, when we conjure up an image in order to think about or recall some object, the image is always absorbed into our thought about the object as we focus on (think about) certain aspects of the object.

The image thus shouldn’t be seen as something independent of our thought about objects. “The images themselves are not separate from our interpretations of the world; they are our way of thinking of objects in the world.” (p.194) “We may need the noun [‘image’]; but to understand it we have to understand the verb [‘imaging’].” (p.172) She make this point that images aren’t independent of thought about objects most forcefully on p.161:

When we stop seeing it as a portrait of a man, we may still see the canvas before us . . . there remains a residue which is describable But when we are imaginatively conscious of an absent man through an image only, our imaginative consciousness wanes, then the image fades too. There is no describable residue. This is of the greatest importance. We shall find that, though we must talk in terms of images, though we must use the noun “image”, yet we shall always go wrong if we try to separate the image, and regard it as something totally distinct

from that of which it is the image. In other words, it is impossible to describe a mental image in itself.

The Common-sense Reply

Let's now scrutinize the main skeptical claim in twentieth century philosophy about images, namely, the claim above that they aren't inner pictures but modes of thought. This claim is that images aren't *private pictures* that we can examine in our minds like physical pictures, but just modes of thinking about objects in the world: "the image cannot be treated as an independent object which can be examined on its own."

One of the most prominent features of Brann's recent work, *The World of Imagination*, is its systematic argument against this view which so pervades contemporary philosophy, and in favor of the traditional, naive view that mental pictures actually exist, and that we can actually examine them.

Hard though the scientists of mental imagery try, they cannot get around the fact that the representations they deal with are like pictures The methods have to assume, and the experiments continually corroborate, that having imagery is somehow like perceptual seeing, and that it is somehow like seeing pictures The minimal reason for this assumption is that people do naturally talk of seeing pictures before their mind's eye. [p.235]

She admits that this view is unfashionable. But she feels that philosophy is wrong to try to explain away the very experience that people so persist in reporting about their imagery, namely that it is like seeing pictures.

There is, to be sure, a current negative consensus which has been nearly a hundred years in the making But a mainstream in full flood is ever the precursor of the turn of the tide Indeed there are already signs I hope this thesis is as explicit as it is unfashionable. Its motive is a version of the ancient astronomers' ambition to "save the [heavenly] appearances," to save them both as appearances and for reason, by undergirding them with a rational hypothesis. In this vein I would wish to save the inner appearances For it seems to me that . . . philosophy should underwrite rather than undermine such common opinion as we have left. Yet all the current critiques of the image-forming imagination are driven by motives other than the desire to account for it in terms that preserve . . . the experience people persist in reporting. [pp.193-4]

Experimental Evidence for Images

There is recent experimental evidence that inner pictures do have a genuine role to play in cognition. For example, Shepard and Cooper (1982) showed subjects pairs of perspective drawings of three-dimensional arm-like figures that contained right-angle bends and that were comprised of ten cubes stuck face to face. Some of these pairs were mirror images (rotations) of each other. Subjects were asked to determine which of these pairs were mirror images, and their efforts were timed. *The times taken were directly proportional to the angle of rotations required to make the figures coincide* (60 degrees per second), which suggests that the subjects were comparing the figures by spatially rotating them in their minds (presumably after having noticed at a glance that certain portions of the figures are the same).

A competing explanation here could construe what's going on verbally ("propositionally") rather in terms of pictorial images. That is, it could be that the figures were compared by verbally formulating their characteristics, turn by turn. But then a full 180-degree rotation (because it is conceptually a simple flip) would be fastest rather than the slowest, as was actually the case. Nor would this explain why subjects rotated the figures at a constant rate of 60 degrees per second. This is apparently not the most economical explanation, nor the one spontaneously preferred by subjects. This experiment thus seems to show that we use actual *inner pictures* rather than verbal formulations in certain cognitive tasks.

Brann feels (pp.14,17,198,203,235f.,389f.,418ff.) that mental images share the following traits with physical pictures: they are *spatial*; they are things that are *scanned*; they have fields or *mediums* upon which they appear (like the canvas in a portrait); they incorporate *perspectives* or points of view separable from those of the viewer; they are recognized as being *representations* of originals; and they are *interpreted* and significant. But mental images are said to differ from physical pictures in the following ways: they aren't entirely passive under scanning; they fade, regenerate, transform quickly; their medium isn't in space like canvases, paper, etc.; and their meaning is transparent to their experiencer.

The latter two traits attributed above to both images and physical pictures (i.e., that they're representations and interpreted) are fairly straightforward. But the other four are controversial, and require justification. In this regard, we will now look at experimental evidence cited by Brann (pp.237ff.) that *images are like pictures* in being *spatial* and *scannable*, and in having *mediums* and *perspectives*.

One series of experiments (Kosslyn 1980) tested whether mental images have *space-like dimensions* that are actually *scanned*, like pictures are. Subjects were asked to memorize a map of an island on which pictorial features (a hut, tree, beach, etc.) were located. They were asked to focus on one of these features and then make a black speck move as fast as possible from that

feature to another destination feature, once it was named. They were to signal when they had completed the task, and these tasks were timed. The results were that the tasks increased linearly with the distance travelled from the original location, which indicates that this mental imagery was being scanned, and is thus space-like. It is for reasons such as this that Brann depicts imagination as “an inner visual space” (p.17).

A problem here was to rule out here that subjects were not following instructions. They might just be short-circuiting the requested procedure by just recalling whether the requested destination was one of the actual features on the list, then signaling that they had completed the task. This would be a purely verbal approach to the task, which would simply be testing how long it took subjects to recall words from a list. To insure that this wasn't being done, the subjects were asked to not to scan the map but just to respond as quickly as possible. Predictably, there was no correlation between response time and distance between destinations.

Another series of experiments (Kosslyn 1983) suggest that imagery is seen from a *pictorial perspective*, like pictures are. It was found that the amount of time taken to look back and forth between mental objects that were variously positioned in three-dimensional space was proportional not to the three-dimensional distance between them, but to the distances between them as if seen in a two-dimensional picture. The latter represents their pictorial plane or *spatial perspective*. Nonetheless, this pictorial plane contains three-dimensional information, for objects so portrayed can be rotated, for example, to reveal their backsides.

Another series of experiments (Kosslyn 1983) suggests that images occur in a *medium*, much like physical pictures do. The resolution of details below a certain size is limited by this medium (much like the graininess of a canvas or the brush strokes of paint make it difficult to discern small details in a portrait). Subjects were asked to image, for example, a rabbit in correct relative size next to an elephant and also next to a fly. As the rabbit thus grew smaller and larger, its details were more slowly and quickly reported, respectively. Of course, these limitations might be seen as less of a limitations of the image medium and more of a limitation of the “acuity” or (attentiveness to closely packed detail) of the mind's eye. However, it may be difficult to give anything but a metaphorical sense to the notion of such “acuity” (see the discussion of the mind's eye below).

In this last-mentioned series of experiments, differences in familiarity with the various animals was ruled out as a factor in the reporting times by asking subjects to imagine the (comparatively unfamiliar) fly to be much larger in absolute size than the (comparatively familiar) rabbit. Details about the rabbit still took longer to report on. Another potential problem was to rule out associations (like “rabbit” evokes “ears” and “hopping”) as a factor in response times. This was done by comparing reporting times from subjects who were asked to base their reports on images with subjects asked not to base their reports on images. In the latter case,

stronger associations decreased response times, while in the former case, it was the greater size of the image that decreased response times.

Dogmas in Philosophy

These experimental findings seem to squarely contradict the philosophical claims about imagery considered earlier in the chapter. Recall, for example, Ryle's claim that "Imaging is not having shadowy pictures before some shadow-organ called 'the mind's eye,'" and Warnock's parallel claim that "the image cannot be treated as an independent object which can be examined on its own".

Why has philosophy been so influenced by such theories which so run so counter to common experience? The problem here would seem to be that of putting philosophical theories ahead of experience itself. Experience often actually presents us with vivid internal images of a pictorial nature, yet we persist in trying to systematically explain away *actual* experiences on the basis of *debatable* philosophies. A more fruitful role for philosophy, it might well seem, would be to interpret common experience and common sense, rather than to flatly deny it.

Brann's position here is as follows:

The most persuasive positive argument for mental images as objects is . . . [that] whenever one thinks one is seeing something there must be something one is seeing. It might be an object directly, or it might be a mental picture [This] point is so plausible that it is deniable only at the peril of becoming arbitrary. One should concede that the question whether mental images are entities of some sort is not resolvable by logical or linguistic analysis, and believe what makes sense of experience. [p.418]

What has led philosophy into this conflict with our common experience of images are the *a priori* convictions which were noted at the outset of this discussion. Phenomenologists have been preoccupied with a rationalist search for the essential structure of experience, including its intentional structure (the fact that it is object-directed). Ever since Brentano, they have been convinced that when subjects perceive and imagine, what they are aware of are objects themselves, not inner pictures interposed between the subject and object (for example, when I am aware of Jim, I'm aware of Jim, himself, not an image of him).

Analytical philosophers have rejected this introspective search for essences in favor of a more publicly verifiable method (linguistic analysis) which respects the actual empirical diversity in our ways of speaking about experience. Nonetheless, their convictions about

philosophy led to similar conclusions about images as found in phenomenology: they were led to reject both introspective reports about private inner pictures, as well claims that such inner pictures, and the faculty which produces them, are essentially what “imagining” refers to.

These *a priori* convictions are dogmatic in that they don’t admit of proof and are held steadfastly in the face of arguments and evidence to the contrary. The claim that consciousness is necessarily object-directed, and that we’re aware of objects themselves (not images interposed between us and objects), is a philosophical assumption, and one which does not seem to fit either common experience or experimental evidence about images. Again, denial of a faculty of imaging on the grounds that we must avoid the linguistic confusion that there is an essential activity underlying everything we call “imagining,” is another bias which runs counter to common experience as well as to experimental evidence for the existence of inner pictures and for the existence of extraordinary abilities for concrete imagery in intellectually impaired people. The bias against introspective reports of inner events would also appear to be dogmatic given the utility of this method in psychology from the last century right up into recent experimental work (including the experiments just mentioned above).

The common analytical view that what is private is unspeakable is a similar dogma. It tends toward a radical linguistic idealism, where to be is to be spoken of, and where whatever cannot be spoken of is relegated to an ineffable subjectivity. Brann replies (p.195) that our shared seeing of the inner and outer worlds aren’t so different as this view seems to suppose. Corrigibility or correctibility is a matter of degree, after all. The bulk of our information about the outer world will always be based on hearsay, supposition and other forms of noncorrigible information. Moreover, “people probe one another’s introspective reports and encourage self-correction all the time.” In both cases, we “make an effort in good faith to see what the other sees.” Also, though the inner world is “private” in the sense that we can’t directly access each other’s minds, it is hardly “private” in the sense that all attempts to share our inner feelings, visions and aspirations are doomed to futility. Modern painters, writers, actors, etc. are especially good at doing so.

Treating what’s private as ineffable and unspeakable is associated with the view that inner images and feeling are irrelevant to the true behavioristic meanings of terms like “color,” “pain,” “love,” etc. The motive for this view is that language is a social practice which is taught and corrected according to public rules, while images, sensations and feelings are private and incorrigible (there are no ways of publicly verifying what we say about them). However, this rules out meaningful discussion of inner events based on a highly debatable theory of meaning. There are other competing theories of meaning which don’t reduce images into idle ornaments in language and meaning. Behavior could be treated as a mere symptom of “pain,” etc., rather than as its true meaning. Or mental terms could be defined in terms of private entities associated with

public behavior, thus making *both* part of such definitions. This allows “pain” to be part of public language, but also to refer to private events for its meaning. It also does justice to the asymmetry in how we apply the word “pain” to others and ourselves (we don’t look at our own behavior to see if we’re in pain, as we do with others).

Despite the great values of linguistic analysis, psychological studies of thought and imagination have arguably been set back many decades by certain radical views within analytical philosophy – like Ryle’s attempts to wholly expunge the “ghost in the machine” in favor of strictly behavioristic analyses of the mind, or by injunctions like Wittgenstein’s to simply refrain from talking about internal events. The same can be said of phenomenology’s rejection of images because of their incompatibility with its assumptions about the structure of consciousness.

Dogmas in Cognitive Science

Experimental evidence for mental images like that cited above has also challenged the newly emerging cognitive sciences. It is into this arena that the debate about images has now shifted. With the emergence of the cognitive sciences in recent years the debate on images has “turned a deaf ear to Wittgenstein’s injunctions to refrain from talking about internal objects and has become embroiled in a somewhat paradoxical hand-to-hand combat with these supposed ghosts.”¹⁴

The existence of conscious images isn’t readily compatible with the cognitive sciences’ approach to cognition purely in the information processing terms that is used with computers. When faced with our introspective awareness of images in our minds, as well as with experimental evidence of our ability to rotate and scan images in our mind, cognitive theorists resort typically to either *epiphenomenalism*, which denies any causal role for mental phenomena, or to *propositionalism*, which reduces pictorial images to the symbolic codes and operations familiar to computer programmers. Let’s scrutinize both of these views.

To start with, *epiphenomenalism* takes different forms, but all reject a causal role for the mind. They thus reject the usual belief that our mind and body interact (an example of this interaction is, for example, when a pin prick causes us to feel pain, or when a feeling of fear causes us to physically faint). Causation is strictly one way to epiphenomenalists: from body to mind. They readily admit that it sounds paradoxical to say that our conscious dreams, aspirations, loves (and everything that make our life worth living) are like shadows which follow us around but don’t affect what we do in any way (Campbell 1970:111). Yet epiphenomenalism allows for the obvious fact that there are things that we can’t do *while* we lack consciousness

(e.g., driving a car). Its point is that what actually *causes* such actions are special sorts of brain activity which produce not only voluntary action, but also the shadowy emanations which we experience as conscious feelings and thoughts (Shaeffer 1968:68ff.).

Epiphenomenalism in its dualistic form saddles itself with dualism's fundamental problems. How can such radically different entities as bodies and minds, only one of which is spatial, have *any* causal relationships in *any* direction whatsoever? Also, how can we avoid violating the conservation of mass-energy, a central principle in modern physical theory, when dualistic causality presumably involves energy transfers between the physical and mental realms (if it doesn't involve this, then how is this causation)? This obscurity is unfortunate, for dualism's denial that minds are in space saddles it with the need to come up with a coherent account of causation in order to establish links between particular minds and bodies. If these causal relations are obscure, then it remains mysterious why, for example, my perceptual field is associated with one pair of eyes rather than another.

Monistic theories can avoid problems with causal relationships between mind and body, because the two are no longer different substances. One form of monism is materialism, which traditionally reduces minds to brains. But here epiphenomenalism treats minds as forms of matter-energy in brains that don't in any way affect other forms of energy-matter surrounding it. This is strange when viewed from the perspective of physics alone. But it is doubly strange when viewed from the perspective of biological evolution, for one of the most remarkable features of biological evolution is the ingenious use it makes of all the tools it's supplied with.

Epiphenomenalism can also be seen in theories such as neutral monism or dual aspect theory, which treat minds and bodies as mere aspects or products of a single, underlying substance which is neither mind nor body. Here minds and bodies are in effect both epiphenomena of this mysterious underlying substance. However, the inner causality of this underlying substance, and its means of giving rise to minds and bodies, are obscure. So these theories seem to just shift dualism's causality problems to this underlying substance.

So epiphenomenalism seems problematic. But to further support this conclusion, I should briefly offer an alternative view. For my own part, I view mental images as energy fields arising from the brain's electrochemical activity. The mind's eye (which views these images) is focal attention scanning these images by bringing the resources of thought and memory to bear on their features to make them fully conscious. We're aware of images as being spread out in space because they are fields spread out in brains. This seems plausible, for images seem to arise from discrete neurons in field-like ways as fast-changing, continuous wholes spread across space.

This resembles Feigl's claim that mental and neural terms refer to the same underlying reality in brains (1958:452ff.,464ff.). They refer not to perceptions of grey matter, but to what reflects light into our eyes to cause perceptions of grey matter. Mental images can thus exist in

our brains, hidden from others who just detect them in these indirect ways.

This avoids epiphenomenalism, for minds are the underlying nature of brain activities, so they have real causal powers. This materialism also has the virtue of avoiding reductionism. The mind isn't reduced to the perceivable entities of neuroscience. Instead it's identified with their hidden, underlying nature. While it's unintelligible to reduce minds (which aren't perceivable in brains) to perceivable brain events, this criticism doesn't work when minds are the underlying nature of brain events, for we can't know what brains are like behind what we perceive of them.

Let us now scrutinize *propositionalism*, which is (as noted above) another common assumption in cognitive science, along with epiphenomenalism. Propositionalism reduces pictorial images to the symbolic codes and operations familiar to computer programmers. It tends toward a functionalist interpretation of cognition in terms of the flow charts of information processing. The propositions involved are similar to those used by planetary probes when they send back "pictures" in the form of encoded telemetry. Propositionalism also resembles another influential view of images called "computationalism". It treats our minds as computers, and our images as computations within our minds.

Dennett (1981), for example, claims that there is "no room in the subpersonal [functionalist] explanation for images." Much like his behaviorist predecessors, Dennett has no sympathy for talk of private, conscious states. Again, he instead seeks to reduce images to the giving of descriptions. So this lends itself to propositionalist account of these images, as just described above.

We have already seen signs of propositionalism not just in cognitive science's proclivity for treating cognition purely in terms of symbolic operations (programs), but also to a degree in Sartre's claims about the impoverishment of images, Wittgenstein's claims about descriptions substituting for images (e.g., PI 367,396,p.193), Warnock's claims about having images being species of thinking rather than pictures, and Ryle's claims that imagery is a mere knack whose fidelity is grossly exaggerated, and which is evidenced only by successful description.

Let us, therefore, look more closely at what propositionalism is saying and how credible it is. Two codes can be formulated for describing cognitive representations: the "imagistic" and the "propositional." The former pertains to images, which depict entities pictorially, while the latter pertains to propositions, which describe entities verbally or symbolically. These two codes or representational systems embody two different kinds of logics: the "pictorial logic" of images and the "verbal logic" of propositions.¹⁵

Brann says (pp.252ff.,396ff.) that these logics differ in the following ways. (1) Pictures differ from propositions in lacking assertions of their truth: pictures aren't true or false simply in virtue of being presented to us: they must further be asserted before they can have a truth value. (2) Pictures embody built-in perspectives, while the straight propositions of logic are asserted

without respect to a perspective or source. (3) While propositions must conform to explicit syntactical rules, pictures needn't conform to such formal rules (even laws of perspective are optional). The syntactical rules that govern well-formedness in picture-making are subjective conventions: whatever can be produced and found acceptable is allowed. (4) While propositions contain discrete subjects and predicates, the surfaces of pictures are continuous, and are thus far less able to depict unequivocal elements. Relationships in pictures are ambiguous (e.g., should the cat sitting on the mat be in front of it, above it, or within it?), as are the numbers and identities of subjects (oftentimes even in non-abstract art). (5) Propositions contain abstract, general terms, while pictures are concrete and particular. Schematic pictures can only partly mimic the way words are silent about details (e.g., a stick figure of a person still shows legs, and so presumably it isn't wearing a skirt). (6) Propositions are "digital" while pictures are "analog." This follows from what was said above about language being discrete and pictures being spread out over continuous spatial mediums. (7) The propositional calculus differs from the pictorial calculus. Conjunction doesn't affect propositions, but when pictures are conjoined, interpretation of their parts may change in light of the new whole. (8) Pictorial logic lacks negation and contradiction. Whatever a picture shows is positive, it can't picture a negation.¹⁶ Nothing can be done to render a picture self-contradictory (Escher prints often look physically impossible, but they aren't self-contradictory).

One psychological implication of these different logics is that images are quite often static, while speech runs on dynamically.¹⁷ Another psychological implication of these different logics is that images tend to be processed holistically over their whole area, while speech is processed sequentially, unit by unit. That is, images are processed in a spatial, parallel fashion, while speech is processed in a temporal, serial fashion. This means that the former is less fooled by gappy, altered information (compare how the ease with which we can recognize a partial face, compared to the difficulty we have in understanding a partial sentence). Thus, the former is more useful in novel, creative contexts. There's even evidence that the hemispheres of the brain specialize in one or the other.¹⁸

In brief, then, the imagistic code pertains to images and thus depicts entities pictorially in a concrete, spatial, analog fashion; while the propositional code pertains to propositions and thus describes entities symbolically in an abstract, verbal, digital manner. Propositionalism can now be defined as the claim that all cognitive representations can be rendered by means of the propositional code. The alternatives are a purely imagistic code or (more plausibly) a dual code.

Experiments like those described above are typically designed to test between these competing codes, and the conclusion here seems to be (as we have already seen) that tasks like rotating and scanning images are accomplished imagistically rather than verbally or propositionally. There seems to be fairly clear experimental findings, like those mentioned above, which

indicate that pictorial images are actually used in mental operations. But there aren't many clear experimental findings in favor of propositionalism.¹⁹

The fact that what we know affects what we see is often seen as a problem for imagistic codification of cognition, but wrongly so. For example, when we interpret a photo shown to us as "an autumn picnic interrupted by a foxhunt," this interpretation can help us to later recall some of the photo's visual layout and details. It is no doubt true that verbal knowledge does inform imagery in this way. However, this shouldn't be seen as conflicting with the claim that what we recall is partly a pictorial image, especially when we keep all the other experimental evidence discussed above in mind. All this need show is that our memory is coded in a *hybrid* verbal-pictorial form. The fact that what we know affects what we see doesn't, therefore, argue for propositionalism and against imagism: it instead indicates the hybrid thesis that we used both codes.

From what has been said above, it should be evident that for virtually any experience of an image a competing imagistic and propositionalist account can be found. Any such experience can be treated as a picture in the mind. And for any such picture, an algebraic formulation can be found that will fix it point-by-point within Cartesian axes. The basic points above are twofold. Firstly, the imagistic approach accounts for the experimental findings in a much more straightforward manner than the propositionalist approach. Tasks like rotating and scanning images do seem to be accomplished imagistically rather than verbally or propositionally. Also, we've seen that the imagistic approach is much closer to our common experience about imagery. Our experiences with imagery seem to consist of seeing pictures in our minds, rather than experiencing symbolic or propositional codes. But secondly, and equally importantly, these pictures require interpretations which do lend themselves to verbal, propositional accounts.

In the end, then, it seems most plausible to say that we approach cognitive tasks *both* imagistically and verbally, rather than purely in terms of one or the other. Words and visions aren't always readily translatable. We often know more than we can say: think of how difficult it is to put into words how we tell male from female facial shapes. Some tasks (especially solving spatial problems) just seem intrinsically better suited to imagery than words, while others (like arguing) seem better suited to words rather than images. It is a matter of which works best. As Brann notes,

When first asked how many windows there are in their house, most people will take a mental walk and count as they conjure up the facade imagistically. When asked the same question later in the day they will have the answer handy propositionally, in terms of digits. Before long, however, the number is apt to be forgotten. Evidently picture-memory is, in some cases, not only more long-term than verbal memory but better for the purpose of active recall. [p.257]

THE SYNERGY OF IMAGES AND THOUGHT

Images Mediate Thought and Perception

So rather than there being a lopsided relationship, whereby images are reduced to thought, or *vice versa*, there would seem instead to be a genuine synergy between thought and images, wherein both help to realize the potentials of the other. Concerning the role of thought in producing images, it seems safe to say that in our more alert frames of mind (as opposed to dream and reverie) image production is at the service of thought. In this spirit, Brann says that imagination, viewed as the image-forming faculty, gets its meaning, intentions and direction from thought.

imagination is always somehow under the aegis of thought. The more deliberate images of the imagination can be considered as a kind of incarnation of thought-intentions . . . the ultimate meaning of an image, if it has one, is a thought. [p.202-3]

Looking in the opposite direction, what is the role of images in thought? Obviously, they're useful for spatial thinking, as in geometry, architecture, traffic control, battle planning, chess playing, etc. A purely verbal approach here would be cumbersome, indeed. It is in this context, that a photo is "worth a thousand words" in the speed and clarity with which it informs us. Also, images can even bring out unnoticed details and hidden designs here, which purely linguistic formulations cannot hope to capture.²⁰

Images are often quite useful as illustrations in verbal thinking, due to the comparative abstraction of the latter relative to the former. Here pictures, charts, tables, maps and diagrams can sometimes show in a glance what it takes many cumbersome word strings to say (consider the use of truth tables, Venn diagrams, the square of oppositions, etc. in logic). It's thus not surprising that visual illustrations have been shown to aid understanding of texts.²¹

Images are also useful in memory. Here images typically persist better than language. Recall Brann's point above that we can often remember images of windows in our home better than a mere digit representing the number of these windows. Again, we may have difficulty recalling passages from *Alice in Wonderland*, but who can forget Sir John Tenniel's memorable illustrations of these texts? Memory wizards make use of this fact in remembering large numbers

of names (they associate the people's names via, e.g., items in a house).²² Visual memory can also act as a "mental photo album" to provide information for thought in the course of problem solving. For example, we may recollect the facial expressions and gestures of someone we talked to yesterday in order to decide his real meaning and intent during this conversation.

Although images may sometimes play an ancillary role in creativity by serving to clarify and illustrate thought, or by serving as a "mental scratch pad," it's often claimed that they're also central to the creative process. There are many famous examples from history, including Kekul's discovery of the benzene ring in a dream in the form of a snake biting its tail, to Mozart's claim about being able to compose and contemplate his compositions wholly within his mind ("I can survey it, like a fine picture or beautiful statue, at a glance"), or Einstein's claim that his creative acts were imagistic rather than verbal ("words . . . do not seem to play any role in the mechanism of thought. The psychical entities which seem to serve as elements in thought are certain signs and more or less clear images"). However, rather than images themselves being creative here, it might simply be that they're being used in creative ways by thought (especially in fluid intuition, which is described below). Also, it will become clear that the most creative uses of images require that we compliment imagistic thought with the more disciplined forms of thinking that come with abstract, rational thought.

So there seems to be a genuine synergy of thought and images. It is the course of our thought that seems to give images meaning and intention in our more alert and deliberate frames of mind. On the other hand, images act upon thought in this role, bestowing clarity and concreteness to thought, which is often obscure due to its comparative abstraction. Images clarify and illustrate thought by giving it a concrete, spatial nature. Images "render non-sensuous thought into visible figures," by "spatializing its patterns" and "diagramming its conceptions."²³

Images thus represent the world to our minds even in its absence, and they do so by spreading out events in a spatial, perceptible form – and also in a clarified form, purified of the crowded distractions of perception. It is by thus representing the world, "clarified, within its own space," that images aid thought in penetrating, grasping and manipulating the world. Here, in this secluded inner space, thought employs images to ruminate on experience, formulate theories, test possibilities, assess feelings, rehearse actions.²⁴ Furthermore, thought also projects these inner visions back upon experience. Thus, Gauguin beckoned his fellow painters to dream in front of their canvasses and their subject matter. We do the same thing when we visit our childhood home and envision ourselves with our childhood friends still playing in the creek. Images are thus employed in remembering, interpreting, dreaming about, and fantasizing about our world. Both Warnock and Brann make this point eloquently.

The view outlined above, that there is a genuine *synergy between images and thought*, aligns with a traditional definition of imagination, which identifies imagination as *the image-*

producing faculty intermediate between the faculties of perception and thought. This intermediate function is traditionally described in different terms, but it generally consists of the sort of functions just noted above, e.g., producing images within the mind to represent the perceptual world in its absence, in order to aid thought in grasping and manipulating the world.

There are two issues to consider here. This identification of the image-creating faculty as the faculty intermediate between perception and thought is a plausible theory of the role of *imaging* in the cognitive hierarchy. It's thus a plausible theory of the subject we're currently investigating, namely, the synergy of images, thought and perception. However, it remains to be seen whether this faculty is really all that's meant by "*imagination*." So we'll first look at examples of this theory that the image-creating faculty is intermediate between perception and thought. This will further flesh out the claim of this section that there is a genuine synergy between images, perception and thought. But afterwards we will critically examine whether we should follow this theory so far as to actually identify the image-making faculty as imagination.

Aristotle

Perhaps the earliest example of the theory that imagination is the image-creating faculty intermediate between perception and thought is to be found in Aristotle. A theory like this one can be found in book III of Aristotle's *On the Soul*, which deals with the interrelations of perception, thought and imagination.

Here Aristotle treats imagination as that which produces images: "imagination is that in virtue of which an image arises for us" (427b). He says that "imagination is different from either perceiving or discursive thinking" (427b). He distinguishes imagination from thought by noting, for example, that while we are free to imagine whatever we wish, we are constrained in thought by considerations of truth and falsity (427b). He defines a sense (e.g., vision) as "what has the power of receiving into itself the sensible forms of things without the matter" (424a). He then distinguishes imagination from the senses by saying, for example, that imagination's "visions appear to us even when our eyes are shut," and that while "sensations are always true, imaginations are for the most part false" (428a). Thus the images of imagination are like those of the senses in giving the form of objects without their actual matter, but they are free from the constraints of the senses as to the veracity of these images and the actual presence of objects these images represent.

Having distinguished thought and perception from imagination, and having identified the latter as "that in virtue of which an image arises for us," Aristotle then says that it is this image

production that allows us to think about things in the absence of sensations. In this way, imagination provides images for thought which, as noted above, abstract forms from the matter of the actual objects, just as the sense do, but further abstract from those constraints on the senses as to the veracity of and presence of what they represent. “To the thinking soul images serve as if they were contents of perception That is why the soul never thinks without an image” (431a, cf. 431b, 432a).

As we’ll see, another example of this theory that imagination is the image-creating faculty intermediate between perception and thought can be found in Kant’s account of the productive imagination (whose image-producing schemas produce coherence in perception and thereby provide materials for understanding and thought), as well as the reproductive imagination (which can conjure up images in the absence of perception in accordance with laws of association).

Brann

But perhaps the most explicit and thorough articulation of this view that the imagination is the image-forming faculty intermediate between perception and thought is to be found in Brann’s book, *The World of the Imagination*. It is in fact the central theme of this massive work on the imagination, which examines imagination in all its facets: philosophical and historical (like Warnock), but also psychological, logical, literary, theological and ideological.

In this tradition, Brann makes a point of defining the imagination as *the faculty that “forms and sees” images*. It is “a distinct psychic power, analogously described as a mind’s eye, that ‘sees’ representations immanent in an inner, psychic space . . . it is . . . a dual faculty that simultaneously forms and sees picture-like resemblances.” (pp.193f., cf. pp.34,196f.).

Just as she distinguishes images from thought (for reasons like those given above), so she *distinguishes imagination from thought*. Imagination is not creative like thought: it is just a “conduit of visions” which is “essentially receptive rather than creative” (p.790). Imagination is a tool of thought, creative only in conjunction with thought. It is “subject and ancillary to thought . . . always under the aegis of thought” (pp.200-1). This emphasizes the genuinely independent nature of both thought and images: neither can be assimilated to the other.

Again Brann views imagination as intermediate between perception and thought: “the imagination is the soul’s one and only representational faculty . . . [which] functions as the interface of world and mind, and [as] a pivot between sense and intellect” (p.6). Once again, the reason for this intermediary role is imagination’s abilities to represent the world through image making.

Re-presentation is the mediating mode of the imagination, and of the imagination alone. It is only as re-presenting things to thought that images play the role of go-between in cognition; by the same token, there is no good reason for the psychic extremes, perception and thinking, to function representationally. [p.203]²⁵

Very much *unlike* Warnock and most other contemporary philosophers, Brann depicts imagination as the “power of internal vision,” as an “inner visual space.” As an illustration, she quotes a passage in which Augustine speaks of his inner visions of the vast ocean, mountains, rivers and stars:

I saw [them] inwardly in my memory, yea, with such vast spaces between them as if I verily saw them abroad. Yet did I not swallow them into me by seeing, when as with my eyes I beheld them. Nor are the things themselves now within me, but the images of them only.

Here, she says, is the most “vivid and precise account of the image-memory: its enormousness; its spatiality, its presence-in-absence” (p.53).

In this capacity, imagination again contrasts clearly with thought:

the imagination doubles the appearances by representing them internally and informing them externally: through it the soul’s empire becomes *extensive*, spread in space. Thought, on the other hand, penetrates the multifarious spread to find the simplicities supporting the worldly facade, be they the laws behind the natural scenery or the self-behind the human face. Accordingly, the mind’s dominion in *intensive*, collected, concentrated, a-spatial – whatever is antithetical to the latitude of the imagination. [p.784]

In the conclusion to her work, Brann expands upon the intermediate function of imagination as follows:

The facade of worldly appearances comes to us through sense perception. By thought these multifarious surfaces are penetrated and their depths are brought up. The imagination, an intermediate third, can neither transduce the external stimuli (for that is the function of the perceptual apparatus), nor can it expose their hidden core (for that is the office of our faculties of thought). What then does it do? . . . the imagination helps to construe the world by means of corrections and transparencies. [p.773]

That is, imagination isn’t just a matter of re-envisioning images from perception and

memory, or of summoning up fantasy scenes: it is also a matter of projecting upon the world we see our interior visions (p.774). This echoes Wittgenstein's view of imagination in perception: "It is as if an image came into contact, and for a time remained in contact, with the visual impression" (PI p.161).²⁶ These interior visions, or transparencies, which we project upon the world are exemplified by image-laden longing for objects of love present before us, absorbed play, nostalgia (as in visiting a childhood home), metaphorical double-vision (which visualizes two different things together through their resemblance), and daydreams, which are the purest appearances of transparencies (pp.776-80). Such transparencies allow us to see imaginatively, but they also can allow us to correct or revise our world: they are both "corrections and transparencies." She notes that this ability to "remake our world imaginatively," is as Baudelaire says, our "most specifically human mission" (p.774).

Here Brann is noting the role of imaging in creativity. This resembles the romantic view of imagination (in the broad sense of poetic creativity). With license from Kant, romantics turned away from the older idea that the mind passively reflects the external world, toward the view that the mind actively interprets the world in light of their own images and feelings. For example, Hazlitt said in "On Poetry in General" (1818):

Neither a mere description of natural objects, nor a mere delineation of natural feelings, however distinct or forcible, constitutes the ultimate end and aim of poetry The light of poetry is not only a direct but also a reflected light, that while it shews us the object, throws a sparkling radiance on all around it.

Similarly, Coleridge said in "On Poesy or Art" in the same year as the above essay:

Now so to place these images [of nature] totalized, and fitted to the limits of the human mind, as to elicit from, and to superinduce upon, the forms themselves the moral reflections to which they approximate, to make the external internal, the internal external, to make nature thought, and thought nature, – this is the mystery of genius in the Fine Arts.

As we'll see below, Wordsworth also often seemed to see images as poised ambiguously between the outer and inner world in this way: as presenting objects in the world, but as feeling-laden objects of the inner world, too.

Brann's view of imagination means that thought and imagination, though different, are complimentary in function.

The imagination provides a cognitive clearing, a middle ground between the source of perception, the external environment, and the agency of reflection, the

innermost intellect. In this space, freed from the burden of impenetrable matter and the distraction of infinite detail, objects gain perspicuity. Here experience is consolidated out of the accumulation of sensory memories. Her possibilities are tested by free play with variable visualizations. Here human affairs can be rehearsed and feelings assayed, away from the pressures of immediate reality. [p.786]

Her lyrical conclusions on imagination end as follows:

From early to late in the course of human inquiry, the most promising philosophical beginning has been a sense of amazement that our world appears to us as an appearance, as a visible facade that both hides and reveals depths. It is by reason of this fact of life that the dreaming, fantasizing, remembering imagination, the imagination in all its modes, can cooperate in the cognitive venture and take part in it twice over: First it represents the appearances, clarified, within its own space; it absorbs them, beautified, into its own visions; it projects them back as rectifying transparencies upon the world. And then it proceeds to captivate thought, inciting it to pierce these imaginative panoramas and to transcend them in search of their unseen core. [p.786]

Again, this doesn't attribute a creative role to imagination, itself.

Although I contend that the imagination is central both in the sense of being a mediating power in cognition and in the sense of having a crucial function in life, I also think . . . that the imagination has this centrality by virtue of being subject and ancillary to thought . . . [p.200]

CRITIQUE OF WARNOCK'S ACCOUNT OF IMAGINATION

It has been argued so far that images and thought are engaged in a genuine *synergy*, rather than being reducible to each other. We've seen how this view aligns with the traditional view that the faculty of image-creation is intermediate between the faculties of perception and thought. We'll now look at Warnock's renowned theory of imagination because it seems in some ways to fit this tradition, but in others ways to oppose it. Altogether, three criticisms will be given of her account: (1) Her *assimilation of perceptual and inner images to thought* is hard to reconcile with both experimental evidence about images and her own apparent belief in the interaction of perceiving, imaging and thinking. (2) The "*common thread*" in typical uses of imagination is not the imaging she focuses upon, but creativity, which embraces imaging. (3) Her account of imagination overlooks its *historical variability*: to be fully understood it must be studied

historically. Let's precede these criticisms by looking further into her account of imagination.

Warnock's Account

Warnock's classic work, *Imagination* (1979), is an important attempt to discern a "*common thread*" running through prominent modern theories of imagination, or at a least a thread suggested by critical readings of these theories. She says that while it's futile to hope to find a common meaning within all cases of imagination,

we should not be so much beguiled by the "family resemblance" theory of meaning where words have a wide and varied use, that we neglect what common elements there may be. And in the case of imagination, my contention is that there is far more that is common to the concept in its various different contexts of use than has sometimes been allowed. [p.35, cf. pp.9-11,173]

She finds that the common thread running through influential theories of imagination in Hume, Kant, certain phenomenologists and analytical philosophers, and especially certain romantics, is that *imagination is the faculty of creating images which is present in activities ranging from ordinary perception to creative genius*. At the outset of her book she says,

The thread I have tried to trace thus leads from our commonplace perceptual experience to our most outlandish interpretations. And I have tried to show that the connexion between these two extremes can come only by way of the concept of imagination as *that which creates mental images*, perhaps the most ordinary sense of the word "imagination" that there is . . . the connexion between perception and recognizable flights of creative imagination is to be found in Coleridge, and still more clearly in Wordsworth. [p.10, cf. pp.182-3,193-6,199-202,207-8.]

Warnock begins her search for this common thread with an examination of theories about the role that imagination plays in *perception*. According to Hume, imagination is that which allows us to think about objects in their absence, but also that which gives coherence to our perception by linking together discrete impressions into unified objects and events (pp.19,26). The traditional view of imagination as the image-producing faculty *intermediate* between the faculties of perception and thought is especially clear in her account of Kant's view of the role of imagination in perception. She says that, for him, imagination

lies half-way between the purely intellectual part of our knowledge . . . and the purely sensory part, which . . . he regards as totally chaotic and unorganized Whereas a wholly sensory life would be without any regularity or organization, a purely intellectual life would be without any real content The two elements are not automatically joined to each other in their functions. They need a further element to join them. [p.30]

Neither understanding alone nor sensation alone can do the work of imagination. For neither can construct creatively, nor reproduce images to be . . . applied to present experience. Only imagination is in this sense creative; only it makes pictures of things. [p.31]

. . . both for Hume and Kant . . . it is the *representational* power of the imagination, its power, that is, actually to form images . . . which is supposed to contribute to our awareness of the world In Hume, and still more clearly in Kant, it is the imagination which has emerged as that which enables us to go beyond the bare data of sensation, and to bridge the gap between mere sensation and intelligible thought. [pp.33-4]

Warnock then turns from the perceptual to the *creative* imagination. She tries to show here how creative imagination has also been viewed as the faculty for creating images, just like perceptual imagination was seen to be above. She points out Hume's claims that the same faculty which we use to interpret immediate experience is, when extended, "what constitutes genius," for geniuses not only draw images from wider sources and produce "images which illuminate," but also "in proportion to the excellence of their images . . . [are] affected by deeper and more powerful feelings" (pp.35,40f.).

She sees in Kant a similar extension of the image-creating imagination into the realms of creative genius (pp.41-65²⁷). Kant's first critique says that ideas transcend experience, and thus tell us nothing about experience but only act as limits or ideals that regulate thought. But in the *Critique of Judgment* he allows that creative genius can nonetheless approach actual comprehension of ideas. The poet's symbolism seeks to penetrate appearances into ultimate reality itself: "transgressing the limits of experience, [he] attempts with the aid of imagination to body forth the rational ideas to sense, with a completeness of which nature affords no parallel." With imagination and understanding, genius gropes to express ideas about our experience that are of deep significance. But it can do so only indirectly and analogically by use of symbols, which relate ideas to experience just as image-producing schemata relate concepts to experience. These views were greatly amplified by German and English romantics (like Coleridge) after Kant's death.

So in Hume and Kant, when imagination's role in interpreting perceptual experience is suitably extended, it provides the basis for creative genius. But Warnock feels that it is in Coleridge and Wordsworth that these creative and interpretive roles of the image-creating faculty

come together best. Coleridge originally adhered to the passive, mechanical view of the mind often depicted by associationists like Hume and Hartley, but he then began groping instead toward the German romantic view of an active, creative mind which penetrates appearances to reveal its deepest ideas.²⁸ At this time he felt the need for a “symbolic language” to plumb ideas deep within him, and he bestowed images with profound feelings and a sense of universal significance.

Coleridge thus came to contrast “fancy” with true imagination. Fancy is the merely mechanical talent of imitation, mimicry and mimesis which associates and reassembles experience according to Humean associations (Kant called this the “reproductive imagination”). As such, it produces mere verse and simile, but not the union of deep feeling and profound thought in true poetry, which comes only from true imagination.²⁹

He divides imagination proper into a “primary” form (which plays a role in perception like that of Kant’s productive imagination) and a “secondary” form, “that synthetic and magical power . . . [that] reveals itself in the balance or reconciliation of opposite or discordant qualities.” Secondary imagination is inspired genius, the creative life force which organically assimilates and transforms experience into a whole new identity, rather than merely mechanically reassembling it like fancy. It pierces the superficial world of individual things to reveal universal ideas, and thereby unifies, intensifies and idealizes experience.³⁰

But Warnock feels that it’s in Wordsworth that the interpretive and creative roles of the image-creating faculty come together best of all. He speaks in the *Lyrical Ballads* (1802 preface) of the poet being “affected more than other men by absent things as if they were present” and having an uncommon ability of “conjuring up in himself passions.” This echoes the Humean and Kantian views of imagination as the image-creating faculty. In this same spirit Wordsworth notes in “Tintern Abbey” the creative role of imagination in perception,

. . . of all the mighty world
Of eye and ear, both what they half-create
And what perceive.

Wordsworth also notes in this poem the role of images in creating and reflecting. Through images he conjures up past scenes which lead him to a sense of understanding and restoration.³¹ In “The Prelude,” however, he extends this view of imagination as that which perceives the world and conjures up past scenes, into a grander vision of it as a mystical form of perception which allows us to directly grasp the significance of the universe.³² Imagination in both guises, however, involves reproducing, creating and interpreting our images.³³

Wordsworth often seemed to see images as paradoxically and ambiguously poised

between the outer and inner world: as presenting objects in the world, but as feeling-laden objects of the inner world, too. Thus, in “The Pedlar” he speaks of how the impressions of youth lay in the mind and haunt his vision in the future.

. . . deep feelings had impressed
Great objects on his mind, with portraiture
And colour so distinct that on his mind
They lay like substances, and almost seemed
To haunt the bodily sense. He had received
A precious gift, for as he grew in years
With these impressions would he still compare
All his ideal stores, his shapes and forms,
And being still unsatisfied with aught
Of dimmer character, he thence attained
An active power to fasten images
Upon his brain, and on their pictured lines
Intensely brooded, even till they acquired
The liveliness of dreams . . .

This reference to the dual role of imagination is another clear statement of the *intermediate* function of imagination between self and world, between perception and reflection. Coleridge also voices this sense of the dual role of imagination in both the presence and absence of objects: “Thought and Reality, two distinct corresponding sounds, of which no man can say which is the Voice and which the Echo.” This echoes Kant and Hume in several ways. They too saw imagination as that which allows us to interpret what is before us and to envision things in their absence. They also felt that this representative function of imagination was tied to emotion, so that it was a means of representing significance to ourselves. Finally, they also felt that genius is this same faculty of image creation raised to a higher power. This is the *common thread*, then, between imagination in interpreting experience and imagination in creative genius (pp.103,128-31).

Warnock turns from the image-creating faculty’s role in interpreting perception and creative genius, to an examination of *mental images*, whose production is the most basic function of imagination in its “most ordinary sense” (pp.131-195). Does the common thread she has found in romantic and pre-romantic views of imagination withstand modern scrutiny of the nature of mental images (pp.129-31)? This question, and the answers she gives to it, shows her theory of imagination to be a re-interpretation or modification of romantic and pre-romantic views in light of modern philosophies in the phenomenological and analytical vein.

Phenomenologists have given theories of perception which don’t involve imagination at

all: perception is seen as not requiring the imaginative synthesis Hume, Kant and Coleridge emphasized, for from the outset it already goes beyond itself to contain objects (pp.141,148). Moreover, these phenomenologists reject images as inner pictures which we examine. Instead, Sartre views images as a way of thinking analogically about objects (pp.148,152,155-6).

She feels, however, that these criticisms about imagination and images can be reconciled with Kant's views. Sartre's talk of the "co-present as an essential condition of the actually perceived" is compatible with Kant's view of the role of imagination in perception, which doesn't need to refer to processes of synthesis or to pictorial images (but only to schemas or rules for producing images). So there's no reason to *reject* Kant's view that imagination embraces the forming of mental images, interpreting of perception and creation of art (pp.182-3).

Furthermore, Wittgenstein suggests positive reasons to *accept* this "wide interpretation of imagination" (pp.183-95). Warnock tries to show how *imagination as image-formation is related to imagination as perceiving, interpreting and creating via Wittgenstein's notion of "aspect seeing"* (see pp.183,193ff.; more will be said on this below). Warnock concludes from this that "we cannot separate the interpretative function of the imagination from its image-forming function" (p.194f.), which is just what Kant and Wordsworth claimed. Here she says,

Imagination is our means of interpreting the world, and it is also our means of forming images in the mind. The images themselves are not separate from our interpretations of the world; they are our way of thinking of the objects in the world. We see the forms in our minds's eye and we see these very forms in the world. We could not do one of these things if we could not do the other. The two abilities are joined in our ability to understand that the forms have a certain meaning, that they are always significant of other things beyond themselves. We recognize a form as a form of something, as Wittgenstein said, by its relations with other things. It seems to me both plausible and convenient to give the name "imagination" to what allows us to go beyond the barely sensory into the intellectual or thought-imbued territory of perception.

Warnock summarizes her view as follows:

. . . there is a power in the human mind which is at work in our everyday perception of the world, and is also at work in our thoughts about what is absent; which enables us to see the world, whether present or absent as significant, and also to present this vision to others, for them to share or reject. And this power, though it gives us "thought-imbued" perception (it "keeps the thought alive in the perception"), is not only intellectual. Its impetus comes from the emotions as much as from the reason, from the heart as much as from the head. [p.196]

This imagination detaches us from the actual and envisions the non-actual; it goes beyond the actually present and thinks of things as signifying something else (197,201). In the end, then, her view of imagination aligns with those of Sartre and the romantics, with their emphases on the idealizing and emotional aspects of imagination which allow us to “see into the life of things” and imaginatively feel and value the world (pp.201-9).

Drawing all this together, we can say that Warnock’s theory of imagination is a modification of romantic and pre-romantic theories in light of her own views of more modern (phenomenological and analytical) theories. She sees imagination as the faculty of creating images which is present in activities ranging from ordinary perception to creative genius. These interpretive and creative roles are noted in, e.g., Hume, Kant, Coleridge and Wordsworth, who feel that this faculty of image-creation interprets what is before us, envisions things in their absence, maintains affinities with emotions, and (when these functions are extended to a higher power) constitutes creative genius. These views are compatible with phenomenology, if we don’t talk of processes of perceptual synthesis or of images as inner pictures. Moreover, these views are reinforced by Wittgenstein’s notion of aspect-seeing, which blends the interpretive, creative and image-forming functions of imagination. In this way, images are not inner pictures, but our way of thinking about the world; they allow us to go beyond the actual to the past, future and ideal.

These views fit in several ways into the traditional view that imagination is the faculty of image-creation intermediate between the faculties of perception and thought. To begin with, her overall thesis – that imagination is the faculty of creating images which is present in activities ranging from ordinary perception to creative genius – naturally lends itself to this traditional view. Also, it seems to be in just this light that she finds Hume’s and Kant’s view of imagination so noteworthy for enabling us to “go beyond the bare data of sensation, and to bridge the gap between mere sensation and intelligible thought” (p.34,195). Further, it also seems to be in this same light that she finds the “doubly-functioning imagination” of Wordsworth and the others so noteworthy for enabling us to envisage things in both their inner and outer guises, in both their presence and absence, and for enabling us to thereby understand and value the world (pp.115,128-9).

How Do Perceiving, Imaging and Thinking Interact?

The account of Warnock above suggests that she believes in an intermediate role for imaging between thought and perception, with interactions between each. My first criticism of her account is that its *assimilation of images to thought* is hard to reconcile not only with experim-

ental evidence about images, but also with her own apparent belief in the interaction of thinking, imaging and perceiving. This divides into a criticism based on *perceptual* images and a criticism based on *inner* images. That is, her assimilation of *perceptual* images to thought not only conflicts with experimental evidence, but also blurs perception, imaging and thought, thus threatening their coherent use together. Similarly, her assimilation of *inner* images to thought not only conflicts with experimental evidence, but also threatens the role of these images as aids to thought, for it doesn't adequately explain how concrete facts are derivable from these images.

Let's start with the former criticism – Warnock's assimilation of *perceptual* images to thought. This is part of her attempt to show the pervasiveness of imagination in our mental lives. After considering phenomenological views, she concludes that "all our perceptions are to some extent thought-imbued" (p.151). She goes on to find considerable support in Wittgenstein for assimilating thought and perception (pp.183-195), but eventually goes beyond him here. He distinguished them on the basis of volition (*PI*,p.213). For example, we may voluntarily be able to see the drawing of an ambiguous duck-rabbit figure as a rabbit and then a duck, but we can't voluntarily see green leaves as red. Warnock questions this distinction between imagination and perception, for imagination isn't always voluntary (after all, phenomena like hallucinations and perception of ambiguous figures are often spontaneous and outside of conscious control).

Though there's little to object to in such points individually, one is left at the end of this admittedly brilliant chapter wondering what, if any, distinction *does* exist between imagination and perception. This is especially so given her discussion of Wittgenstein's views on ambiguous figures (like the drawing of a box which shifts its orientation before our eyes). She notes that Wittgenstein comments here, "Do I really see something different each time, or do I only interpret what I see in a different way? I am inclined to say the former." In this same spirit, she notes that he describes what he sees in such contexts as an "amalgam" of thought and perception, rather than as a perception interpreted by thought (*PI*,p.197).

Warnock argues along the same lines with her typical clarity and effectiveness:

The question now arises whether we can separate *what we see* from our interpretation of it. One feels that it ought to be possible somehow to describe the actual visual experience . . . first, and then add on an account of the interpretation as an extra. But in fact it is impossible to do this . . . one might attempt an analysis of the picture into its component lines and angles before saying how it was that one interpreted it But it may be extremely difficult to describe the lines and angles once one has seen the drawing in a particular way. Analogously, if one has interpreted a sound as a voice calling one's name, one may not thereafter be able to describe it as pure sound, nor reproduce it as such. [p.184, cf. p.151]

Warnock seems to agree here that we “see something different each time,” rather than just interpreting the same thing in different ways. That is, she seems to suggest that we’re aware of different “amalgams” of thought and perception, rather than a sensory impression interpreted in different ways.

Warnock concludes that “it is impossible to draw a sharp line between the two [i.e. thought and perception]” (p.199, cf. p.194). But if all perception is thought-imbued, and if we can’t clearly distinguish the two even on the basis of the voluntary nature of thought, and further, if it’s impossible to describe our pure perceptions or even to claim that we see the same thing each time we look at it, just how and when, then, is thought independent from perception?

Warnock says little about this. But it’s an important matter, arguably, for ambiguity is pervasive in perception, and if perception blurs inexorably into thought here, then objectivity blurs into subjectivity, and perception blurs into fantasy and illusion. This in turn undermines the coherent use together of thought, perception and imaging, which is surely not Warnock’s intention, nor the intention of anyone who seeks, as she does, to extol the valuable role of imagination.

It may not be impossible to establish the independence of perception from thought. But the best way of doing so involves, once again, going beyond purely philosophical arguments to the evidence of experimental psychology (just as we did above when investigating inner images). The task here is to show that we can isolate not just the imaginative aspects of perception that Warnock focuses upon, but also purely sensory elements. Purely sensory elements will be treated below as being *preconceptual* (uninterpreted) and *brute* (fixed, unchangeable). This avoids attempts to distinguish perception from thought on the questionable basis of the uniquely involuntary nature of perception, as well as on other questionable bases.³⁴ Instead, the distinction is made in terms of the uniquely objective features of perception.

Below, we’ll firstly look at the experimental evidence, then secondly, return to philosophical analysis of this evidence. The point will be that while I may, for example, see new words in an anagram that I didn’t see before, I cannot see new printed letters in this same anagram that I didn’t see before, for these letters appear at a primitive stage in the perceptual process where elements are *not yet conceptually interpreted (they’re preconceptual) and are not modifiable by such interpretations (they’re brute)*. It’s these objective features that we refer to in seeking perceptual clues and in correcting perceptual errors. *If there were no such brute features, then perceptual objects would be re-interpretable indefinitely, and perception would collapse into imagination.* Reality would then resemble an Escher print: nowhere could we point and say that “this is real.”

There is experimental evidence that perception proceeds through stages, and that the primitive stages are preconceptual. Gregory (1978) found that when people are given

exceedingly brief glimpses of patterns, their recognition of them is tenuous and incomplete. With sufficient exposure time, subjects became aware of the actual contours of a black shape on a white background. This step seems to employ rudimentary feature analyzers (Neisser 1967). Only with longer exposure times did they become aware of a recognizable object in the pattern. This step seems to employ constancy mechanisms to unify different perspectives into a single object (these are sometimes fooled by ambiguous figures), as well as conceptual schemas to classify these objects. Here is evidence of different levels of perceptual *awareness*. Numerous studies of this kind show that we build up our perceptual awareness of an object through stages of elaboration, so that *perception of recognizable objects is based upon perception of bare contours and other primitive features*.

This evidence of the existence of stages of perceptual processing accords with the common experience of shifting attention to something in order to become more aware of it. Our preattentive awareness is quite crude. One way to experience it is to stare ahead in a blank trance. Here focal attention and thought are switched off, but we're still crudely aware of a visual field. An even cruder form of perception consists of the motion detectors at the very periphery of our visual field. They consciously signal motions and trigger reflexive eye movements, but they tell nothing about what is moving. This can be confirmed by wagging an object at the corner of someone's eye. In fact, most of our visual field at any one time is outside of focal attention, and is not conceptualized. A glance of face may tell us who a person is, but nothing about the identity of those he was surrounded by, even though they were still part of the visual field.

Sperling's classical experiments (1960,1961) show that after a pattern (typically three rows of three letters each) is flashed on and off a screen, subjects retain an "iconic" image of it for a second or so in a remarkably complete, but unconceptualized form. He demonstrated the *completeness* of this image by signaling his subjects which specific row to report after the pattern had flashed off the screen. Accuracy was very high no matter which of the three rows was chosen, showing that, potentially, any of the nine letters could be read shortly after the pattern flashed off. The image was so vivid and detailed that it was read like a printed page. But it so rapidly decayed that fewer than half the letters could be read before the pattern disappeared.

The *unconceptualized* nature of the icon was indicated by showing the subjects a mixture of letters and numbers, and then asking them to report only the letters. Accuracy dropped drastically, for at the stage of the icon the figures apparently *aren't yet recognized as letters or numbers*, so the subject must take the time to further process each of the figures in order to just report which are letters. Thus, Sperling seems to have found evidence which indicates that vision begins with a sensory image that quickly decays, and that exists in a purely sensory form which precedes recognition even in terms of letters (not to mention words or phrases).

To return to philosophical analysis, it should be noted that the existence of brute

perceptual elements has traditionally been challenged by drawing attention to hallucinations and illusions. After all, sightings of, e.g., flying pink elephants involve sightings of simple figures like those Sperling and Gregory isolated, yet we aren't apt to call these "sightings" actual perceptions. However, this can be dealt with by granting that subjective "sightings" are distinguishable from objective perceptions by means of *methodical checks* (presumably, sightings of flying pink elephants wouldn't stand up to public scrutiny).

Of course, we could also dismiss a man's reports of flying pink elephants based on simple aeronautical principles, or on the smell of gin in his breath. This shows that our ability to distinguish brute, objective elements in perception from ephemeral, subjective ones is based not only on the coherence of interpersonal accounts about what we see (as just noted above), but also on the coherence of what we see with what we know about of the world. Admittedly, we are thus isolating these brute elements through, and by means of, conceptualized experience.³⁵ But the point remains that we can (and constantly do) *agree* on the brute, fixed features of what we see, which is what we set out to establish.

We can conclude by returning to the question, "Do I really see something different each time, or do I only interpret what I see in a different way?" The argument here is that Warnock and Wittgenstein wrongfully suggest that we see something different each time. I may see a drawing of a box from the bottom one moment, and the top the next moment, but regardless of these three-dimensional interpretations, we always can agree that the box consists of nine two-dimensional lines at certain angles upon the paper (nor does this always seem particularly difficult to do.)

The experimental evidence above suggests that bare figures such as these two-dimensional lines are the *preconceptualized foundations* of conceptualized experience. Gregory, Sperling, etc. seem to show that we actually become *aware* of them prior to interpreting them as constant objects of recognizable kinds. They're brute figures rather than just another interpretation, for they aren't *modifiable and transitory* like the three-dimensional structures. Indeed, they're the basis of all interpretation, for they provide the clues and evidence for interpretation.³⁶ The experimental evidence suggests, then, that we are interpreting the *same* primitive perceptual awarenesses in different ways, rather than actually seeing something different each time.³⁷

Warnock may or may not agree with points such as these. But what seems to be lacking in her chapter on images is her own account of how perception is independent from imagination. She continually notes their affinities, but only fleetingly refers to this independence, and only in the context of others' views (e.g., pp.185,193,199). Her aim of showing the pervasive role of imagination in our mental life is an important one. But in her understandable enthusiasm for it, she seems to neglect to distinguish the faculties sufficiently. Yet without a real distinction here,

perception and imagination blur, and cognition slips into reverie and dream: we would genuinely be able to see something different each time we perceive an “object”. Rather than affording an important role to imagination in connection with our other faculties, this tends to preclude coherent use of imagination, or of any other faculty, or of any synergy of faculties.

Now let’s move on, as promised, from Warnock’s assimilation of *perceptual* images to thought, and turn on to her assimilation of *inner* images to thought. The argument will be that this assimilation of inner images to thought not only conflicts with experimental evidence, but also threatens the role of these images as aids to thought, for it doesn’t adequately explain how concrete facts are derivable from such images.

Here again, arguably, Warnock threatens to undermine the intermediate role of imagination between perception and thought by assimilating images to thought. She explicitly rejects that the inner image is something independent of our thought about objects. “The images themselves are not separate from our interpretations of the world; they are our way of thinking of objects in the world” (194). “It is impossible to describe a mental image in itself” (p.161).

However, we saw above that common experience and experimental evidence both seem to show that inner images are, indeed, objects which can be described on their own. That is, they are *employed* by thought, but aren’t *reducible* to thought. This supports the contention of this chapter that images and thought are independent yet interactive phenomena, which are engaged together in a genuine synergy.

Warnock might reply that even though she views images as a form of thought, she isn’t reducing their special character and function away, for this *imagistic* thinking serves the special role of enabling us think in concrete terms about “absent and nonexistent” things, and in this role it supplements more *abstract* thought. In other words, concrete, imagistic thought is intermediate between perception and more abstract, verbal thought.

This brings us to the second part of the criticism. The first part was that her assimilation of inner images to thought conflicts with experimental evidence; the second part is that even when her account is considered on its own apart from experimental evidence, it threatens the intermediate role of images as aids to thought, for her account doesn’t adequately explain *how concrete facts are derivable from inner images*. This is important, because it is the ability of imaging to provide *concrete* information about absent things that is so crucial to its intermediate role between perception and thought (recall, for example, the quotations from Wordsworth above.)

Warnock speaks at length about what images are not (they are not the having of inner pictures), but she also takes pains (starting on p.154) to give a constructive account of what they actually are. The latter covers phenomenological views of the analogical character of images (see above), Wittgenstein’s views on how a verbal description can take the place of the image (for his

propositionalist tendencies, see above), and phenomenological views on the role of “feeling the presence” of something while imagining it. Even though these are all interesting and important points, they tell us nothing about how we are actually able to get concrete information from imagined objects.

Perhaps her most explicit account of how we actually experience images and derive concrete facts from them is on p.173:

Now to justify the claim that you are thinking about some particular thing, you must be able to call attention to at least some features of it If I conjure up the image of a man as he was yesterday, I may concentrate on what he looked like and . . . on what he said and the tones in which he said it trying, perhaps, to guess what he can have meant from the ones of his voice In that case I shall have . . . auditory images. But all the time *he* is the object of my thought. The image *is* our attempt to reach the non-existent or absent objects in our thoughts as we concentrate on this or that aspect of it, its visible appearance, its sound, its smell. We shall express ourselves relatively satisfied with our image when we can think clearly about the aspect . . . we will *not* be satisfied unless we have also succeeded in producing in ourselves that . . . “feel” that the absent thing would have if we were actually in its presence.

Here again, Warnock assimilates inner images to thought, just as she assimilated perceptual images to thought (above): and here again her attempts to do so conflict with common experience (as she seems to allow on p.154) as well as experimental evidence. While it is true that the *thoughts and feelings* she describes above are often integral parts of, e.g., imagining a face, common experience and experimental evidence suggest that imagining a face also involves *envisioning a concrete mental picture* of the face, and reading details from it.

Moreover (and this is the second part of my present criticism), it’s hard to see how we could derive *concrete facts* about faces (e.g., the shape and intent of a smile) without envisioning them spread out within our minds in a *concrete, pictorial form*. It’s hard to see how imaging can perform its intermediate role of allowing us to think concretely about absent objects if images *lack any describable content of their own*, as Warnock claims.

Of course, it is at least conceivable that we could derive concrete information by reviewing purely verbal descriptions of objects. But Warnock isn’t claiming this (though she does rightfully note on p.192f. that imagistic and symbolic thought go hand-in-hand). Nor does this purely verbal approach fit our experience of imaging in ordinary tasks like mentally navigating city streets in our mind, etc. Here we often *do* seem to be getting concrete facts by inspecting actual interior landscapes, despite the counter claims of certain recent schools of philosophy.

So, the obscurity in Warnock's account is that nowhere does she describe the actual psychological experiences and methods by which "thinking visually" about something or "concentrating on . . . its visible appearance" can give us concrete details about it. She's prevented from doing so by her phenomenological adherences, which rule out envisioning mental pictures of things or spatializing their patterns into concrete forms within our minds, as well as by her analytical adherences, which enjoin us to analyze concepts and mere word uses, rather than the psychological phenomena themselves (PI,p.383). Such obscurity on this key point of how we actually get concrete information while imaging, makes it hard to see just how imaging can, on her account, be an aid to thought, and how it can operate in an intermediate manner between thought and perception.

Is the "Common Thread" Imaging?

My second basic criticism of Warnock, it will be recalled, is that the imaging that she focuses exclusively upon isn't really the *common thread* in all typical cases of imagination. Her laudable aim is to show how imagination is a single, coherent concept, but here she attempts to account for its widest sense (creativity) in terms of one of its narrowest senses (imaging). As we'll see, the real coherence to the concept appears to come from the contrary direction. What ties our concept of imagination into a single, coherent concept is the notion of *creativity*, and imaging is only one of its components. So, while Warnock gives a full account of *imaging*, arguably, she gives an overly narrow one of *imagination*, which is inadequate to her expressed aim of isolating the common thread in examples of the latter. We'll find that this criticism in fact applies to most theories of imagination, not just Warnock's. Her's just happens to be a particularly preeminent example.

As this criticism hinges on the meaning of the word, "imagination," we'll begin with a survey of its definitions. One way to get at the meaning of "imagination" is to ask people. But given its nebulous nature and many cognates, what its meaning is depends on how one is asked to define it. For example, "What does it mean to imagine something?" would likely be answered in terms of envisioning a mental image, while "What does it mean to say that someone is imaginative?" would likely be answered in terms of him having a creative, fertile mind.

But as Warnock points out, this needn't mean that our concept of imagination is a jumble of hopelessly unrelated notions confusingly lumped under the same term, without any common thread (as, e.g., Strawson claims). One of the many great values of Warnock's very important work on imagination is her belief that studying the development of the concept in modern thought can display a common thread. We've seen her conclusion: the common thread is that

imagination is quite often seen as the faculty of creating images, which is present in functions ranging from ordinary perception to creative genius.

Brann takes traces the development of the concept of imagination even farther back than Warnock, and reaches much the same conclusion as Warnock (see pp.17-25 and part I). She tells how the Greek word “phantasia” (inner visions) depreciated into whimsical notions like fancy and fantasy, and has “yielded up all serious business to its Latin counterpart,” namely, “imagination.” The latter word was formed from the word “image” and, she claims, has come to mean the faculty for forming mental images. Thus, psychological accounts of imagination often involve classifications of different types of imagery (dreams, thought images, memory images, etc.), while in philosophy (much as Warnock noted), imagination typically refers to “the power mediating between the senses and reason by virtue of representing perceptual objects without their presence.”

Yet, there is also a prominent ordinary usage which also equates imagination with *creativity* (the ability to produce novelty). This comes out, as suggested above, from simply asking people what meaning they attach to the word. “Creativity” or a similar word is typically at the forefront of their accounts. This is reflected in dictionaries of ordinary usage. Webster (1967 edition), for example, defines imagination as both “creative ability” and “the act or power of forming a mental image of something not present to the senses or never before wholly perceived in reality.” The most recent OED definition makes the very same points, though in a more long-winded fashion.

Warnock and Brann are, of course, well aware that imagination is seen both in terms of imaging and creativity. Warnock, after all, sees imagination as the faculty of creating images which is present in activities ranging from ordinary perception to creative genius. Brann, too, sees imagination as the image-creating faculty, and expounds eloquently upon its creative role at the end of her work. But, as we’ve seen, these two distinguished philosophers also differ profoundly. Warnock sees images and imagination as *forms of thought*, and thus as inherently creative. Brann sees both images and imagination as *independent of thought*, and as being creative only in conjunction with thought.

Warnock’s approach thus comes closer to embracing both creativity and imaging into a single, coherent concept of imagination, which is important if one is trying (as Warnock is, but Brann isn’t) to find the common thread in the various usages of the term, “imagination”. But as we’ll see in the following paragraphs (as well as following chapters), imaging is incapable of accounting for creative thought in general, for imaging is only one of the various roots of creativity.³⁸ It appears that much of creative thought isn’t concrete and imagistic at all.

So, an adequate account of creative imagination should apparently embrace not just imaging, but all the various roots of creative thought, as well as their complex interactions. This

is in fact what this entire work is trying to do as it systematically analyzes the various roots of imagination and their creative synergies. Arguably, then, Warnock looked for the coherence in our concept of imagination from the wrong direction. She tried to account for its widest sense (creativity) in terms of one of its narrowest senses (imaging), when it appears that the real coherence to the concept is in the encompassing of narrower senses (including imaging) by the widest sense (creativity).

If imaging is too narrow to account for all of what we typically mean by imagination, much the same can be said about another prevalent account of imagination. This account is a technical one, often given by psychologists (like Wallach or McKellar). But the example below is from *A Dictionary of Philosophy* (1979), edited by Flew.

Imagination: a form of mental activity held to be distinct from cognitive, or rational processes: a free, creative ordering of the contents of mind. Imagination in this sense is often confused with the production of mental imagery, which would be better called “imaging”.

This aligns with Wallach’s (1970) definition of imagination in terms of divergent thinking, or McKellar’s definition (1957:23) in terms of autistic (free, unconstrained) thinking, which he contrasts to reality-adjusted (deliberate, disciplined) thinking:

Unfortunately, some psychologists of an earlier period used the word “imagination” to denote merely the experience of visual, auditory and other images If we were required to identify “imagination” with any one kind of thinking rather than with another, our choice would certainly not be with imaging, but, rather, with fantasy: with the kinds of psychological processes for which the terms “autism” and “A-thinking” have been employed.

McKellar thus identifies imagination not only with unconstrained thinking but also (like Ryle and Sartre) with fantasy. However, unconstrained thinking is often instrumental to problem solving, and is thus hardly fantastic. This intellectualistic disdain of imagination hardly does justice to what is ordinarily meant by “imagination” in its full usage. It’s thus perhaps better to simply identify imagination in McKellar’s sense with the fluid, intuitive thought which naturally contrasts with rigorous, rational thought. This *fluid intuition* is, essentially, thinking in terms of free associations. It can be found in both imagistic thought (when we find a resemblance between concrete objects) as well as verbal thought (when we see the congruity between abstract concepts).

However, fluid intuition is no better a candidate than imaging was for the common thread in all typical cases of imagination. In fact its position here is precisely the same as imaging: it is

a narrow sense of imagination that is embraced by the widest sense of creativity. Creative minds fruitfully combine fluid intuition and rigorous reasoning for controlled flights of thought. Fluid intuition alone is in fact only minimally creative, just because its reveries lack this disciplined, rational structure.

So, neither imaging nor intuition are always creative, and both imaging and intuition are really only part of what creativity is. Indeed, it's difficult to see how any *single* faculty can be successfully identified with creativity, for it seems to arise from the interaction or synergy of various faculties, most notably imaging (which Brann and Warnock focus upon), intuition (which Flew and McKellar focus upon in its fluid mode) and reason (which emerges with the fusion of intuition and symbolism, as we'll see in the next chapter). We are concentrating on *images, intuition and symbols* in this chapter and the next chapter in order to show just how they constitute the psychological roots of creativity.

In sum, then, while Warnock rightly claimed that there is a common thread in all the typical cases of imagination, she wrongly claimed that imaging was that thread. The only way of embracing the most common meanings of imagination together in a coherent concept is by viewing creativity as the widest and most encompassing sense of imagination (its common thread), and by treating this widest sense as embracing narrower senses like imaging and intuition on the grounds that they serve as creativity's psychological roots.³⁹

There are precedents for this account in romantic theories of imagination, like those of Blake and Coleridge. Here we find some suggestions of the idea that imagination, when identified with creativity, encompasses or at least employs elements like reason, intuition or imaging.

In "The Marriage of Heaven and Hell," "There Is No Natural Religion," "The Book of Urizen," "The Book of Los," and elsewhere, Blake seems to allow a role for "reason" (the rule of science, law, morality, religion, etc.) as well as "energy" (the creative life force in passions, dreams, imagery, etc.) in his supremely creative "poetic genius," for "without contraries is no progression," and both "are necessary to human existence." However, true to his romanticism, he felt that reason should arise naturally from within energy, as the "bound or outward circumference" to it (compare how the shape of a candle flame arises from within, and how attempts to impose shape upon it only extinguish it). However, it is debatable whether Blake meant to identify imagination narrowly with imagery, or broadly with poetic genius, seen as a harmonizing of imagery, reason, etc.

Coleridge also seems to suggest that imagination in its most exalted sense of poetic genius is to be identified with creativity, which encompasses or at least employs elements like intuition, imaging and reason. At any rate, his exalted "secondary imagination" (poetic genius) is capable of both *analyzing and synthesizing*. "It dissolves, diffuses, dissipates, in order to recreate

. . . it struggles to idealize and unify.” It breaks down experience and builds it up anew into a new organic identity, unlike fancy, which can only mechanically reassemble experience through mere laws of association.

It seems to be like taking the pieces of a dissected map out of its box. We first look at one part, and then at another, then join and dove-tail them; and when the successive acts of attention have been completed, there is a retrogressive effort of mind to behold it as a whole. The poet should paint to the imagination, not to the fancy; and I know no happier case to exemplify the distinction between these two faculties. (*Biographia Literaria*, ch.12)

Is Imagination Comprehensible Without History?

My third and final criticism of Warnock is that her account of imagistic thought overlooks its great *historical variability*. A fully adequate account of imagistic thought is, presumably, one that lays out all its varieties. While the kinds and operations of imagistic thought have *evolved* over history, Warnock treats it as, in effect, a static, invariable phenomenon. The evolution of imagination will be explored and documented in subsequent chapters, but some brief points can be made here in support of the claim that imagistic thought has evolved. Documentation of them will be left until later in the work.

As we’ll see, thought evolved in a very large part due to the influence of symbolism and civilization. Images serve different purposes at different stages in the evolution of thought, for thought becomes less tied to images and more a product of the interplay of images and words, and imagery and reason. Concrete imagery is the basic medium of thought amongst primal cultures and children, a fact which gives their thought its characteristic self-absorbed, pre-critical nature. In children, imagery appears to be especially spontaneous, pervasive, vivid and fanciful, though adults tend to outgrow this stage.

But with the advent of civilization and literacy, thought became more abstract and systematic, and increasingly emancipated from perception and concrete images. This forged a new, highly creative synergy between reason and the older thought modes dominated by intuition and imagery, and thus helped combine pictorial and verbal logics in our thought processes. In this rationally reconstructed imagination, imagery plays a crucial role in creative processes due to its ability to explore fertile, free associations. But it also plays a more ancillary role in illustrating this more rational thought in its more abstract moments. Galton says of imagery’s role at this stage that “the highest minds are probably those in which it isn’t lost, but subordinated, and is ready for use on suitable occasions.”⁴⁰

It is thus misleading to talk about “the” nature of thought or images, as do Warnock and many others. To do so is to presume that all humans think and employ images in basically the same ways across all cultures and eras. Thought has developed onto progressively higher planes, each with fundamentally different structures and powers. Imagistic thought is a constructive processes whose abilities and schemas develop over time. We learn how to think with images. Thus, the kinds and uses of images differ markedly between children and formally educated adults. Compare the dreamy imagery of children with the systematic operations and abilities of imagistic thought in geometers and architects. It would seem that the *character and function* of images, symbols and thought are all transformed as they develop together. A fully adequate account of imagistic thinking owes us accounts of the different kinds and operations of imagistic thought that results from these transformations.

A final point to be emphasized in this chapter is that this argument that thought is an evolving, rather than static phenomenon, applies not only to imagistic thinking but also to *creative imagination*. The latter is comprised of intricate synergies between images, intuition and reason, that have evolved through various stages, as will be explained in the remainder of this work. The creative imagination is an exceedingly dynamic, variable, multi-faceted phenomena. It’s constantly reflecting upon and manipulating not only its environment, but also itself. It’s constantly building upon itself, constantly examining and transforming its existing structures and methods, and striving to master its inner potentials. This is the very key to its tremendous power and one of the reasons for its highly elusive nature.

So a truly adequate account of creative imagination must ultimately treat it as an emerging, *historical* phenomena whose powers, reach and mobility are constantly expanding. This is a major shortcoming of contemporary theories of imagination. These theories stem primarily from phenomenology and analytical philosophy, whose approaches are *non-historical*, being based as they are upon introspection and armchair linguistic analyses, respectively. They mistakenly assume that cognitive processes in all humans are fundamentally the same, and they speak misleadingly of “the” nature of perception, thought, images, language, etc. in static, invariable terms.

So the point is that if imagination is to be identified with creativity, as urged above, then the method for studying it must be in part historical. Only by looking at imagination *unfolding across all cultures and eras* can we hope to gain a more comprehensive understanding of what this intricate, elusive, emerging phenomenon really is. This will be one aim in the chapters ahead.

SUMMARY

This chapter developed four themes: that intuition and images are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its evolutionary *history*, and that helps to constitute *imagination* in its core sense of creativity.

Accordingly, we began by defending the *independence* of thought and images against various attempts to assimilate them to each other. There wasn't much need to defend the independence of thought from imaging, for not only is much thought obviously imageless, but also the more deliberate forms of imagery are obviously invoked by thought and get their meaning and direction from thought.

But the independence of images from thought was defended at length against prevailing philosophies which treat them as mere objects of thought or language, rather than as observable objects existing independently of thought or language as describable mental pictures. This defense considered the simple, everyday experiences we have of entertaining and even examining images in our minds, as well as recent experimental evidence of our ability to actually rotate, scan and describe mental pictures.

The independence of mental images was also defended against propositionalism, whose attempts to reduce images into purely abstract, verbal, digital terms proved to be a highly cumbersome and inefficient means of processing pictorial representations. Some mental tasks just seem inherently better suited to imagery than words (e.g., mentally counting the windows in your house), while others seem better suited to words rather than images (e.g., arguing about the national deficit). These different powers argue against reductionism.

Having thus tried to defend the independence of images from thought, we then tried to show how their true relationship is *synergistic*. This involved showing the intermediate role that images have between the senses and thought in re-presenting the sensory world in its absence to thought. Thought gives meaning and direction to images, while images bring spatiality, concreteness and clarity to abstract thought, thus helping thought to penetrate, grasp and manipulate the world. This intermediate, image-producing faculty has been identified as imagination by philosophers stretching from Aristotle up to contemporaries like Brann.

Turning to the definition of *imagination*, it was then argued that common accounts of imagination can only be embraced together in a coherent concept by viewing creativity as the widest and most encompassing sense of imagination (its common thread), and by treating this widest sense as embracing narrower senses like imaging and intuition on the grounds that they serve as the creativity's psychological roots. This stands in contrast to the tradition just noted above, which simply identifies imagination as the intermediate, image-producing faculty. While image production is, indeed, this intermediate faculty between perception and thought, this

faculty was construed as just one of several roots of imagination – not as imagination, itself.

Finally, it was argued that because imagination is comprised of complex synergies, it's an exceedingly dynamic, variable, multi-faceted phenomenon that's constantly building upon itself. It's an emerging phenomenon whose powers, reach and mobility are constantly expanding. This means that the method for studying imagination must be in part *historical*. This is a shortcoming of current approaches. Only by looking at imagination unfolding across all cultures and eras can we hope to gain a more comprehensive understanding of what this intricate, elusive, emerging phenomenon really is. This will be one aim in the chapters ahead.

In arguing these themes, criticisms of most theories of imagination were introduced. Because Warnock synthesizes many of these theories, much of this criticism focused upon her account. It was criticized because (1) her assimilation of images to thought is hard to reconcile with both experimental evidence about images and her own apparent belief in the interaction of perceiving, imaging and thinking, (2) the “common thread” in typical uses of imagination isn't the imaging she focuses on, but creativity, which embraces imaging, and (3) she overlooks imagination's historical variability – to be fully understood it must be studied historically.

CHAPTER 2 NOTES

1. Though this chapter often speaks of the synergy of images with thought in general, rather than just with intuitive thought, the main focus is nonetheless upon imagistic thought, which is largely a synthesis of *intuition* and images (in the form of imagery). We'll focus upon abstract thought in the next chapter, as we turn to the synergy of symbols and intuition. The definition of “intuition” is covered in chapter three under the account of “the synergy of reason and intuition”.

2. For example, Webster defines imagery as: (1) the product of images makers or the art of making images, (2) figurative language, (3) mental images.

3. We should beware trying to reduce thought to its mediums, images and symbols, for we often have to struggle to put thought into words and images.

4. As we'll see, this isn't always a clear-cut distinction: early pictographic writing is an example of a transitional case.

5. Brann 1991:238ff.

6. See, for example, Brann 1991 and the *Oxford English Dictionary* definitions of (reproductive) imagination.

7. These accounts below are drawn from McKellar, Brann, Neisser, the *Oxford Companion to the Mind*, and other sources.

8. These examples are from chapter three of McKellar 1957.

9. *Oxford Companion to the Mind*, p.202.

10. *Oxford Companion to the Mind*, p.203.

11. My account of the autonomy of images from thought is indebted to Brann's *The World of the Imagination*.

12. This was Brentano's point, originally. He offered it as a criterion of mental activity in contrast to physical activity. However, intentionality isn't actually a true criterion of the mental, for sensations such as pain lack objects. Husserl would argue in a similar direction as Brentano by noting that we can't discover a pure experience which doesn't already have a general significance: we can not have a pure experience of an image as a perceptible object (e.g., a sound) and then somehow attach general significance to it (e.g., as a melody); we're directly of aware of the object itself from the start as containing this general sense.

13. This problem was cited in an unrelated context in the *Oxford Companion to the Mind* p.475. Compare Brann 1991:196,258.

14. Brann (1991:174).

15. These logics aren't monolithic. For example, verbal logic involves deduction, induction and analogy (the latter is also called "association of ideas" and actually cuts across verbal and spatial thinking). In addition to pictorial and verbal logics, there is arguably an emotional logic. "The heart has its reasons that reason knows not." Illustrations are Pascal's wager, Kant's ideas of reason, and Hume's claim that passions, not reason, give us ultimate ends.

16. Although "no right turn" can be represented by a right arrow with a bar across it, presumably this is more symbolic than a pictorial.

17. It should be noted that this pertains to images and symbols, themselves, and not necessarily to imagistic or symbolic thought. Still, there are real implications here for differences between imagistic and symbolic thought. For example, see the discussions at the beginning of the chapter on "dream logic" and on why concrete images and metaphorical thought fit together.

18. In fact, the memories of the one may not even be directly available to the other. If subjects are given objects to handle while their right (articulate) brain is put to sleep (through the Wada procedure), when they recover they are unable to name the objects, but can pick them out from a pictorial line up of objects (Blakeslee 1980:27).

19. Brann does note an experiment addressing the "congruity effect" which is perhaps more controversial than the rest in this respect.

When subjects are asked which of two large items is the larger they respond measurably faster than when they are asked which of two large items is the smaller, that is, when the asking and the response categories are mismatched. This effect would seem to indicate that what matters is not the image but the categorization. Kosslyn [et.al 1980], however, explains the effect in terms of the recalibration of the mental comparison mechanism for imagery, a process that might take just as long as category-rematching. He shows that

both processes are at work in parallel, “racing” each other. Whichever gets there first, wins over the other. For example, when two memory-representations are in the same size category, it is fastest to compare the images directly without considering the categories. [p.255]

20. See the problem of the red cube, above. On the relationship of thought and images, see pages Brann pp.1-24,145-9,197-204,257-9,773-86,801-3.

21. Haber 1981, cited in Brann, p.323.

22. Haber 1981, cited in Brann, p.323.

23. Brann (1991:783ff.)

24. Imagery prepares us for action not just by rehearsal of procedures, but also by motivating us (e.g., reliving confidence-building events), and also by allowing us to run through difficult procedures mentally to foresee pitfalls.

25. Brann notes (p.296) that modern developmental psychologists like Piaget and Bruner also give an intermediate role to imagery between perception and intellect. (Bruner, for example, traces cognitive development from the “enactive” representations in action sequences, to the “ikonic” representations of images, to the “symbolic” representations of language and other tools.) However, she notes, this role is “as it were, cast into time and turned into a developmental sequence.”

26. Compare Warnock’s reference below to this same quotation in defense of her central claim that “we cannot separate the interpretative function of the imagination from its image-forming function,” so that imagination embraces the forming of mental images, interpreting of perception and creation of art, as Kant, Wordsworth, etc. claim.

27. Especially pp.42,46,54f.,57,61,65.

28. Warnock covers Coleridge in pp.72-102 primarily, but especially see pp.82,84,91-3,96,101-2.

29. Chapter 13 of *Biographia Literaria* says, “FANCY, on the contrary, has no other counters to play with, but fixities and definites. The Fancy is indeed no other than a mode of Memory emancipated from the order of time and space; while it is blended with, and modified by that empirical phenomenon of the will, which we express by the word choice. But equally with the ordinary memory, the Fancy must receive all its materials ready made from the law of association.”

30. Chapter 13 of *Biographia Literaria* says, “The imagination then, I consider either as primary or secondary. The primary imagination I hold to be the living power and prime agent of all human perception and as a repetition in the infinite mind of the eternal act of creation in the infinite I AM. The secondary I consider as an echo of the former, coexisting with the conscious will, yet still as identical with the primary in the kind of its agency, and differing only in degree and in the mode of its operation. It dissolves, diffuses, dissipates, in order to recreate; or where this process is rendered impossible, yet still at all events it struggles to idealize and unify. It is essentially vital, even as all objects (as objects) are essentially fixed and dead.”

31. Warnock covers Wordsworth on pp.102-130 primarily, but see especially pp.102,112,115,118-

9,120,128.

32. Though absent long

These forms of beauty have not been to me
As in a landscape to a blind man's eye:
But oft in lonely rooms, and mid the din
Of towns and cities, I have owed to them
In hours of weariness sensations sweet,
Felt in the blood and felt along the heart,
And passing even into my purer mind
With tranquil restoration . . .

33. This spiritual love acts not nor can exist

Without imagination, which, in truth,
Is but another name for absolute power
And clearest insight, amplitude of mind,
And Reason in her most exalted mood.

Warnock says (p.204) of such bold claims for imagination that "If imagination will save us, it is the very same imagination which enables us to grasp the forms in the first place and then to visit and revisit them in our mind's eye thereafter."

34. One way of distinguishing our images as perceptual rather than products of imagination is that sensory images have greater strength and vivacity than the images of imagination. But not so in hallucinations. Another criterion is that the images of imagination don't reveal themselves by observational scrutiny, like sensory images. But, as Brann notes, mysterious figures in dreams can reveal their identity by turning around and facing us as our dream unfolds. Another criterion is that only sensory images can be rotated. But research on imaginative imagery now may suggest otherwise. A further criterion is that imaginative objects leap into view, while perceptual objects move in a continuous space. But imagination can mimic perception here sometimes.

35. Geach says, "we can describe our visual sensations only by . . . applying in this description certain of the concepts we use in describing physical things, viz. concepts of shape, size, spatial relations and colours." (1957:125)

36. Linguistic philosophers would probably express this point by saying that without such objects of interpretation, the very word "interpretation" would be irrelevant. But this trivializes the point.

37. If, as Warnock says on p.149, accounts of perception should be "tested . . . against actual experience," then presumably her own account should be tested against the actual perceptual *experience* reported by subjects of such experiments.

38. Warnock actually comes close to agreeing with this at moments. See, e.g., p.183, where she says that imaging, interpreting, creating, etc. are "to *some extent* dependent on the same mode of thought" (the bold-facing is mine). It should also be noted here that she is also quite open and gracious in allowing that other theories of imagination exist on p.196.

39. This thesis is compatible with the fact that imagery and intuition can be used alone in ways that are only tenuously creative (as in reveries). What's being claimed is that the account above brings *genuine coherence* to our concept of imagination, due to the way these roots so typically work together. This is

more than ample enough to counter those who claim that imagination denotes only a jumble of unrelated ideas. This is much the same sort of point as made by Warnock on her p.35. This account might also be criticized for being “nebulous”. This is Brann’s view of it. It certainly lacks the clarity of Brann’s own view, which simply equates imagination with imaging. However, there is a real, functional unity to the proposed concept, centering upon its widest, creative aspect. Further, this is the only way that all cases of what are typically called imagination can be embraced in a coherent concept. Brann’s account of imagination invites the opposite criticism: imaging is not all there is to imagination, as typically conceived . . .

40. Quoted in McKellar 1957.

CHAPTER 3

THE SYNERGY OF SYMBOLS AND INTUITION

As already noted, the purpose of this work is to gain a more comprehensive understanding of imagination by looking into the evolving synergies between its roots, from which its structures, powers and limitations derive. With this purpose in mind, part one is looking into the synergies of imagination's psychological roots (images, symbols and intuitions), while part two will look into the synergies of its sociobiological roots (institutions and instincts).

While the previous chapter in part one looked at the synergy of intuition (non-inferential thought) and images, which are the roots of imagistic thought, this concluding chapter of part one will look at the synergy of intuition and symbols, which are the roots of rational thought.¹ Here, as in the previous chapter, we'll pursue the purpose of this work by trying to both establish and explore the synergistic relationship between these roots.

The structure of this chapter parallels that of the previous one: it will be argued that intuition and symbols are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its evolutionary *history*, and that helps to constitute *imagination* in its core sense of creativity.

The independence of symbols and thought will be defended against Skinner, Chomsky, Whorf, Piaget and others, who take rather one-sided views of their relationship. This opens the way for showing that their relationship is synergistic, in that it consists of genuinely independent elements joining together to do what they cannot do apart. Here we'll see how symbols, like images, serve an intermediate role between perception and thought by re-presenting the sensory world in its absence to thought.

But we'll see that images and symbols serve as mediums of thought in their own ways. We've already seen how images foster concrete, spatial thought (imagistic thought). By contrast, symbols foster abstract, systematic thought (rational thought²). In this way, symbolism emancipates thought from the concrete, perceptual world and opens it up into a world of possibilities and ideas. It thus serves as the source of what makes humans so unique. Symbolism produces more organized and resourceful minds and societies, and allows humans to master themselves and their world. It leads us out of the confined world of beasts and into the wide open possibilities of civilization and reason.

But, as we'll see, this doesn't mean that the older, imagistic thought has become

irrelevant. The synergy of images and intuition, which comprises imagistic thought, still has vital roles to play. To begin with, the very abstraction of symbolic thought requires that it be complimented and clarified by concrete images. Further, symbolic thought still requires intuitive thought for the fluid, associative approaches it brings to problem solving.

Imagistic thought and symbolic thought on their own tend toward aimless reverie and formal sterility, respectively. But when we synthesize the richness and vitality of the former with the discipline and conceptual mobility of the latter, the guided flight of this more powerful form of thought enables us to soar into whole new realms of creative possibilities. So, in the end, it is this overall synergy of intuition, images and symbols which comprises imagination, construed in its core sense of creativity. This drives home once again that imagination is a complex of dynamic, evolving synergies, which can be fully understood only by looking into its history.

Symbolism

Although terminology varies, symbols are usually seen as one of several types of sign. Signs are generally seen as entities which represents other entities. Signs are thus divided up on the basis of how they represent. Peirce's famous taxonomy divides signs into three kinds. Icons (or images³) represent other entities in virtue of their inherent resemblance to them, as a cross hanging in a Christian church resembles the cross Jesus Christ was crucified upon. Indexes represent other entities in virtue of actual causal connections to them, as a growl indicates anger. Symbols represent other entities in virtue of social conventions, as a red light signals us to stop.⁴

This chapter will be mostly concerned with linguistic symbols.⁵ Languages can be seen as systems of such symbols. Each is comprised of a phonological system (whose sounds make up words and then sentences), a syntactical system (which governs how each symbol is related to another) and a semantic system (which governs the relationship between signs and their meanings). *Figurative language*, or imagery, is interesting because it's representational in both the iconic and symbolic senses.⁶ While it's symbolic (based upon conventional representation, like the rest of language), it's also iconic in that it represents by similarity or likeness (as, for example, in "the ship plows the sea" or "he fanned the flames of racial hatred").

Such metaphor may be more widespread than we often realize. It is a basic means of extending language and thought into new realms, as in the expression of ideas and feelings in art and religion. Myth and poetry are essentially metaphorical in their grasp. The power of imagery in these areas rests upon its deep associations with what it represents, as in the Kukuku myth that the dew is the moon's urine, and the sun is red in the morning because he is embarrassed by his wife's urination, which he quickly dries by his heat. Though much of our symbolism often

eludes linguistic explanation, it can be so rich and deep as to embrace the profoundest values of primal societies.

THE INDEPENDENCE OF SYMBOLS AND THOUGHT

The main thesis of this chapter is that thought and language are genuinely independent faculties which are engaged in a creative synergy together. We'll defend their independence by criticizing the views of Skinner and Chomsky, who have rather one-sided views of their *roots*, as well as the views of Piaget and Whorf, who have rather one-sided views of their *mature relationship*.

Concerning the *roots* of thought and language, Vygotsky argues (1962:33ff.) that they are quite different, both ontogenetically and phylogenetically. In both apes and human infants, thought is at the prelinguistic stage, and language is at the preintellectual stage. Only at the end of the second year in humans do thought and language merge, so that thought begins to become rational and language begins to become thoughtful and ceases to be mere babble. But, as we'll now see, there are different theories of language acquisition, and they have differing implications for whether thought and language have independent roots. These theories differ primarily on whether grammar is acquired by conditioning (e.g., Skinner), whether it is innate (e.g., Chomsky), or whether it is acquired by insightful learning (e.g., Piaget and Lennenberg).

Skinner

The first of these theories, behaviorism, claims that language, and all other behaviors, are acquired by conditioning alone. Skinner, for example, claims that random vocalizations are amplified by conditioning until they become habitual (as, for example, when "thank you" elicits "you're welcome").

But Chomsky's 1959 review of Skinner points out that this purely habitual approach to language is unworkable, given language's great complexity, variability and novelty. We cannot possibly store as a matter of habit all possible English sentences in our memory, yet we easily generate English sentences most of our waking life, and often in novel ways. The child only hears a limited number of sentences, yet can potentially create and recognize an infinite number of them.

Chomsky

Chomsky feels that children learn the great complexities of language so quickly and efficiently because they have innate inclinations concerning what to look for in the vast background of sounds and speech that surrounds them. What is innate here is the deep structure of our grammar, while what is learned is the surface structure (the way that the deep structure is spelled out in specific languages). For example, “Ted is easy to please” and “Ted is eager to please” have the same surface structure, but different deep structures (Ted is the object in the first sentence and the subject in the second sentence). Conversely, “Ted kicked the ball” and “the ball was kicked by Ted” have different surface structures, but the same deep structure. It’s this deep structure that gives a common ground to all languages, and makes translation between them possible.

In contrast to the behaviorist view, Chomsky feels that the child doesn’t begin with the surface structure that he hears from his family’s speech. Rather, he begins with the deep structure: with an awareness of the basic, innate, universal structure of language. Only gradually does he develop the ability to transform this into the surface structure of his own language.⁷ It might be noted in this context that the early language of children is quite similar (e.g., Slobin 1970), and that the linguistic mistakes of children fail to take into account the idiosyncracies of their particular language, while often seeming to be quite logical in the deep sense. Chomsky and others feel that this is because the language of children is determined by deep structure.⁸

Chomsky thus takes a rationalist rather than empiricist approach to language. He rejects behaviorism’s view that the child is a blank slate at birth, with no special abilities for language acquisition, but just a general ability to learn. He claims that humans have a specific ability for language and that it is innate: the basic structure of language is wired in at birth, and is not to be confused with general learning abilities.⁹

Several reasons have been put forth over the years for the innateness of language in this strict sense of an innate deep grammar. To begin with, grammatical language appears to be unique to humans. Despite several decades of research into the linguistic competence of animals, there is still no real evidence of systematic, prevalent use of even the most basic grammatical distinctions outside of humans.¹⁰ In stark contrast, there is a remarkable uniformity in the use of such languages by all human cultures. Only the most severely impaired humans lack this linguistic ability. This sort of reasoning has long been evident. For example, Descartes argues in his *Discourse on Method* (penultimate paragraph of discourse 5) as follows:

For it is particularly noteworthy that there are no men so dull-witted and stupid, not even imbeciles, who are incapable of arranging together different words, and of composing discourse by which to make their thoughts understood; and that, on

the contrary, there is no other animal, however perfect and whatever excellent dispositions it has at birth, which can do the same.

There have been recent observations in the same spirit. One is that the stages of language acquisition appear to be quite similar between human cultures: children progress from one word, to two words, to actual sentences by gradually differentiating syntactical classes and integrating them into larger units (e.g., Slobin 1970, Ervin-Tripp 1973). A second observation now given in support of the innateness of language is that there appear to be universal grammatical features shared by all human languages. For example, Greenberg (1963) found that of the thirty languages he surveyed none lacked the subject/object distinction. Without such universals, it would be difficult to translate languages into each other as we do.

So the standard arguments cited above for the innateness of language are that *human languages seem to share basic grammatical distinctions and stages of acquisition*, and that *such languages are not only uniform among humans, but also unique to humans*. But these observations hardly demand the conclusion that grammars are innate, for they're compatible with an alternative theory.

Lennenberg

An alternative to language being acquired either through genes or through conditioning is that it's acquired through insightful learning, though with some very broad biological background (rather than through a specific biological competence, as with Chomsky). There's obviously room for a wide variety of views here, given the emphasis on both broad biological factors and insight learning. Piaget and Lennenberg are just two examples of the diverse crowd of authors subscribing to this view.

The reason this is called "insight learning" is that language is mastered on this view in the same way that we master the "logics" of other tools and activities: by manipulating them and abstracting their logics for assimilation into our conceptual framework. What's learned here isn't mere associations between stimuli and responses, but rather principles or insights (e.g., Piaget's schemas). So the reason for the universal features and stages of human languages could simply be that certain rules in language and ways of learning language are largely unavoidable, given the limitations of the human mind and the functions of language. On this view, as Piaget points out, there's simply no need to postulate the existence of an elaborate, genetically based grammar.

Although Lennenberg (1964,1967) argues for a biological basis to our unique linguistic abilities, he's closer to Piaget than Chomsky. He gives the same sort of reasons noted above for

saying that there's a unique biological basis to human language. But he doesn't claim, like Chomsky, that grammars are innate. Instead he argues that there's a broad biological background to man's unique cognitive and linguistic abilities. He says (1967:374) that language "is the manifestation of species-specific cognitive properties. It is the consequence of the biological peculiarities that make a human type of cognition possible." These species-specific cognitive properties are the general principles of differentiation and categorization. He allows a role for learning in triggering language development, but only after a certain point of "language readiness" has been achieved in the maturation of children's cognitive abilities.

Similarly, Piaget felt that language could only arise once cognition had developed a basic categorical framework that is capable of supporting fundamental grammatical distinctions. Also like Lennenberg, Piaget rooted the development of cognitive structures in basic biological principles, notably those of assimilation to preexisting structures and accommodation of these structures to new situations, which he sees as adaptive properties of all living matter. In this manner, cognitive development proceeds through various stages in which there are temporarily stable equilibriums between experience and cognitive structures (this is a process of "dialectical constructivism" that echoes Hegel's dialectic). But in both Piaget and Lennenberg such principles are quite distant, indeed, from the comparatively strict biological determinism that we find in Chomsky.

Independent Roots of Thought and Language

The basic differences between these theories of language acquisition thus focus on whether grammar is (1) acquired by conditioning, (2) innate, or (3) acquired by insightful learning. These positions have different possible implications on the question of *whether the roots of thought and grammar are independent of each other*.

The first approach (behaviorism) sees both thought and language as being reducible into sets of habitual associations, just like all behaviors. It thus denies any independence to either thought or language. But this is impractical, given the great complexity and novelty of language.

The second sort of approach (innate grammar) could conceivably lead to different answers to the question of whether the roots of grammar are independent of thought. This approach might be used to say that grammatical categories are innate and thus have different roots from the learned categories of thought. In this case, the roots of grammar are independent of thought. Alternatively, this approach might be used to say that both sets of categories somehow stem from the same innate structures. In this case alone, are the roots of grammar dependent in a sense on those of thought. However, due to the lack of unambiguous evidence for

such an elaborate innate structure, its postulation is unneeded and uneconomical, given that the third approach makes no such assumptions, but is just as compatible with the evidence.

This third sort of approach (insightful learning) could also conceivably lead to different answers to the question of whether the roots of grammar are independent of thought. On one view, grammar is derived partly from the spontaneous concepts of childhood, and partly from subsequent instruction. Here grammar is partly derived from childhood thought, and partly derived from culture, which is to a large extent external to, and independent of these early stages of thought. Other views derive grammar from either the former or the latter of these two sources. But only if grammar derives wholly from the former (i.e., from the conceptual categories of childhood) are the roots of grammar wholly dependent on those of thought. But this is implausible: even innatists allow that grammars are partly culturally elaborated. In this sense, all theories must allow for at least *some independence* of language from thought.

Vygotsky (1962:149f.) argues for the independent roots of language and thought by saying that “there is no rigid correspondence between the units of thought and speech. This is especially obvious when a thought process miscarries Thought, unlike speech, does not consist of separate units [T]he whole thought is present at once, but in speech it has to be developed successively. A thought may be compared to a cloud shedding a shower of words.” He adds that “The structure of speech does not simply mirror the structure of thought; that is why words cannot be put on by thought like a ready-made garment.”

Put bluntly, thought doesn't consist of phrases of declined nouns, conjugated verbs, articles, prepositions, etc. We thus often have to struggle and search for the language to express our thoughts. We sometimes fail here, and when we succeed, we succeed only to a matter of degree in capturing the thought in words. This point is all the more relevant for more imagistic forms of thought, especially the imagery of daydreams and night dreams, which are rich, global and holistic, rather than spare, serial and atomistic.

A final reason for granting that thought and language have different roots could be the finding that competence in one can occur in the absence of competence in the other. For example, some brain-damaged patients are capable of tasks like playing chess or draughts, but are incapable of describing simple events or reading simple notices (Head 1926). Other brain-damaged patients can respond readily to questions and instructions and can communicate with others in various ways, but are incapable of dealing with abstract questions like “is the number seven bigger than the number four?” (Goldstein and Scheerer 1941). This would seem to further support Vygotsky's contention that thought and language have different roots.

In sum, then, the roots of thought and language would seem to be at least partly independent of each other. Infants and beasts exhibit a preintellectual form of language, and a prelinguistic form of thought. Also, thought and language can be impaired independently of one

another. Furthermore, languages are at least in part elaborate cultural artifacts which thought must struggle to internalize, and struggle to express itself through. Thought isn't a series of words, and is in fact often difficult to put into words.

Piaget

So far we've defended the independent *roots* of thought and language. Now we'll look at their independence in their *mature* relationship.¹¹ Though Piaget is relevant to both discussions, he's particularly relevant to this latter one. More than most other major thinkers, he tends towards the extreme view that thought determines language. He feels that the basic structures of thought arise through physical interaction with the environment, not through language. In support of this, he notes that language doesn't even emerge until the end of the second year of life, after the early foundations of thought are already established in the sensori-motor stage. At this time the child has already built up a basic framework of concepts for interpreting his world in terms of spatial and causal relationships of permanent objects.

Piaget feels that it's only upon the basis of this conceptual development that the child develops symbolic operations. This occurs as the child learns to substitute private symbols for objects. He cites, e.g., how his daughter imitates a matchbox opening and closing by opening and closing her mouth with her finger. These private symbols eventually become socialized as the child acquires language. Symbolism thus develops before language, and language matures only to the degree that underlying conceptual operations mature.

a symbolic function exists which is broader than language . . . it is permissible to conclude that thought precedes language . . . [that] language is not enough to explain thought, because the structures that characterize thought have their roots in action and in sensori-motor mechanisms that are deeper than linguistics (1967:91ff.)

Piaget's points are thus that language could only arise once thought has developed a basic categorical framework capable of supporting grammatical distinctions, and that symbolism develops prior to language out of this conceptual structure. He thus tends to view language as a mere *vehicle* for thought, at least in early life. Some support for this view comes from Sinclair-de-Zwart (1973), who notes that the first grammatical relations used by the child (object/action and subject/predicate) mirror the first cognitive contrasts made by the child between self and objects.

Another study by Sinclair-de-Zwart (1969) gives further support to Piaget here. Bruner

(who gives more weight to language than Piaget in early development) claims that language helps children to focus attention away from single dimensions in conservation problems, and that learning the appropriate language should thus actually help children to solve such problems. However, Sinclair-de-Zwart found that Bruner's prediction isn't true. It would seem that underlying cognitive integrations and coordinations must have progressed far enough for such problems to be effectively solved, which aligns with Piaget's claim that at lower levels of development language reflects rather than drives cognitive development.

Piaget doesn't deny that language has a later role in developing higher conceptual operations, especially in formal operational thought, though he grants language a later and lesser role here than many other theorists. His admission that language does have a later role in shaping thought means that his position isn't as extreme as some make him out to be. Yet, he's open to criticism for neglecting the full role of language in thought, and for tending to treat language as a mere outgrowth of, and mere vehicle for, thought. Though these charges are debatable, Piaget could have been more explicit on the full role of language in the development of higher thought, and on how symbolism actually *transforms* thought. This in one area where Piaget needs complimenting by others, like Vygotsky and Bruner, as we'll see below.

Whorf

At the other extreme, the idea that *language determines thought* was first systematically argued by means of extensive field research by two American linguists, Sapir and Whorf, who wrote after WWII, when field work into languages was expanding. They were struck by the differences between languages,¹² both lexical and syntactic, and the apparent affects these differences had upon the way humans see the world. Whorf thus claimed that,

the "real world" is to a large extent unconsciously built up on the linguistic habits of the group We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation. (1958:162)

[Grammar] is not merely a reproducing instrument for voicing ideas but rather is itself the shaper of ideas, the program and guide for the individual's mental activity, for his analysis of impressions, for his synthesis of his mental stock in trade. Formulation of ideas is not an independent process . . . but is part of a particular grammar and differs . . . between different grammars We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way ITS TERMS ARE ABSOLUTELY OBLIGATORY . . . (1956:212-14)

He seems to be arguing here that *different languages compel different views of the world*.¹³ As has often been pointed out, there are problems in Whorf's arguments for this conclusion. He says, for example, that in Shawnee the expressions for "I push his head back" and "I dropped it in the water and it floated [bobbed back]" use the *same* verb, meaning "occurrence of a condition of force and reaction, pressure back, recoil" (1956:235). By contrast, English speakers would *distinguish* these two situations. He concludes that Shawnees see these two situations as quite similar, while English speakers don't.

But, as J.B. Carroll (editor of Whorf's *Language, Thought and Reality*) notes, we can't move from observations that languages differ to conclusions that underlying thought processes differ without checking for differences in underlying thought processes *independently* of differences in languages. By not doing this here, Whorf is simply assuming what he sets out to prove.

An example of this fallacy is the conclusion drawn from the oft-quoted case of how the Nootka treat the "the stone falls" as "it stoness downward." The conclusion often drawn is that this indicates a fundamentally different set of categories than those articulated by Aristotle or Kant, for the category of *object* is replaced by a category of *process*. But, independent evidence of these conceptual categories is needed. It could quite well be, for example, that the Nootka merely express in a unique way the universal propensity of human beings to conceptualize their world in terms of *objects* interacting.

When such independent evidence of underlying thought processes is found, it in fact gives only mixed support to the hypothesis that different languages compel different views of the world. There is better evidence for the effects of vocabularies on thought than the effects of grammar on thought, so let's look at the former first.

Experiments by Carmichael (1932) and Lawless and Marshall (1957) show that ambiguous figures are distorted to conform better to the vocabularies we use to aid our memory. For example, a drawing of two circles connected by a line was reproduced from memory differently by subjects, depending on whether it was recalled as a dumbbell or a pair of eyeglasses. Evidently, words help us to store and recall perceptions. But there are many culturally variable factors at work here besides language (different institutions, historical experiences, levels of conceptual development, etc.), so replication of such experiments is often difficult. For example, while Brown and Lennenberg (1956) found that color vocabulary helps in discriminating and recalling colors, Heider (1972) found little evidence of this. This isn't to deny that what we know affects what we see and remember ("cognitive penetration") as well as what we look for ("set"). But we should be careful of claiming that different vocabularies compel us to view the world in different ways.

There is less evidence for the effects of grammar on thought. Carroll (1958) noted that Navaho language requires certain verbs (those dealing with the handling of things) to take special forms, depending on the form (shape, width, etc.) of the things being handled. He found that Navaho-speaking children performed sorting tasks based on form at an earlier age than English speaking Navaho children. This was presumably because Navaho grammar demands special attention to such forms. But language apparently isn't the only factor at work in such situations, for middle-class, English-speaking children from Boston did just as well as the Navaho-speaking children on this same test, presumably because of the abundance of their toys, with their stimulating variety of shapes (Carroll 1964:109). This highlights again how attempts to isolate the role of language are complicated by the large number of other cultural factors at work.

There is no evidence that language determines our overall interpretation of the world in terms of basic concepts like space, time, objects, causation, etc. We have seen the problem in concluding that the Nootka view their world in terms of events rather than objects.¹⁴ Similarly, it has been assumed that because Hopi Indians don't speak of space and time in our "quantified" terms, that their language has produced a fundamentally different world view. Yet a far more plausible explanation (as we'll see in the next chapter) is simply that their qualitative conceptions of space and time are reflections of their *preoperational thought*. This would thus seem to be an example of thought (conceptual development) determining language, not the reverse!

So what about Whorf's claim that language *determines* thought – that it is "absolutely obligatory" upon thought? The great role of language in thought isn't at issue here. Few would disagree that language furnishes our thought, focuses our attentions, articulates our views, develops our rational thought processes, etc. And few would disagree that language affects thought in negative ways, as in the bewitching of thought by language (which was noted by Wittgenstein) or in the constraining of thought by lack of vocabulary (which constantly frustrates creative thinkers).¹⁵ The real issue is, instead, whether language determines thought in the *strict, one-way* fashion that Whorf claims.

The obvious problem with Whorf's lopsided linguistic determinism is that not only does language shape thought, but thought also shapes language. Thought constantly breaks new ground, and constantly reshapes the way we talk about things, even in profound ways. The most innovative stages of the creative act, as we'll see, occur outside of language, and can even be stunted by committing them to writing too soon. Whorf overlooks this imaginative, self-transforming character of thought. Nor is the influence of thought upon language limited to new, creative outlooks. For example, we've just seen above that the dynamics of preoperational thought can determine how traditional peoples talk about their world in their day-to-day lives. Another example is imagistic thought, where we typically envision things in thought before trying to put them into words.

The idea that our world views are linguistically determined treats thought as a mere epiphenomenon of language. Instead, we should perhaps say that while our world views are shaped by language, their vitality and dynamism comes from thought. Language on its own is lifeless – a dormant tool without a user. On the other hand, thought without language can slip into ephemeral reveries. As we're now about to see, the relationship between thought and language isn't the lopsided determinism that Whorf claims, but a genuine, full-blooded synergy.

So, Whorf's view that different languages compel different views of the world has only limited support. His arguments assume rather than prove this: he simply infers from observed differences in language that there are also underlying differences in how people think. He doesn't give any independent evidence here about how people do actually think. Subsequent research has found mixed evidence of a link between the two. There's evidence that vocabularies affect how we perceive and recall things, but little evidence of similar effects by grammars, and no real evidence that language determines our basic categories. In general, language affects verbal thought more deeply than intuitive or imagistic thought. A methodological problem here is disentangling the many factors (institutions, historical experiences, conceptual development, languages, etc.) that account for different ways of viewing the world. Finally, Whorf's claim that language strictly determines thought isn't plausible. Thought is too dynamic and creative to be *imprisoned* by thought. A far weaker (and far more plausible) approach would avoid saying that language affects thought in an all-pervasive and deterministic fashion, and would instead simply say that *language affects thought to various degrees in different areas*.

The Independence of Mature Thought and Language

In conclusion, we've found little support for the extreme views above which deny the independence of thought and language, and which instead see their relationship as one-way. Piaget is often put at one extreme. He neglects the full role of language upon thought, and often seems to treat language as a mere outgrowth of, and mere vehicle for, thought. In fact, language transforms thought profoundly at its highest stages. At the other extreme, Whorf claims that different languages compel different kinds of thought. But research shows that language influences different kinds of thought in different ways and degrees. Further, thought is too dynamic and creative to be imprisoned by thought. His emphasis on an all-pervasive determinism could be weakened so as to simply say that language affects thought to various degrees in different areas.

THE SYNERGY OF SYMBOLS AND THOUGHT

The position that this chapter defends is that thought and language are independent faculties that are engaged in a creative synergy together. Having just established the first part of this claim, let's now look at how their relationship is, indeed, synergistic, i.e., a joining of genuinely independent entities to do together what they can't do apart. We'll see that language needn't be seen as an imprisoning cage for thought, nor a passive vehicle for thought. There's a large middle ground between these extremes that emphasizes their two-way relationship. Piaget and Whorf can be reconciled by recognizing that language shapes thought to various degrees in different areas, that the categorical structure of thought is a basis for linguistic development, and that there's a vital synthesis, a creative synergy between thought and language, especially at their highest levels. This sort of view is found in Vygotsky and Bruner. They can be seen as extending Piaget's studies of conceptual development by showing how profoundly language transforms thought at its highest stages. They also might be seen as extending Whorf's studies of the *special* effects of *specific* languages upon specific thought schemes, by looking to the *general* effects of language as a whole upon *thought as a whole*.

Vygotsky

As we've already seen, Vygotsky felt that thought and language have different roots, both ontogenetically and phylogenetically. Thus, in human infants and beasts symbolism is nascent, thought is enslaved by perception, and action is impulsive. However, thought and language begin to merge in humans late in the second year, so that thought begins to become rational, and language begins to become thoughtful and ceases to be mere babble (1962:33ff.,1978:19ff.).

Language helps to free us from the enslavement to perception and conditioning that dominates animal behavior. It leads from the "biological" into the "culturally-based" realm (1978:40), and it helps to foster planned, voluntary behavior.

Unlike the ape, which Kohler tells us is "the slave of its own visual field," children acquire an independence with respect to their concrete surroundings The specifically human capacity for language enables children to provide for auxiliary tools in the solution of difficult tasks, to overcome impulsive action, to plan a solution to a problem prior to its execution, and to master their own behavior. [1978:28]

At first, development proceeds by practical experience, but language, in the form of

schooling, argumentation and criticism, furnishes knowledge and reshapes it coherently. This world of words and ideas, helps detach memory, attention and thought from perception, and unfolds them into a more abstract, critical and voluntary self-awareness (1978:31ff.).

The ape must see his stick in order to pay attention to it; the child may pay attention in order to see it When this occurs, we can say that the field of attention has detached itself from the perceptual field and unfolded itself in time, as one component of a dynamic series of psychological activities This emerging psychological system in the child now encompasses two new functions: intentions and symbolic representations of purposeful action. [1978:36-7]

This knowledge is highly concrete at first. At the age of two, concepts were syncretic conglomerations of chance impressions of an affective and amorphous character that have no definite meaning or reference. But at a later age the child's concept coalesce into a complex of factual attributes from personal experience which contains an awkward fusion of general and particular features called "complexes" or "prototypes" (1962:52ff.).

When formal instruction about history, geography, physics, etc. comes, these conceptions grow downward, giving abstract, logical structure to the adolescent's spontaneous and concrete conceptions (1962:82ff.). Concepts develop precise, abstract definitions within hierarchically structured conceptual fields, while retaining their rich, concrete associations (1962:52ff.). From this symbolic reconstruction more abstract, systematic and coordinated thought arises.

School instruction induces the generalizing kind of perception and thus plays a decisive role in making the child conscious of his own mental processes. Scientific concepts, with their hierarchical system of interrelationships, seem to be the medium within which awareness and mastery first develop Reflective consciousness comes to the child through the portals of scientific concepts. (1962:92)

Thought and language have now fused into a powerful, analytical form. Full analyses of possibilities can now bring more planned behavior (1962:52ff.).

Evidence of this powerful role that writing and formal education plays in the development of logical operations comes from extensive cross-cultural research. This research shows that it is only with this Western style of education that thought proceeds from concrete to formal operations (see Lloyd 1972:137 or Hallpike 1979:passim). Vygotsky, writing prior to much of this research argued as follows:

Buhler's experiments indicate that the practical activity of the young child prior to

speech development is identical to that of the ape, and Guillaume and Meyerson suggest that the ape's behavior is akin to that observed in people . . . deprived of speech. [1978:23]

Vygotsky agrees with Piaget that action precedes words in development. "The word was not the beginning – action was there first; it is the end of development, crowning the deed!" (1962:153). But he goes much further than Piaget in stressing the interaction of thought and language. Here his approach is thoroughly dialectical (1978:58ff.) from beginning to end.

Although practical intelligence and sign use can operate independently of each other in young children, the dialectical unity of these systems in the human adult is the very essence of complex human behavior. Our analysis accords symbolic activity a specific organizing function that . . . produces fundamentally new forms of behavior. (1978:24)

In this dialectical spirit he says, "The relation between thought and word is a living process: thought is born through words. A word devoid of thought is a dead thing, and a thought unembodied in words remains a shadow" (1962:153). Through their dialectic, words come alive and gain direction, while thoughts become precise and articulate.

Bruner

Bruner sympathizes with both Vygotsky and Piaget. Like Vygotsky, he goes further than Piaget in stressing the transforming role of language upon thought. Using stages that parallel both Vygotsky's and Piaget's, Bruner traces cognitive development from the "enactive" representations within action sequences, to the "ikonik" representations of images, to the "symbolic" representations of language and other tools.

Bruner thus sees the course of cognitive development as being determined by our evolving *modes of representation*, namely, *action, images and symbols*. This development is seen as a progression: we are unlikely to revert to the lower, more cumbersome means of representation once knowledge is represented symbolically. Language fosters intellectual growth because it allows children to articulate their experience, inspect these articulations, and perceive contradictions in them.

In effect, language provides a means, not only for representing experience, but also for transforming it Once the child has succeeded in internalizing language as a cognitive instrument, it becomes possible for him to represent and

systematically transform the regularities of experience with far greater flexibility and power than before (1964:4)

Bruner feels that although images (ikonic representations) have greater vividness and detail, they're limited because of their largely static nature. This leads the child to, for example, approach conservation problems on the basis of single, *directly observed* properties. He will, for example, mistakenly judge that the amount of water changes as it's poured from container to container – simply because the height of the water line changes. Symbolism frees thought from such limitations and brings greater flexibility and coordination to conceptual processes.

Symbolism's Role in Human Development

From what's been said above, we can begin to see how this synergy of language and thought makes humans so unique. It creates symbolic thought and thoughtful language. Our language differs from animal language in that it is more intelligent and voluntary, like the rest of our behavior. Our more powerful intelligence bursts the instinctual links between signs and referents, and replaced them with conventional links. This makes human language more flexible, informative and thoughtful. Literally anything can have a name.

As language becomes more thoughtful, thought becomes more symbolic. While the thought of other animals is bound to their immediate environment, language helps to emancipate our thought from perception. It allows us to isolate perceptual features, abstract them, and generalize them into systems of concepts. This allows more abstract, systematic and coordinated thought. We can talk about what's absent, about the future, about the past, about possible worlds. In this way, thought is no longer immediately bound to perceptual stimuli: it is *mediated* by symbols and ideas, as Cassirer and Vygotsky have noted. We can represent and manipulate the world internally through symbolic thought.

Accompanying this symbolic nature of our language is syntax. Use of syntax requires additional conceptual development over that used for symbols. Apes have been taught to use symbols extensively, but haven't been successfully taught effective grammars. By contrast, humans begin to employ symbols at one year and grammar by their second year. Syntax allows us to say many things with the same symbols: it allows us to relate concepts in endless ways. Together, symbolism and syntax give human language tremendous power. They enable us to talk freely about *anything in any way*, even counter-factual ways. We can name things, describe them in their absence to others, and relate them together in our minds. We can construct possible worlds in our minds just like a child playing with tinkertoys on the floor.

Symbolic language is essential to our rationality. The abstracting powers of its symbolism and the relational powers of its syntax are the basis of our reasoning powers – of our ability to discern and manipulate abstract class relationships. Written language enables us to better accumulate and scrutinize knowledge. This led to systematic bodies of knowledge and formal education, which in turn fostered more systematic and coordinated forms of thought capable of fully analyzing possibilities and of critically reflecting upon their own operations.

Language in its written form is essential to civilization, for such complex forms of society require intricate coordinations of individuals. In fact, as we'll see, reason and civilization developed together by means of written language. It brought minds and societies closer together into more systematic forms. It allowed us to internalize more complex cultures, and to externalize thought for social criticism and elaborations. It produced more organized, resourceful and interactive minds and societies. The result was more richly meaningful, elaborately planned and complexly channeled forms of life.

Language is thus our most powerful and most unique tool. While most tools are turned outward to master the world, language is turned inward to master ourselves, our inner potentials. It makes our action more reflective, voluntary and planned. It allows us to construct complex structures of society and thought, so it's the basis of the most uniquely human forms of society and thought. It leads out of the confined world of beasts and into the wide open possibilities of civilization and reason. It is what makes humans so unique.

Symbols Mediate Thought and Perception

Man thus differs from beasts in that his thought isn't enslaved by perception, and his action isn't blindly impulsive: they're *mediated* instead by a symbolic universe of endless possibilities. This raises another aspect of the synergy of thought and symbols, namely, that symbols mediate between thought and perception just as images were seen to do in the previous chapter.

However, the synergy of thought and symbols differs profoundly from the synergy of thought and images, and it does so because the properties of symbols and images, themselves, differ profoundly. Symbols are abstract and general, and represent things by mere convention, while images are concrete and particular, and represent things by vivid pictorial resemblance. Thus, while images excel at representing specific spatial scenes in great detail, symbols excel at representing generalized information, abstract reasoning, and narrations of events.

To more fully establish this claim, let's look at just how *pictures, even in series, are comparatively unwieldy ways of conveying general information, abstract reasoning, or narrations of events*. The following account is based partly around Brann (1991:396-412).

It is the very concreteness and particularity of pictures that makes them less suitable for conveying general information than symbols, whose meanings are abstract and general by nature. Images can be made to represent general classes, but we must then be told verbally what features of the image are being abstracted for this purpose (e.g., does a picture of a poodle represent all dogs, just poodles, or all four-footed animals?). Similarly, we use pictures to convey general information about economies, demographics, etc. in the form of diagrams, tables, etc. But if we do so, these pictures rely on the text for their labels and contexts. It may be possible to specify such matters pictorially, but it can often be quite awkward to do so. Symbols are thus superior to images in conveying general information and accumulating it into bodies of knowledge.

Similarly, pictures are inadequate means of conveying reasoning (e.g., arguments and explanations). Reasoning involves discerning abstract relationships between classes. But images are, as we've just seen, concrete and specific, and represent in abstract and general ways only by relying upon (or taking on attributes of) symbols. For example, Venn diagrams are useful in logic only when each circle is labelled so that we know what concept it refers to, and when the convention relating the positions of these circles to conceptual domains is known. Although these circles picture relationships like images, they do so only in highly conventionalized ways, like symbols.

Pictures in general are inadequate as a basis for reasoning because of their ambiguity. As previously mentioned, they lack a rigorous syntax to unambiguously specify relationships between elements, like in propositions. Because picture surfaces are spatially continuous rather than discrete, as in propositions, the number, identities and relationships of subjects in pictures can be difficult to specify unambiguously, compared to those in propositions. Nor do pictures combine readily like propositions into a calculus. Pictures alone cannot express negation,¹⁶ disjunction, hypotheticals, and they cannot contradict each other. In this way pictures have difficulty in matching the precision and flexibility of symbolic language in these contexts.

It is interesting to note here how the pictorial nature of the written Chinese language inhibited analyses of deductive forms in classical Chinese philosophy. The "Logicians" or "School of Names" was small and without influence beyond its time. China is noteworthy in that its writing system persisted in using pictograms (which represent objects by their pictures) and ideograms (which represent ideas difficult to picture, such as abstractions, by extending the meaning of pictures in various ways). This may be because China's political unification embraced so many diverse dialects, making the shift to phonograms (which symbolize various sounds in speech) and alphabets (which symbolize phonemes) impractical. This unified Chinese culture across many dialects down through history, but it seems to have inhibited the development of formal logic. Its pictograms and ideograms rely on word order and particles, but lack inflections, which makes it comparatively difficult to lay bare grammatical structures.

Reasoning is thus based on symbolic language rather than images because of the abstracting powers of symbolism and the relational powers of its syntax. These foster precise, flexible trains of thought of great abstraction. As noted by Bruner above, symbols emancipate thought from concrete, perceptual features and lead it into an highly abstract arena defined by precise, systematic, coordinated, flexible relationships.¹⁷

The precision and flexibility of symbols also explains why they are more efficient than images for narrating events. The comparative ambiguity of images means that they often require interpretation, and without this their ambiguity can become compounded as the narration unfolds. Also, pictures are limited in what they can say, especially when it comes to intricate plots and generalized background information. While speech is spread out in time and is suited to giving precise information about sequences, pictures are spread out in space and are suited to giving precise information about spatial arrays. Speech is less effective at giving precise information about spatial arrays, while pictures are less effective at giving precise information about plot sequences.

An example of the ineffectiveness of images in narrating events is a foreign film without captions, or an indigenous film with sound. We would understand simple action sequences, scenery, visual humor, etc., but would struggle to grasp the whys and wherefores of events. A Charlie Chaplin film would be easier to understand than a murder mystery in such circumstances. This is why early silent films relied on captions when they ventured outside of slapstick. This is also partly why silent pictures gave way to talkies as soon as technology permitted: to dispel ambiguity and increase flexibility and complexity in story-telling.

Images must often rely upon, or take on attributes of symbols in order to tell stories effectively. It is easy to say “Mary loves Bill,” but a picture can’t depict this easily without background contexts. A picture of Mary that’s meant to show her with love in her eyes might just appear like Mary was giving Bill a funny look. We could rely on the convention of putting a cupid into the picture, but this is as much symbolic and conventional as pictorial. Of course, a series of pictures showing Mary devoted to Bill could convey the message, but the point is that it’s much easier to simply use a few short words here.

In sum, then, pictures are rather unwieldy ways of conveying general information, abstract reasoning, or narrations of events. The overall point is that pictures are often relatively unwieldy ways of communicating in general. They can’t do all the work we have come to require of language. It’s true that pictorial representations are ideal ways of communicating in one way: they actually resemble what they stand for. Thus if we need to communicate with someone who doesn’t share our language, we can resort to gestures, drawings or pointing. But the problem is that it’s difficult to picture everything we need to communicate about.

The fact that pictorial representation is ideal for primitive communication, but unwieldy

for anything more extensive, is why authors like Hewes speculate that speech evolved out of, or was preceded by gestural language.¹⁸ A similar, but less speculative hypothesis is that written language evolved out of pictures. The rationale here is that while pictures most likely predate writing because they so clearly resemble what they stand for, it's highly awkward to try to pictorially represent everything. A much more efficient means is simply to symbolize speech sounds by arbitrary conventions which tie groups of sounds to things we need to talk about. This brings greater efficiency, flexibility and power to writing. That this is what actually happened can be seen by looking to the evolution of writing.¹⁹

Vygotsky found (1978:112-6) a similar evolution from pictures to written language in the development of children. Children progress from simply making mere marks on paper to recognizing that their marks can signify something. Early drawings embody stories children give in speech. They function like verbal conceptions in capturing the essential features of objects rather than faithfully depicting them, i.e., they are symbolic as well as pictorial. The transition from pictures to writing continues as the naming of drawn objects shifts increasingly toward the beginning of the drawing process. Later, they learn that they can draw not only things but also speech, itself. This progression was observed experimentally when children were asked recall phrases with the help of a pencil and paper. Scribbles initially served as mnemonic devices. These were gradually replaced by pictures, and finally by true symbols, once number, color and form were introduced into the phrases.

In sum, then, the synergy of thought and symbols differs from the synergy of thought and images. Symbols mediate between thought and perception just as images do, but their intermediate roles differ due the inherent nature of symbols and images.²⁰ Symbols are abstract and general, and represent things by mere convention, while images are concrete and particular, and represent things by pictorial resemblance. Images thus excel at representing specific spatial scenes in detail, a cumbersome task for language. On the other hand, symbols excel at representing generalized information, abstract reasoning, or narrations of events, which are cumbersome tasks for images due to their inherent ambiguities and lack of effective syntax.²¹

In the synergy of thought and images, thought calls images forth and gives them meaning and direction, for images on their own are lifeless. Images, in turn, bestow clarity, concreteness and spatiality upon thought, so that it can better ruminate about experience, formulate theories, test possibilities, rehearse actions, assess feelings, etc.

Similarly, in the synergy of thought and symbols, thought calls symbols forth and gives them meaning and direction, for symbols on their own are also lifeless. Symbols, in turn, abstract and organize perceptual features into conceptual systems, thus bringing coordination, flexibility and mobility to thought.

This is where the *mediating* role of symbols is perhaps most apparent, for it means that

humans are no longer tied to their *im-mediate* perceptual environment. It is this special gift of symbolism that, perhaps more than anything else, gives humanity its uniqueness. It gives us the ability to abstract from the world and to rebuild it according to our own aspirations, it gives us the ability to actually plan our own future – the ability to master the possibilities in both our world and ourselves. “The use of signs leads humans to a specific structure of behavior that breaks away from biological development and creates new forms of a culturally-based psychological process.” (Vygotsky 1978:40)

There is thus a true synergy of thought and symbolism, a fusion into a new, unprecedented form, which enables them to do together what they’d never been able to apart. Without thought, language is mindless babble or mere emotional outcrying; without language, thought is disorganized and undisciplined. But with their fusion, thought becomes rational and language becomes thoughtful. In this way, thought allows us to master the potentials of language through the exploration of symbolism and syntax, while language allows us to master the potentials of our minds by accumulating knowledge, reflecting on assumptions, analyzing options, etc.

So while symbols and images both mediate thought and perception, they do so in different ways. Images bring to thought what symbols cannot easily bring: *spatiality and concreteness*. Similarly, symbols bring to thought what images cannot easily bring: *abstraction and organization*. Images and symbols are thus not readily reducible to, or interchangeable with each other: it’s as hard to represent faces with words as it is to convey arguments with pictures.

Furthermore, thought isn’t reducible to either images or symbols, for we often have to struggle to put thought into words and images (which can be seen as thought’s mediums). But articulating thought into words and images not only brings it out of the shadows, but also transforms it in powerful ways by giving it form and structure. So, *thought, symbols and images are genuinely independent faculties which are engaged in a creative synergy together*.

Epistemological Implications

The argument above, that thought and language are genuinely independent faculties engaged in a creative synergy together, is incompatible with traditional empiricism and rationalism. Empiricists claim that we passively assimilate our ideas from our environment, especially our social environment. Whorf’s claim that thought is determined by language, reflects this empiricist view that thought is determined by our (social) environment. By contrast, the argument above has been that thought and language (or mind and society generally) develop together synergistically. This treats thought as a *constructive* process. Thought actively constructs language and society by *interacting* with them. It’s through this genuine dialog of thought and language (and mind and

society) that we come to master the potentials of both. Without this active role for mind, it's difficult to see how culture could develop, or even change.

The synergistic approach above is also skeptical of rationalism's stress on innate mental structures. Thus, Chomsky's postulation of an elaborate innate grammar was seen as unnecessary and uneconomical, for grammar acquisition is more simply explained as a matter of learning through manipulation and insight, in the same way that we learn the principles of any tool. Again, this represents an interaction of thought and language, in that children construct their grammatical categories through their manipulation of language and growing insights into its principles.

In general, according to this synergistic or "interactionist" approach, knowledge (including knowledge of language) is neither determined by innate factors nor passively acquired from the environment, but is instead *actively constructed* through probing interaction between thought and environment, and mind and society.²² This once again drives home the point that the roots of imagination are not static, immutable phenomena, but are instead engaged in *dynamic, evolving* synergies which profoundly *transform* their character over the course of their histories.

Vygotsky emphasized these deep transformations involved in the historical relationship of thought and language.

Although practical intelligence and sign use can operate independently of each other in young children, the dialectical unity of these systems in the human adult is the very essence of complex human behavior. Our analysis accords symbolic activity a specific organizing function that penetrates the process of tool use and produces fundamentally new forms of behavior . . . the most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge. (1978:24)

Such processes aren't steady, linear accumulations of changes, but much more complex events, often of a revolutionary character.

Our concept of development implies a rejection of the frequently held view that cognitive development results from the gradual accumulation of separate changes. We believe that child development is a complex dialectical process characterized by periodicity, unevenness in the development of different functions, metamorphosis or qualitative transformation of one form into another, intertwining of external and internal factors, and adaptive processes. (1978:73)

Here, again, this approach conflicts with rationalism and empiricism. Both lend

themselves to the view that all humans think in basically the same ways, differing only in the content of their beliefs, values and classifications, but not in their fundamental thought operations. Rationalists would attribute this “psychic unity of mankind” to the innate ideas and powers of reasoning they ascribe to all men, while empiricists would attribute it to the fact that men are shaped by the same principles of associations and differ only in their experiences. This “psychic unity” hypothesis pervades modern anthropology and sociology.

By contrast, Vygotsky argues that “history is characterized by changes that are both qualitative (changes in form and structure and basic characteristics) and quantitative.” Similarly, Bruner, in his foreword to Vygotsky’s *Thought and Language* notes a persistent emphasis in Vygotsky on “man’s capacity to create higher order structures that, in effect, replace and give new power to the conceptual structures that one climbed over enroute to higher order mastery.” He cites as an example the “capacity to impose super-ordinate structures in the interest of seeing things more simply and deeply,” which Vygotsky argues in chapter five.

A similar view is found in Piaget, with his accounts of how thought develops onto progressively higher planes, each with more expansive levels of organization and greater levels conceptual power and mobility, and each capable of solving qualitatively new kinds of problems (e.g., conservation problems) than those it was able to grasp before.²³ As we’ll see in the following chapters, there has been a thorough transformation in the ways humans comprehend and control both their outer world and their inner selves. The result has been a qualitative transformation of the human psyche, with the emergence of new powers for self-awareness, self-mastery, and free will.

Thus, the need for an *historical* approach to the mind, says Vygotsky.

The concept of a historically based psychology is misunderstood by most researchers who study child development. For them, to study something historically means, by definition, to study some past event. Hence, they naively imagine an insurmountable barrier between historic study and study of present-day behavioral forms. To study something historically means to study it in the process of change; that is the dialectical method’s basic demand. To encompass in research the process of a given thing’s development in all its phases and changes – from birth to death – fundamentally means to discover its nature, its essence, for “it is only in movement that a body shows what it is.” (1978:64)

The relationships between thought and language, and mind and society as a whole, cannot be understood as static and immutable relationships. The same is true of all the synergies underlying creative imagination. They are dynamic, evolving relationships which undergo historical transformations that must be understood in historical terms. These histories will be

covered below in part two.

THE SYNERGY OF REASON AND INTUITION

Reason and Intuition

So far in this chapter we have looked at the fusion of thought and symbolism into various stages of symbolic thinking, which led thought out of purely *intuitive* forms into more systematic, *rational* forms. This concluding section will look at how reason entered into a synergy with this intuitive thought from which it emerged. This synergy is particularly important because it represents the pinnacle of creative thought, which is the broadest, most encompassing form of imagination.

Reasoning can be viewed as the evaluation of arguments and evidence according to objective rules (as contrasted with passion, faith, experience, etc.). As such, it is traditionally divided into two kinds of inference, namely, deduction (where a specific conclusion necessarily follows from general premises) and induction (where a general conclusion probably follows from specific premises). However, actual thought processes are more abbreviated and implicit than this suggests. What reasoning normally amounts to is objective generalizations or analyses of conceptual relationships. Thus we can say that *reasoning is thinking which systematically conforms to rules of inference*. Reasoning is often also seen as step-by-step thinking, but such thought often doesn't conform to rules of inference, and can thus hardly be used to define reasoning.²⁴

Because kinds of intuition are not so neatly classified, intuition is perhaps better characterized by examples. Such examples are the recognition of faces, the gut feelings we have that something is amiss, the hunches we have about people's moods and intentions, the groping and flashes of insight involved in problem solving, the quick impressions we form in areas where our judgment is practiced, the mystical experiences we have in the presence of God or nature. Such apprehensions or impressions seem like perceptions in that they are direct, unmediated, global, self-evident, and tacit.

Intuition is an ambiguous term. It's used as a catch-all term for all forms of *a-rational thinking* (which don't conform to rules of inference). But it's also equated with *immediate apprehension* of relationships or facts (as opposed to thinking mediated by steps, as is typical to reasoning). These don't coincide, because even reasoning can involve immediate apprehensions (especially for the skilled reasoner).²⁵

For our purposes, *intuition is best defined as a-rational thinking*. Immediate

apprehensions of facts or relationships (including those involved in reasoning) will be treated as “intuitions” only in a secondary sense. Again, *reasoning is defined as thinking which systematically conforms to rules of inference.*²⁶ Thus, hunches and flashes of insight are typically examples of intuiting in our primary sense, but not of reasoning (at least not until such hunches or insights are incorporated into trains of thought which systematically conforms to rules of inference).

We will, in fact, find it useful below to distinguish between two kinds of intuition: direct and indirect (analogical, fluid) intuition. Sometimes our comprehension of a fact or relationship is fairly straightforward and direct, but other times the solutions require that we step back and take indirect, adventurous approaches. It is when intuition must turn from straightforward to unusual approaches (i.e., when ideas don’t fit into existing frameworks and these frameworks must be restructured) that the intuitive process become more fluid. Thus, *fluid intuition* is a particular class of our ordinary intuitions. While both direct and indirect (or fluid) intuitions play roles in creative thought, we’ll see that fluid intuition plays an especially central role here.

Intuition is in fact the most pervasive of all forms of thinking, even in the narrow sense of “a-rational thinking” being used here. It’s contrasted with conditioning (from which it emerged) by its ability to actively grasp relationships,²⁷ and with reason (into which it evolved) by its inability to systematically follow objective rules. Yet it is an indispensable foundation of all organized and creative thought due to its ability to mentally “feel out” situations and relationships. As such, intuition is found in beasts and humans, in practical and theoretical thinking, in all the arts and sciences, and in concrete and abstract thinking.²⁸ Perhaps the only place that it has no role whatsoever is in present-day computers, whose “thought” is rigid, narrow and slavish.

The Independence of Reason and Intuition

Paralleling the approaches taken to the other synergies covered above, the aim below will be show that reason and intuition are *independent* of each other, and yet interact together in a creative *synergy*. Their independence follows, of course, from our definitions. But these definitions are just conventions: the real point is that they’ve been chosen because of an underlying psychological difference. Our real task is thus to establish that intuition and reason are psychologically independent.

Purely concrete intuitive thought is based upon concepts which are rich in concrete experience, yet comparatively disorganized in their overall structure. These concepts are really just complexes of factual attributes from personal experience which contain an awkward fusion

of general and particular features. Such concepts aren't logically structured, but are instead structured by associations of various kinds.

Analyses of these associations have flourished since the eighteenth century. Hume classified them in terms of "Resemblance, Contiguity in time or place, and Cause or Effect."²⁹ More recently, Osgood (1957,1962) investigated the associations between concepts by asking subjects to use his semantic differential technique, which rated concepts along a series dimensions or scales. He found that the most fundamental dimensions that people relate concepts along are evaluation, potency and activity. "Evaluation" refers to the way we deem things good or bad, pleasant or unpleasant, sacred or profane, etc. It seems related to the benefit things bring to us. "Potency" refers to the way we deem things as strong or weak, large or small, heavy or light, etc. It seems related to forces exerted upon us or by us. "Activity" refers to the way we deem things as active or passive, fast or slow, sharp or dull, etc. It seems related to the rapidity of events, and is more temporal in nature, while potency is more spatial in nature.³⁰

In addition to these spontaneous associations between concepts, our minds contain the more rigorous relationships connected with reasoning. These latter relationships appear (as Vygotsky notes) once language, in the form of writing and formal instruction, reconstruct our spontaneous conceptual relationships into the more abstract, hierarchically structured, and systematically organized forms necessary for reasoning. These more organized conceptual structures are embodied, e.g., in scientific taxonomies and other synopses of categories (Roget's *Thesaurus* is an example). In this process, concepts develop precise, abstract definitions within hierarchically structured conceptual fields, while retaining their rich, concrete associations.

This detaches thought from perception, and unfolds it into coordinated symbolic structure, which supports more flexible, mobile, and reflective thought. It is the greater conceptual mobility and the more systematic nature of this new, rationally directed form of thinking that is the basis of its *independence* from its concrete intuitive roots. It is independent of these roots, in that it is capable of greater conceptual mobility and self-reflection, and more deliberate control and autonomous structure.

In this way, the emergent structures involved in reasoning (abstract, hierarchical, coordinated schemas) produce the emergent skills involved in reasoning (powers of self-reflection, critical analysis and systematic coordination). It is these emergent structures and skills which give reason its autonomy from other forms of thought, which are much less organized and coordinated by comparison.

But this doesn't mean that intuition was superseded by reason in human development. The autonomy of intuition is evident from the fact that much of thought remains comparatively prelinguistic and pre-rational in its operations. Ideas don't typically emerge in a linguistic or logical form, but rather, in a richly imagistic, holistic and chaotic (intuitive) form. Trying to

commit these ideas to a rational, verbal form too soon can all too often stunt them. This rational, linguistic form of our insights is largely a postscript of creative thought, which is typically vague and nebulous, and often imagistic, in its most creative phases.

Einstein, for example, describes this creative process as being visual and muscular rather than verbal and rational.

The words or the language, as they are written or spoken, do not seem to play any role in my mechanism of thought. The psychical entities which seem to serve as elements in thought are certain signs and more or less clear images which can be “voluntarily” reproduced and combined . . . this combinatory play seems to be the essential feature in productive thought – before there is any connection with logical construction in words or other kinds of signs which can be communicated to others The above mentioned elements are, in my case, of visual and some of muscular type. Conventional words or other signs have to be sought for laboriously only in a secondary stage, when the mentioned associative play is sufficiently established and can be reproduced at will. (Hadamard: 1945, p.142)

The Synergy of Reason and Intuition

So far we’ve seen that intuition and reason are independent of each other in that thought processes typically exhibit rational parts which are organized and coordinated, and intuitive, a-rational parts, which are vague, holistic and chaotic. That there’s also a creative *synergy* between these parts is apparent when we pick where we left off immediately above in our description of creative thought.

Here we find that, typically, after ideas emerge in an intuitive form, they’re then put into a more rational form. That is, the initially vague and holistic idea, like a cloud shedding a shower of raindrops, is put into words and becomes serialized and logicalized. In this way, the structure of memory, itself, becomes logicalized by language. It becomes more hierarchical and abstract. Therefore, symbolism affects the very nature of conceptual relationships, and thus the character of *intuition itself*, which begins to dwell in a more abstract, organized realm. Thus, while Einstein’s insights didn’t appear in the form of reasoning or language, they nonetheless couldn’t have arisen without reasoning and language having prepared the way. This indicates that while the *innermost* stages of creative imagination are often intuitive, the *outermost* stages involve rational thought.

Thus, the old strictly intuitive thought forms didn’t disappear, they were simply incorporated into a new, more vital form which harnessed their richly synthetic imagery with reason’s analytical rigor, to form a creative synergy of synthesis and analysis. Apart, reason and

intuition can devolve into (respectively) formal sterility or aimless reverie, but together their flight becomes guided. Thus guided and controlled, thought can boldly yet methodically soar into uncharted domains, and do so without getting hopelessly lost in the process.

So, in this synergy, reason brings organization and coordination to the richly synthetic, but comparatively anarchic modes of intuitive thinking. Reason allows thought to control its own operations in a more systematic, self-conscious manner. The synergy is thus between *prereflective, spontaneous, chaotic thought*, and *reflective, deliberate, systematic thought*. The latter acts upon the products of the former, further elaborating and systematizing them. This parallels how focal attention operates upon the products of pre-attentive perception. In both cases, the initial products are global, crudely defined, fleeting and evanescent, and in both cases if no further elaboration occurs these products slip away and dissipate like a dream, and are lost to memory.³¹ In both cases the initial level of processing seems to be parallel and involuntary, while further elaboration is serial and systematic.

The left and right hemispheres of the brain seem to have specialized in these two different modes of thought. The left brain specializes in verbal, rational thinking, while the right brain specializes in visual-spatial thinking, recognition of moods and metaphors, projection of movement, and other tasks so essential to our animal existence. Evidence of this comes from extensive research with both brain-damaged and split-brain patients. This difference in organization of the two brains seems to extend to differences in the ways they remember childhood events (Blakeslee 1980:117ff.).

The personalities of the left and right brain also seem to differ, with the left brain being coldly intellectualistic and the right brain being more primitively emotional. For example, people with right-brain damage tend to react positively and indifferently to their injury, while people with left-brain damage tend to react negatively and emotionally by crying, swearing, etc. (Gianotti 1972.). Also, people with right-brain damage are capable of understanding the literal meaning of sentences, but not the differences in meaning conveyed by these sentences when spoken with different emotional tones (Heilman 1975, Gardner 1973). Another example of personality differences comes from the case of a split-brain patient whose speaking, left brain claimed that he wanted to be a draftsman, while his comparatively inarticulate, right brain claimed that he wanted to “automobile race” (Gazzaniga 1978).

Apparently, we dream with the right brain, for stimulation of the right brain induces dreamlike states, while damage of the right brain terminates dreaming and visual imagery (Humphrey:1951). This dreaming, emotional, animal self thus partly resembles the Id that Freud postulated. Yet it’s “unconscious” only in the limited sense that it specializes in the rich, chaotic kind of thinking we’ve called “intuitive” above – and in that it’s often dominated by the speaking self due to the overriding importance of the rational, verbalized relationships that constitute our

planned, civilized existence. So it seems legitimate to personify these two different aspects of personality in poetic terms as the rational, “*speaking self*” and primitive, “*dreaming self*.”

These two styles of thinking cooperate in their own special ways in the creative process. The right brain excels at fast, parallel processing which yields holistic images, rather than logical, serial processing which yield systematic trains of thought (compare imagining a room’s contents to describing it in words item by item). Thus, the right brain isn’t so constrained by fixed serial orders, gaps in details, or literal differences, features which can thwart logical, serial processing. Split-brain research shows, for example, that only the right brain can recognize patterns from fragments or metaphorical relationships (Blakeslee 1980:117ff.). It extrapolates to fill in gaps in flexible ways, and discovers connections which were disguised or hidden. This is the basis of creative synthesis. Purely deductive thought, by contrast, can’t find new relations: it merely draws out what is contained in existing relations. This is the basis of analytical thought.

But it’s this specialization in flexible, metaphorical, analogical thinking that renders the right brain incapable of systematically and logically evaluating its products. This why the creative act is a complex activity with different stages (or more likely loose quasi-stages), combining both *logical analysis* and *intuitive synthesis*. In fact, the widely quoted classification by Wallas (1926) and Patrick in the 1930s (later confirmed by others), indicates that there are often four loose stages to creative thought.

Creation begins with a period of *preparation* in which one analyzes the problem, narrows it down, and becomes thoroughly familiar with all its angles, obstacles and promising avenues. This is followed by a period of *incubation*, in which partial, suggestive ideas begin to emerge. In this context, Galton speaks of a “presence chamber” where full consciousness holds court,” and also “an antechamber full of more or less allied ideas, which are situated just beyond the full ken of consciousness.” (1883:148) Although some would say that during this stage unconscious restructuring of the problem actually occurs, others find little use for such talk of unconscious thought, and attribute such restructuring simply to temporary absence from the problem, which frees the mind from previous, blinding preconceptions. This second stage is followed by a period of *illumination*, where flashes of insight occur and hidden connections are discovered. Compare how flashes of heat lightning temporarily illuminate adjacent cloud crests in the night sky, thus partly revealing what was previously hidden. Goethe compared these flashes of insight to the arrival of a foreign visitor.³² This echoes the tradition of attributing poetic insights to divine muses or other external sources. But it needn’t be seen in such miraculous terms: it can be seen more simply as a recombination of what already existed in new ways, or a flowering of preexisting potentials. The fourth and final stage is a period of *verification* in which the insights above are evaluated, modified and organized into a coherent, final solution.

Thus, creation is oftentimes a laborious, multi-staged process. It’s interesting that while

acts of creation are, as the homily says, “99% perspiration and 1% inspiration,” they often comes in moments of relaxation, especially at the end of a long, laborious day of analysis. In these moments of relaxation, the mind has greater perspicuity and freedom. It isn't wholly submerged in the clutter of details and rigors of analysis that surround us as we delve into a problem. Removed from this clutter, the mind can leisurely withdraw to view the larger features of the problem's landscape. With this freedom from detail and the rigors of analysis, the mind is free to roam, shift perspectives, and see new connections.

Again, these stages shouldn't be taken as a rigid formula. As, Thompson (1959) notes, creativity is too highly personal a matter to fit any such formula. In fact, the stages above aren't always sequential. They can occur pretty much all together in a spurt of creative activity, or thought can move back and forth between the stages. Arguably, some creators toil systematically over their work, like Beethoven reputedly did, while others are more spontaneous, like Mozart supposedly was.

The main point is that it's the first and last stages above (preparation and verification) that most involve rational analysis, while the inner stages (incubation and illumination) are the ones that most involve intuitive synthesis. This synergy consists of a nesting of our *wild, sensuous* mode of thought within our *civilized, rational* mode of thought. It represents the synergy of analysis and synthesis that gives us the creative ability to break our world down in thought and build it up anew according to our aspirations. In sum, the rational mode is more *disciplined, organized and precise*. By contrast the intuitive mode is *roving, anarchic and vague*.

I've referred to the latter mode of thought as “*fluid intuition*.” We've seen that in the inner stages of creativity, thought seems to relax strict constraints so that it can flow freely and spontaneously in new directions. This more fluid thought takes the form of the vague visual imagery and intuitions noted in the Einstein quote above. Once freed from deliberate control, thought can revert to looser intuitive associations. Pioncare likened this to atoms colliding, unhooking and recombining in new ways (McKellar 1957:116). Thought wanders adventurously around problems, rather than proceeding in careful, deliberate ways that systematically converge upon a solution. This somewhat dreamy “what if” spirit can enable us to bypass the constraining biases that often block creativity. Progress often requires a restructuring of viewpoints or a shifting of perspectives upon problems. This often even means defying seemingly rational constraints which may turn out to merely be (upon hindsight) rationalized prejudices.

This isn't to say that creativity is some exotic form of thinking qualitatively different from ordinary thought which creative “geniuses” excel at. Instead the view above fits arguments by Perkins (1981), Clement (1989), Weisberg (1993), etc. that highly creative people simply use ordinary thinking, i.e., thinking about experience in both rational and analogical ways. They don't use extraordinary thought processes such as unconscious thought, sudden leaps of insight

that wholly transcends past experience, or extraordinarily flexible thinking emancipated from habitual thought. Instead their thought is well rooted in past experience. They've mastered their field and go on to extend it by reasoning, getting feedback, and thinking analogically. People vary in creativity due to different levels of knowledge, motivation, and luck. They may have narrow talents in music, mathematics, etc. – but no general modes of thought shared by all highly creative people that constitute creative “genius”. My view above agrees with this, and just adds that ordinary thinking involves both careful, systematic reasoning based on evidence and more spontaneous, adventurous intuitions based on analogy. While the latter involves fluid, intuitive thinking, it doesn't involve any dubious claims that highly creative people excel at divergent thought, remote associations or other processes that seek to break away from past experience.

These fresh, adventurous thinking described above is what we expect of artistic creation; but the unorthodox approaches of open, unconstrained thinking also are the stuff of *scientific* creation. Popper sees science as a self-critical venture of tentative conjectures and refutations. Healthy science is a battle of ideas which *should* be continually open to new and unorthodox ideas. He sees these changes as being evolutionary, in that they restructure old views by preserving what's good in them and rejecting what's bad.

Kuhn also believes that science involves restructuring of perspectives. But he feels that science is *as a matter of fact* more closed-minded than open-minded. Its perspective changes come through revolutionary upheavals in perspective, as old, outmoded conceptual systems fail to accommodate accumulating observations from the eyes of new scientific generations. So radical are these shifts in paradigms that we can't speak of common understanding, or even of evolutionary progress, except between revolutions (i.e., within paradigms).

Koestler anticipated Kuhn's views on how the history of science is shaped by powerful mind-sets and prejudices.

The progress of science is generally regarded as a kind of clean, rational advance along a straight ascending line . . . [but] the history of cosmic theories . . . may be without exaggeration be called a history of collective obsessions and controlled schizophrenias; and the manner in which some of the most important individual discoveries were arrived at reminds one more of a sleepwalker's performance than an electronic brain's. (1959:11)

An example Koestler gives of how ideas transfix scientists is Kepler's entrancement with the idea that the planetary orbitals align with the perfect solids when they're placed inside each other. This idea remained one of the driving ideas behind his arduous mathematical investigations into astronomy, and his humiliating pursuit of Tycho Brahe's astronomical observations – even though the idea eventually proved entirely wrong-headed. Here is an idea which was both a

motive and, to a certain degree, an obstacle to constructive thought.

Despite their differences, each of these writers agree that science proceeds by restructuring its perspectives. Kuhn and Koestler are perhaps more attuned to how irrational and prejudiced science can be. But they're not wholly incompatible with Popper, for while Popper speculates about how healthy science should be, Kuhn and Koestler speculate about how the history of science really has been.

It is because of this need in creativity for fresh, unorthodox perspectives on old problems, that creative individuals tend to have outlooks that are both skeptical and naive, both destructive and constructive. To either doubt or believe most everything is hardly conducive to creativity. There is, arguably, a child in every creative adult. This child is skeptical of the entrenched and gullible towards the novel. It's perhaps no coincidence that many creative ideas come from younger individuals. They try to *understand* what entrenched views are trying to achieve, but combine this with an almost *naive* receptivity to fresh, adventurous perspectives. The creative individual is thus often one who is able to cross-fertilize between fields. He intrudes as a "foreign visitor" from one culture or discipline into another, and thus often appears at the borders of cultures and disciplines.

Competing Formulations of Creative Imagination

The question "What is creative imagination?" is partly an ideological and epistemological issue. Its dynamic, multi-faceted nature means that it admits of various, *competing formulations*. The issue of the proper balance of reason and intuition in human understanding has in fact been a topic of cultural debate throughout history.

The two poles in this historical debate consist of romantics and mystics, on the one hand, and empiricists and rationalists on the other.³³ The former pole uses an intuitionist epistemology to stress the role of intuition over that of reason and the senses. It sees the other pole (rationalism and empiricism) as too intellectualistic, and claims that true understanding of, and harmony with, our world comes from the more natural, less self-conscious outlooks of children, "noble savages", and mystics. The overall debate goes back to Plato's attacks on poetry in favor of philosophy in the fourth century B.C.,³⁴ and Taoism's attack on Confucian rationalism in favor of intuitive contemplation of nature between the sixth and fourth centuries B.C., as well as earlier Vedic debates between empiricism and mysticism. As we'll see, these views can partly be reconciled by allowing a role for reason, the senses and intuition in understanding our world.

Let us begin by looking at the romantic attack on reason and the senses. Whitman's "Leaves of Grass" contains a typical romantic attack on science.

When I heard the learned astronomer,
 When the proofs, the figures, were ranged in columns
 before me,
 How soon I became tired and sick,
 Til gliding out I wander off by myself
 In the mystical moist night air
 And looked up in perfect silence at the stars.

Blake, too, notes the limitations of science. For example, “There is No Natural Religion” argues that science is limited to reasoning about only what we can see, when in fact, reality is infinite and far transcends science.

If it were not for the poetic or Prophetic Character, the Philosophic & Experimental would soon be at the ratio of all things & stand still, unable to do other than repeat the same dull round over again He who sees the Infinite in all things, sees God. He who sees the Ratio only, sees himself only. Therefore God becomes as we are, that we may be as he is.

For Blake, the chief inlet to knowledge is the Prophetic intuition. It reveals the full nature of reality, which is hidden to science. “The Marriage of Heaven and Hell” reiterates this.

. . . the whole of creation will be consumed and appear infinite and holy, whereas it now appears finite & corrupt. This will come to pass by an improvement in sensual enjoyment If the doors of perception were cleansed, every thing would appear to man as it is, infinite. For man has closed himself up, till he sees all things thro’ narrow chinks of his cavern.

This resembles the mystical doctrine of the *Upanisads* which claims that the eternal element within man is identical with Brahman, the infinite, eternal reality behind the fleeting appearances of the sensible world (the latter is little more than a dreamed aspect of Brahman). Also like the *Upanisads*, Blake feels that we must look in ourselves (“the human form divine”) to discern this spiritual reality in all its infinite, eternal being. By doing so we’re able

To see a World in a Grain of Sand
 And a Heaven in a Wild Flower,
 Hold Infinity in the palm of your hand
 And Eternity in an hour.

We are presently prevented from doing so not just by science, but by reason in all its

forms including religion, morality, law, and all the other disciplines and institutions of civilization. The prophetic character is, by contrast, associated with energy, the primal, creative life force evident in our passions and creative imaginations. “The Marriage of Heaven and Hell” claims that “Energy is the only life . . . and Reason is the bound or outward circumference of Energy . . . Energy is Eternal Delight.” But rather than the form of our lives emerging naturally from our primal energies, it is, instead, artificially imposed upon us by reason. Energy is driven underground, where it is called “hell” by priests, who claim that “God will torment Man in Eternity for following his Energies,” and who brand all our passions as evils.

As the caterpillar chooses the fairest leaves to lay her eggs on, so the priest lays his curse on the fairest joys.

The basic romantic point, then, is that Western civilization is obsessed with reason and the senses, and has closed itself off from true understanding of reality. True knowledge of reality comes not from reason or the senses, but from the direct, intuitive awareness of prophets, mystics, poets, etc. What are we to make of this claim?

To begin with, most knowledge has an intuitive element, even the empirical sciences. Science proceeds by groping with obscure problems it often can't even explicitly state. It probes the unknown with its hunches, groping to give its very observations meaning. The central role of this intuitive dimension casts doubt on the view that science is wholly detached, explicit and objective in nature.

Still, even if empirical knowledge is rooted in intuition, its claim to knowledge rests ultimately upon it being *empirically* verifiable. The question here is thus whether intuition can stand on its own as a genuine and independent source of knowledge. Intuitionists claim such knowledge exists in subjective realms such as the *ethical, spiritual, artistic and emotional*.

In ethics, intuitionism claims that knowledge of what's good, bad, right and wrong are immediately and intuitively self-evident, just like the claim that $x+y=y+x$. Either you see that killing babies in their cradles is wrong or you don't. It's not something that's a matter of rational proof, nor is it an empirical matter of the pain and suffering inflicted upon babies and their families, for this merely points to, but doesn't constitute, the meaning of “wrong” here.

We've just seen how mysticism claims intuitive knowledge of the spiritual realm. A variation of such mysticism is nature mysticism, which is exemplified by Wordsworth's mystical insight in “Tintern Abbey.”

I have felt a presence that disturbs me with joy . . .
A motion and a spirit, that impels

All thinking things, all objects of all thought,
And rolls through all things.

Examples of intuition in art are music and metaphor. Great music transcends the sounds we hear. The exhilaration it produces points to a greater meaning beyond the sounds themselves. The sounds point to the meaning, but don't constitute it. Neither can words fully capture it. Metaphor is another language of the intuitive realm. Metaphors like "time is a river" or "our birth is but a sleep awakening" posit analogies whose full cognitive meaning may transcend literal empirical interpretations.

Intuitive awareness of emotions is also common. When we see a person as being happy, angry, sad, etc., we don't itemize facial features step-by-step, then surmise the mood. In fact, we're only subliminally and tacitly aware of facial features. We'd be hard pressed to itemize them, and if we did then the mood would disappear from sight, just as the music is lost when a pianist begins to concentrate on his fingers. The facial features point to mood, but don't capture its whole meaning on their own.

The obvious problem in all these realms is whether these intuitions can stand on their own as genuine sources of knowledge independent of reasoning and senses experience. The problem is what to do when intuitions conflict in these realms. The intuitionist could say some intuitions are wrong, some are right. But how do we tell which is which? If intuitions can't in the end rule each other out, then they can't corroborate each other either: we're left not with objective claims, but subjective, individual claims. Intuitionism may be plausible as a psychological theory about how we actually make judgments. But as a theory of knowledge it seems to "crumble upon the reality of disagreement."³⁵

So while there may well be a vital role for intuition in disciplines like science, art and religion, its contributions should be recognized as being subjective. In this context, it's worth considering Wordsworth's famous claim in "The Tables Turned," that science distorts and dissolves away the essence and life of phenomena it studies by its obsession with analyzing everything down into its constituent parts.

Our meddling intellect
Misshapes the beauteous forms of things.
We murder to dissect.³⁶

This is a criticism which science itself has taken to heart. The study of personality is an example. Analytical approaches to personality study traits common to many people, and seek to understand the structure and dynamics of personality in general. But, it's often argued that this reductionism neglects the whole person: it isolates parts from the whole; it murders in order to

dissect. Understanding personality, on this argument, requires more holistic (and more intuitive) approaches such as biography – that is, case studies of individual personalities, not abstract traits. This gives generalizations about specific individuals in all contexts of life. It seeks to understand and describe life on its own individual terms without analyzing it to death.

In this way, the holistic approach may suggest insights about the nature of personalities and other phenomena. But this holistic approach on its own is more an art than a science, for it limits our ability to generalize about others, and it is impressionistic, imprecise, intuitive. It lacks objectivity and accuracy that come from controlled, repeatable experiments. Perhaps, then, the role of case studies in science is in, e.g., showing how personalities have emergent dynamics which come into play when certain emotional, social and intellectual elements are brought together. But such insights must be dealt with by science in an objective way. Science can't ignore the individual, but its prime focus must be with the objective generalizations about humans as a whole that specific individuals exemplify.

Thus, we find that there are genuine pragmatic grounds for not opposing reason and the senses against intuition, but for seeing each as necessary to understanding our world. Reason and the senses are the source of objectivity and rigor, but intuition is at the core of creative insight. Intuition is our means to insight and creation into subjective fields like art and religion, but it also has a real role in scientific insights, especially in comprehending individual phenomena. But on its own, intuition is subjective, and stands in need of reason and the senses for its objectivity.

It is worth noting Brann's similar conclusion on the debate between rationalism and romanticism here. She argues against the modern rationalist spirit, but also against dreamy, intoxicated, self-indulgent romanticism. In the end she argues for a "sober romanticism."

So my praise of a life centered on the imagination . . . is romanticism of a very sober sort. In fact "sober romanticism" would be a perfectly acceptable term for the life I mean, a life in which the imagination is suspect except as it is seconded by reflection and fulfilled in action, a life in which the imagination is not worshipped as an autarchic source but understood as the enigmatic conduit of visions. (1981:790)

This is an imminently sensible position. Where her views on this debate might be a bit controversial, however, is in her estimation of Piaget, whom she regards as an arch-rationalist.

Rousseau . . . values the imaginative stage for lacking precisely that socialized rationality which is for Piaget the perfection of cognitive development. Between them, the two Genevans span the range of estimations that the imagination has undergone in our tradition. (300)

As usual, Brann makes a good point. Yet one reason for preferring the rational thought of adulthood to the intuitive thought of childhood is that the latter *incorporates* the richness and vitality of the former, while extending its potentials. This has been the main point in the account of their synergy immediately above. Separately, reason sinks into formal sterility while intuition tends toward aimless reverie. But with their fusion, the most creative form of imagination emerges, a *disciplined fantasy* which soars boldly into new realms of possibility. As such, this synergy of reason and intuition arguably represents the very pinnacle of creative imagination.

SUMMARY

This chapter paralleled the previous one by arguing that intuition and symbols are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its evolutionary *history*, and that helps to constitute *imagination* in its core sense of creativity.

We thus began by defending the *independence of symbolism and thought* against various attempts to assimilate them to each other. This defense consisted, to begin with, of arguing that the roots of thought and language are at least partly independent of each other. Infants and beasts exhibit a preintellectual form of language, and a prelinguistic form of thought. Also, thought and language can be impaired independently of one another. Further, languages are at least in part elaborate cultural artifacts which thought must struggle to internalize and struggle to express itself through. Thought isn't a series of words, and is in fact often difficult to put into words.

The independence of thought and language was defended not only at the level of their early roots, but also at the level of their mature relationship. Piaget neglects the full role of language upon thought, and often seems to treat language as a mere outgrowth of, and mere vehicle for, thought. In fact, language transforms thought profoundly at its highest stages. At the other extreme, Whorf claims that different languages compel different kinds of thought. But research shows that language influences different kinds of thought in different ways and degrees. Further, thought is too dynamic and creative to be imprisoned by language. His emphasis on an all-pervasive determinism could be weakened so as to simply say that language affects thought to various degrees in different areas. So language is neither a passive vehicle nor an imprisoning cage for thought: their relationship isn't as one-way as these lopsided determinisms suggest.

We then turned to the creative *synergy of thought and symbols* which has transformed them and given them powers they lacked apart. This synergy created symbolic thought and thoughtful language. To begin with, it was the growing powers of thought that allowed language to become symbolic rather than instinctual, making language more voluntary and flexible, and

giving us the power to talk about anything in any way. In turn, thought was no longer immediately bound to perceptual stimuli, it was mediated by symbols and ideas. We could represent and manipulate the world internally through symbolic thought. Symbolism also reinforced thought by making it more abstract, systematic and coordinated.

It is this synergy of thought and language that makes humans so unique. Symbolism produced more organized, resourceful and interactive minds and societies. The result was more richly meaningful, elaborately planned and complexly channeled forms of life. Language is a unique tool in that it's turned inward to master ourselves, our inner potentials. It makes our action more reflective, voluntary and planned. It allows us to construct complex structures of society and thought, and is the basis of the most uniquely human forms of society and thought. It leads out of the confined world of beasts and into the wide open possibilities of civilization and reason.

Symbols are thus like images in playing an intermediate role between perception and thought, for they can re-present the sensory world in its absence to thought. Here symbols bring abstraction, organization and coordination to thought. Due to this mediating role of symbols, humans are no longer tied to their immediate perceptual environment. Symbolism gives us the unique ability to rebuild the world according to our own aspirations, the ability to master the possibilities in both our world and in ourselves.

The mediating role of symbols differs from the mediating role of images, seen in the previous chapter. Symbols are abstract and general, and represent things by mere convention, while images are concrete and particular, and represent things by vivid pictorial resemblance. Images thus excel at representing detailed spatial, pictorial scenes, which is a cumbersome task for language. Symbols excel in precisely and flexibly communicating generalized information, abstract reasoning, and narrations of events, which are cumbersome tasks for images due to their inherent ambiguities and lack of effective syntax.

In the synergy of thought, symbols and images, thought gives meaning and life to symbols and images (which are dead on their own), while symbols and images act back on thought in their own special capacities. Here images bring concreteness and spatiality to thought. But highly imagistic thought is limited by its concrete, self-absorbed, pre-critical nature. Thus, the need for symbolic thought, which frees thought from its immediate perceptual environment (and concrete images), and fosters more abstract, systematic and coordinated outlooks. But highly symbolic thought can be too abstract and remote from experience, and thus often needs concrete images to help it rehearse actions, assess feelings, etc. in clarified, concrete ways.

The overall conclusion here is that thought and symbolism are independent but engaged in a synergy together. This aligns with the thesis that individual minds and social institutions (including symbolism) are independent of each other but engaged in a synergy together. Both

views are quite incompatible with rationalism and empiricism, which assume that all humans think in basically the same ways. Against this assumption, it was argued that thought has shifted to increasingly expansive levels of organization, each with greater conceptual power and mobility, thus leading humans to greater powers for self-awareness, self-mastery, and free will. These profound transformations show that man's imagination is a dynamic, evolving phenomenon which can only be understood in historical terms.

We then shifted from how symbolism transformed intuition into reason, to the *synergy of reason and intuition*. For reason entered into a synergy with the intuitive thought from which it emerged. Just as purely intuitive thought can tend towards reverie, so reason without intuition can tend towards formal sterility. But when we combine the richness and vitality of intuition with the analytical rigor and conceptual mobility of reason, then the guided flight of this new, rational imagination soars into whole new realms of possibilities.

However, the proper roles of reason and intuition is a topic of ideological debate. Romantics and rationalists can be reconciled here by recognizing that reason is a source of rigor, while intuition is at the core of creative insight. Still, on its own, intuition is subjective, and stands in need of reason and the senses for its objectivity.

This synergy between reason and intuition, which emerges from the synergy of symbols, images and intuition, represents the pinnacle of creative thought, which is the core sense of "*imagination*". This means that imagination is a complex of dynamic, evolving synergies. Any adequate account of creative imagination must therefore ultimately treat it as an emerging, *historical* phenomena, whose powers, conceptual reach and inner dynamics are constantly expanding. Unfortunately, this a major shortcoming of contemporary theories of imagination.

CHAPTER 3 NOTES

1. This chapter also serves as the conclusion of part one by looking at the *overall* synergy of images, symbols and intuition as manifested in the *synthesis* of imagistic and rational thought. This couldn't be done in the previous chapter, because at that time we'd only covered the synergy of intuition and images in imagistic thought.
2. "Rational" will mean "conforming to rules of inference" in this chapter. Its other sense ("means-ends efficient") won't appear until part two.
3. "Images" is perhaps a better word than "icons," for while both resemble or picture what they stand for, only the former seems to admit of both physical and mental substantiations.
4. Pictographic writing and onomatopoeia are intermediate cases between icons and symbols. The distinction isn't clear-cut, for (as Wittgenstein noted) the image (or icon) stands in need of a convention to

interpret it. For example it must be understood, as Alston (1964:50) notes, that a paint sample stands for a paint's color, rather than its texture.

5. On symbolism in culture as a whole, see, for example, Cassirer.

6. This is a further example of how the contrast between images and symbols isn't always clear-cut: see notes directly above.

7. Here Chomsky recently says, “. . . it seems that many of the fundamental properties of these grammars are part of innate endowment, so that the child in effect knows in advance what kind of grammar he must construct and then must determine which of the possible languages is the one to which he is exposed” (*Oxford Companion to the Mind*, p.421).

8. See, for example, McNeill 1966:52.

9. “. . . genetic endowment provides for the growth and maturation of special mental organs, the language faculty being one. The development of these systems is essentially uniform among individuals. Their minds contain roughly comparable rule systems of highly specific structure determined in general character by some property of the human species. These rule systems cannot be derived from the data of experience by “induction”, “abstraction”, “analogy”, or “generalization”, in any reasonable sense of these terms, any more than the basic structure of the mammalian visual system is inductively derived from experience [Without this rich innate endowment] we'd grow into “mental amoeboids”, unlike one another, merely reflecting properties of the impoverished environment, lacking the finely articulated structures that make possible the rich and creative mental life that is characteristic of all humans who are not severely impaired by individual or social pathology.” *Op. cit.*, p.420. He doesn't deny learning has a role in acquiring languages (he allows that learning triggers innate deep structure and acquires the rules that transform deep structure into surface structure. His views thus resemble rationalist innate ideas.

10. See, e.g., Desmond's (1979) review of the research.

11. Some of the references for this are Vygotsky 1962,1978, Whorf 1956, Hallpike 1979, Flavell 1963, Dale 1972:202ff., Thomson 1959:164ff, Lloyd 1972:36ff., Carroll 1964:75ff., Turner 1975:86ff.

12. This assumption that languages differ widely is no longer as fashionable as in Whorf's days, when so many new and exotic languages were being documented. Partly under the influence of theorist like Chomsky, attention has shifted toward the underlying uniformities in languages (see above).

13. The key claim in the quoted passage is that “Formulation of ideas is not an independent process . . . but is part of a particular grammar and differs . . . between different grammars,” though Whorf is really talking more generally about both lexicons and grammars, rather than grammars alone. This claim seems to blend the different claims that language determines thought, and that cultures with different languages have different outlooks. (That these claims are independent can be seen by, for example, imagining cultures with different languages whose different outlooks are the result of wholly different experiences rather than just different languages.) Together these claims say that different languages compel different views of the world.

14. Also recall Head's finding (1926) that spatial thinking of the kind used in playing chess is capable even in situations where brain damage prevents simple language use. Though the rules

of chess are formulated verbally, the strategies of chess apparently are not. (Compare Einstein's observation, in his letter to Hadamard, that his own thought processes are preverbal.)

15. On these influences of thought upon language, see Winch's *The Idea of a Social Science* (1958), "Understanding a Primitive Society" (1964) and "Language, Belief and Relativism" (1976). Also see Vygotsky's *Mind and Society* (1978) and *Thought and Language* (1962). Also see discussion of these topics below.

16. How can we unambiguously state with pictures that the cat is not on the mat, aside from *symbolizing* negation with a bar through the picture of cat upon the mat?

17. There are stages to the fusion of thought and symbolism. In early stages, thought consists of *concrete imagery* (concrete images and the intuitive associations that accompany such images). Here thought is symbolically articulated, but isn't yet wholly fused with symbolism into an abstract, analytical form. As we'll see, this highly imagistic mode of thinking has difficulty mastering syllogistic relations when these transcend practical experience. Argumentation is based on concrete experience, such as shared imagery and proverbs, with little attempt to coordinate ideas abstractly. It is oratory rather than reasoning. Similarly, explanation is metaphorical and animistic rather than detached and scientific, for thought is still quite submerged in perception.

18. See the papers presented by Hewes, Stokoe and Wang in the ANYAS symposium on the origins and evolution of language and speech (vol.280,1976).

19. Some authors feel that Paleolithic cave paintings are primordial forms of writing, in that they were presumably used partly to represent ideas. Be that as it may, in the Neolithic, personal seals were used to indicate property ownership. Later, these seals were combined in administrative ledgers with numerals and signs for kinds of objects. Initially these signs were pictograms, which represent objects by their pictures. These were supplemented with ideograms (logograms), which represent ideas difficult to picture, such as abstractions, by extending the meaning of pictures in various ways. But the number of elements in these writings systems soon became prohibitively large. Thus, phonograms evolved, which symbolize various sounds in speech. These were eventually replaced by true alphabets, which simplify this phonetic approach to writing by symbolizing just the couple of dozen or so phonemes each language possesses.

Thus the move is steadily away from writing which pictures things and ideas toward more arbitrary characters which symbolize speech, itself, and thus bring greater efficiency, simplicity and flexibility to writing. A small number of characters have the true power to represent any potential idea or thing, without having to coin new characters each time. Of course, other factors were at work in the evolution of writing systems. Political and technological factors help to explain why, for example more pictorial systems persisted in Egypt and China. (This history of writing is based on Childe 1946 and Linton 1958.)

20. Compare Bruner's claims above that the course of cognitive development is determined by our evolving modes of representation, namely, action, images and language. He argues that

language fosters rational thought by allowing children to articulate their experience, inspect these articulations, and perceive contradictions in them.

21. Not surprisingly, the right and left hemispheres specialize in imagistic, spatial thinking and abstract, verbal thinking, respectively. Damage to the right brain typically impairs spatial thinking, while damage to the left brain impairs verbal thinking (Blakeslee 1980:17-24,137-67).

22. This interactionist approach will be expanded below to include not only *mental* and *social*, but also *biological* factors. But it should be noted here in this chapter on thought and symbols, that such an approach to *meaning* might be possible. This approach roots meaning in human nature, as well as our institutions and thought. This recognizes that symbols are lifeless without thought to utilize them, comprehend them, and bestow meaning upon them. But it also recognizes that such meanings are controlled by social rules, and are ultimately rooted in shared ways of seeing the world, shared forms of living and feelings, and a common human nature (thus, in a real sense, meaning predates language). Meanings are fixed by natural and social factors. Thus, meanings are essentially what ideal language users comprehend them to be when they are fully aware of the social rules governing their usages, and when they share the same basic needs, feelings and perspectives as all other users of the language (as Wittgenstein noted, both go together). Such a formulation allows that meanings are *dynamic* things which evolve through the interaction of creative thought, social institutions and human needs.

23. But Piaget neglected the full role of language in these transformations, as just seen.

24. Thinking which abbreviates steps, but still conforms to rules of inference is still reasoning. But step-by-step thought which only sporadically and spontaneously grasps the inherent relationships between concepts isn't reasoning.

25. Another way that reasoning involves immediate apprehensions is that each step in a reasoning process is ultimately a direct and immediate apprehension of a relationship: you either see it or you don't, but this relationship, itself, admits of no systematic proof. In fact, not only reasoning, but also all other forms of thinking, and even perception, are "intuitive" in the sense of ultimately consisting of immediate apprehensions of relationships or facts. But they obviously are not all "intuitive" in the sense of being forms of a-rational thought.

26. "Rational" will mean "conforming to rules of inference" in this chapter. Its other sense ("means-ends efficient") won't appear until part two.

27. Intuition's ability to actively grasp relationships goes beyond the passive formation of associations in conditioning.

28. It shouldn't be surmised from our definition of intuition as a-rational thought that it has no place in *abstract* thought. Much of abstract thinking is, in fact, a-rational in the real sense that it doesn't systematically conform to rules of inference. Intuition's use in abstract thought consists, for example, of the vague feeling by a philosopher that an idea doesn't really fit into his system,

or the groping by a logician towards the conclusion in his proof, or the sudden insight by a scientist that a simple hypothesis might embrace various facts. In all these cases, abstract thinkers are groping about with concepts in order to feel how they are fitted or related together. Intuitions of this kind becomes reasoning, as we've noted already, by systematically incorporating them into trains of thought which conform to rules of inference.

29. *Enquiry*, sec. 2-3.

30. These kinds of association between concepts even appear to hold across cultures (Osgood, 1962). These findings have been used to map concepts within a three-dimensional conceptual space based on statistical averages of ratings attached to concepts on these three scales. Such maps show the polarity of concepts (their distance from the intersection of the dimensions) and distances between conceptual meanings (Jenkins *et al.*, 1958).

31. See Neisser 1967, as well as the end of the previous chapter.

32. Thomson: 1959, ch.10.

33. It's intuitionism's conflict with rationalism that's perhaps most relevant here, for we're concerned with the proper relation of intuition and reason (the conflict between empiricism and romanticism is covered elsewhere). While rationalists tend to see knowledge as objective (demonstratable) and explicit (capable of being articulated in language), intuitionists tend to see knowledge as subjective (personal insight that can be experienced for oneself but can't be demonstrated to others). Plato and many others combine mysticism and rationalism. This is because of rationalism's historical concern with demonstrating facts about supersensible reality, and its reliance on innate ideas whose truth is often guaranteed by God. Still, the methods of mystics and rationalists differ markedly in their emphasis on intuition and reason, respectively. A contrast between romantics and rationalists is over whether reason should control emotion or vice versa, a topic covered below.

34. He speaks in *The Republic* (607b) of "the old quarrel between philosophy and poetry." This quarrel is a product of the coming of the literate revolution, according to Havelock.

35. Intuitionism shares this problem of a lack of objectivity with rationalism. Kant and Hume criticized rationalism for its attempt to reveal the ultimate nature of reality using pure reason, much like a geometer spinning our theorems. Their point is that when pure reason thus ventures beyond the limits of experience, its claims become obscure and indeterminate, impossible to verify, and prone to antinomies. Such claims to knowledge are dogmatic and illusory.

36. It's in this spirit that Coleridge attacks those who equate imagination with the mere association of sensory impressions into aggregates of a fanciful nature. This claim that rational analysis dissipates the very phenomena it investigates is one of the motives behind romantics' fixation upon history, religion and psychology. They feel these are best at revealing the creative spiritual forces in mind and nature, which is the primary preoccupation of romantic thought.

PART 2

THE SOCIOBIOLOGICAL ROOTS OF IMAGINATION:

INSTITUTIONS AND INSTINCTS

CHAPTER 4

THE SYNERGY OF IMAGINATION AND INSTITUTIONS

As already noted, the purpose of this work is to gain a more comprehensive understanding of imagination by looking into the evolving synergies between its roots, from which its structures, powers and limitations derive. With this purpose in mind, part one looked into the synergies of imagination's psychological roots (images, symbols and intuitions), while part two will look below into the synergies of its sociobiological roots (institutions and instincts).

Part one concluded that these psychological roots are independent phenomena engaged together in a dynamic, evolving synergy that constitutes imagination, construed in its core sense of creativity. Because imagination is a dynamic, evolving synergy that's constantly reconstructing itself into more powerful forms, it was also concluded above that imagination can be fully understood only by looking at its *unfolding* nature across all major cultures, disciplines and historical eras.

Thus, part two will focus on imagination's unfolding history. It will shift from examination of purely psychological factors, to examination of the potent sociobiological forces that *drive* imagination's history and forge the psychological developments noted in part one. These sociobiological roots of imagination are instinctual and institutional. They are the *external* roots of imagination, for they powerfully shape imagination from the outside rather than constituting it from inside (as its psychological roots do).

So, in order to more fully understand the unfolding nature of imagination, part two will be examining imagination's evolving relationships with instincts and institutions. It's the synergy of these biological, social and mental forces that has forged imagination's character, and in fact has determined the whole of human history. The present chapter will examine the evolving interrelations of imagination and institutions within this synergy, while the next chapter will examine the interrelations of imagination and instincts.

Part two will employ the same structure that part one did in pursuing the basic aim of more fully understanding imagination by looking into the synergies of its roots. I'll start by trying to repudiate attempts to deny the independence of these roots. This will clear the way for a genuine synergy between them as independent yet interactive phenomena. Then we'll explore just how their synergy has mutually promoted and transformed them. All this will involve trying to overcome the stubborn territoriality of biology, sociology and psychology, and trying to reconcile competing ideologies within them.

Accordingly, the present chapter will begin by arguing that imagination and institutions are *independent*. Here, we'll scrutinize attempts to deny their independence from each other. We'll see how neither is an epiphenomenon of the other, and how both have their own inner dynamics. Institutions and imaginations flourish together by unlocking each others' inner potentials and dynamics; when separated, institutions petrify and imaginations stagnate.

Having argued for this autonomy of imaginations and institutions, I'll then turn to their actual *synergy* in the "cultural motor" (the dynamic interplay of minds and societies that drives cultural development).¹ We'll see that institutions landscape and stock our minds, while creative minds work back upon institutions, maintaining and adapting them. They thus build upon one another and rationally reconstruct each other into powerful new forms which, progressively open up new vistas of possibilities in each other. Yet we'll also find that this synergy involves tensions as well as mutual benefits. Imaginations and institutions conflict because society is a complex, intricately adjusted system maintained by forces that minds can't fully comprehend and can't hope to replace. Our ideas thus tend to become building blocks in an overall process whose ultimate design and inner dynamics we can only partly fathom and affect.

It should be obvious from what has been said above that part two involves much natural history. Altogether, there are five such passages consisting of historical matter. Some comments about their appropriateness are in order. Firstly, it should be noted that they comprise but a small minority of part two as a whole, and are integral parts of the overall argument, which would be much poorer without them. Secondly, the philosophical originality of these passages is not in their content (which consists largely of historical matters), but in the philosophical use to which this content is put. Thirdly, given the inherently speculative nature of history, none of these passages is offered as established fact. The aim is instead to establish their credibility by basing them as much as possible upon well accepted views. Unfortunately, space limitations make it impractical to cover the direct evidence for all the well accepted views below, so the reader will instead be referred to studies where such evidence is found. However, where less widely accepted views appear either direct evidence will be cited or the speculative nature of the point will be admitted.

What Are Biological, Mental and Social Phenomena?

Before analyzing the synergies of mental, social and biological evolutions in the remaining chapters, we should first try to distinguish what we mean by these phenomena. To begin with, *biological* phenomena can be characterized as islands of incessantly self-perpetuating order in a universe forever tending toward disorder. Life can be viewed as a level of organization in the

evolution of matter marked by purpose, functional hierarchy and autonomy, as well as self-maintenance and self-perpetuation.²

Life emerged when spontaneous chemical reactions were organized into autonomous, functional hierarchies built up of purposive systems, all of which served the characteristic life functions of self-maintenance and self-replication, and all of which converged on the overarching function of self-perpetuation. Without either self-replication (precise yet mutable) or self-maintenance (growth, nourishment, metabolism, etc.), evolution would've been stuck at the inanimate level of spontaneous, uncoordinated chemical reactions. And without the symbiosis of both self-replication and self-maintenance, evolution wouldn't have got beyond simple, naked genes or proto-cells. This is why both self-maintenance and replication are so central to our paradigm of life. Characteristically, living activities and systems are hierarchically geared to these basic functions, which constitute their reason for being.

These life functions became increasingly complex as life evolved.³ This occurred as great adaptive radiations brought successions of new groups (e.g., amphibians, reptiles, mammals), each with higher degrees of flexibility, intelligence and autonomy from their environment. Crucial to this was the emergence of minds and societies. *Societies* are levels of organization between organisms, rather than within them (as in the case of minds, as we'll see). Societies can be seen as cooperative populations of interdependent organisms. Populations are social to the degree that they are cooperative, interdependent, and working for common goals. Societies differ from organisms (which are biological organizations) in that their members are much more autonomous than the member organs and cells of organisms. Thus, hydrozoan "colonies" are hardly social at all compared to vertebrate societies, while insect societies are an intermediate case.⁴

Higher degrees of autonomy in organisms stem largely from possession of mental powers. A *mind* can be seen as the conscious events and abilities possessed by an organism. Minds have functional unities, just like societies and organisms do (as noted above). Here, minds are unified by their memories, will and personalities. Our conceptual and values systems, as well as our plans of action, possess hierarchical structures, just as do societies and organisms. Where these features cease to obtain (as in multiple personality syndrome, profound amnesia, split brain patients, etc.) the unity of the mind lapses or disintegrates.⁵

THE INDEPENDENCE OF IMAGINATION AND INSTITUTIONS

Having defined what we mean by mental, social and biological phenomena, I'll now begin my attempt to show that imaginations and institutions (and the mental and social evolutions of which

they're a part) are *independent* yet interactive phenomena engaged in evolving *synergies* together. We'll begin with the independence (autonomy) issue. Here we'll scrutinize both social determinism and psychological reductionism ("psychologism"), which deny the independence of minds and societies from each other, and thus preclude a genuine synergy between them. The fact that one is a determinism and the other is a reductionism doesn't mean that there aren't real points of conflict between them that can be examined.⁶

Psychological Reductionism and Social Determinism

According to social determinism (or sociological determinism), societies are great historical edifices that dwarf individuals and their minds into insignificance.⁷ Even conceptual structures are embodied in society's languages and institutions (religions, science, etc.). They are passively absorbed by the individual. Individual's don't create their societies, but merely release the cultural potentials of their age. They are mere puppets of these vast, impersonal forces. Like messengers, they're needed to carry the message, but they're quite extrinsic to the message itself. Familiar names associated with these views are Durkheim, Kroeber and Whorf.

Such extreme determinism is perhaps best taken as a counterbalance to the equally extreme thesis that all socio-cultural phenomena are mere products of the activities and interrelationships of their individual members. For this psychological reductionism fails to see that societies are vast historical edifices whose origins and purposes are quite obscure to individuals. Systems of law, politics, economics, etc. emerge only through the organizations of individuals, and they operate according to dynamics which can't be explained in terms of individuals on their own. For example, it's doubtful that our ancestors foresaw that the simple claiming of property or making of contracts would lead to complex urban economies. As we'll see, conscious agents rarely comprehend the overall, intricate dynamics of the institutions in which they play such fleeting parts. Our plans and purposes become building blocks in an overall process whose ultimate design conscious agents can only partially understand and affect. In recent millennia, conscious plans were the raw material for civilization's evolution, but its overall form was fixed by these basic system requirements shared by all civilizations.

The Autonomy Of Individuals

However, this doesn't mean (as social determinists seem to feel) that individuals' identity and autonomy *disappear* when we enter into societies. It simply means that they take on new

characters. People become socialized. We behave according to the requirements of social organizations, even where we aren't fully aware that we are doing so, or why we are doing so. Nor do individuals become *extraneous* to history when they inhabit societies. To begin with, individuals' outlooks don't faithfully and strictly reflect institutions. Allport argues this eloquently in his psychology of religion.

In the Middle East on Fridays one may enter a mosque and witness a sea of humanity kneeling and bending low in the direction of Mecca. The wave of conformity is like that of a vast impersonal tide. Yet, from the point of view of subjective religion, the significance of the devotion is different for each Moslem The roots of religion are so numerous, the weight of their influence in individual lives so varied, and the forms of rational interpretation so endless, that uniformity . . . is impossible. [1971:27-9]

A further argument for individuals' imaginations not being extraneous to the history of our societies and cultures is that individuals have an active, central role in the construction of both the *conceptual* and *institutional* orders of our societies and cultures. Let's look at these conceptual structures in this light first.

Our conceptual structures are, indeed, embodied in our languages and institutions, as would be argued by those deny the independence of individuals and their thought structures from societies and their structures. But it's implausible to argue, as these determinists do,⁸ that our concepts are fixed by language and institutions, right down to their most categorical features.

To begin with, these categorical features are an integral part of all thought, and develop (both ontogenetically and phylogenetically) well before sophisticated social or linguistic behavior begins. As we saw in the previous chapter, there's support for Piaget's view that language arises only once thought has developed a basic categorical framework capable of supporting grammatical distinctions. As we'll see below in discussing volition, higher vertebrates exhibit sophisticated intuitive thought independently of symbolism.

The social determinist also fails to recognize that our conceptual systems as a whole are embodied in individual minds as well as in languages and institutions, and that our individual minds play an active and central role in conceptual construction, from its most categorical to its most ephemeral features. The point is that we don't just passively absorb concepts from our social environment according to the empiricist model adopted by those who would deny the independence of individuals' thought structures from social structures. We learn through active insight as well as passive conditioning. Our cognition is a genuinely constructive process: we actively construct our conceptualizations through probing interactions with our natural and social environments.⁹ Our continuing explorations and manipulations of our surroundings give us more

stable and powerful representations transcending environmental variability and fluctuations, which allows us to better exploit our world.¹⁰ It is through this dialog of our minds and our environments that we come to master the potentials of both. Without this active role for our imaginations it's difficult to see how culture could develop, or even change.

As just noted above, imaginative individuals have an active and central role in the development of not just our conceptual order, but also our *institutional* order. The ever increasing size and complexity of our institutions have made them increasingly reliant on trained and educated individuals to maintain and operate them, and to constantly adapt them to changing circumstances by actively breaking down obsolete practices and introducing innovations.

It is through this genuine dialog of our minds and our societies that we come to master the potentials of both. Without this active role for our imaginations it is, as already suggested, difficult to see how society could develop, or even change. Societies progress to the degree that this dialog is developed. Most often these advancements are undoubtedly the work of generations of ordinary men spontaneously seeking their own advantages, with little concern for the overall direction of history. But there are also greater men, men of destiny, whose visions of the possibilities of their ages (as Hegel noted¹¹) enable them to take more conscious control of our future. One such leader was Hammurabi, who unified his great Babylonian Empire by implementing an enlightened system of justice, a strongly centralized government, and a centralized religion.

So individuals have a role in history. But, again, in this role, they and their imaginations are hardly just extraneous puppets who merely release the potentials of these "vast, impersonal" institutional forces. This is because these potentials aren't functions of institutions *alone*, but rather of the *synergy* of institutions and imaginations. Without individuals, institutions are empty, petrified shells; without institutions, individuals are blind and stray. An example of this synergy is can be seen in how the accumulation of personal innovations during the agricultural revolution led to socio-economic growth, which stimulated further innovations (e.g., the wheel, sailing ship and chariot, together with metallurgy, writing, etc.), which in turn unlocked new possibilities of socio-economic organization.

The entire history of civilization is in fact the history of our institutions and imaginations actively building upon each other and progressively unlocking new vistas of possibilities in each other. In this vigorous dialog neither is extraneous, for both are essential to developing the potentials of the other. Only through the emergence of the autonomous individual did the potentials of a higher social existence open up, and only through the emergence of higher social organizations were our higher creative and individual potentials unlocked.

The Autonomy of Ideas

Having looked at how individual minds have a significant degree of autonomy from the societies they inhabit, let's now look at how their ideas¹² are also autonomous of these societies. It might be argued that ideas are autonomous of societies in that the world of thought and ideas isn't frozen in institutions, but wide open to a whole universe of possibilities. While our natural and social worlds are comparatively brute and given, the ideal world is a system of open-ended relationships whose possibilities are virtually endless. Ideas are autonomous of institutions, then, in that they aren't wholly constrained by them. On the one hand, this allows ideas to unlock new possibilities in social evolution. But on the other hand, this opens up the danger that new ideas will be woefully out of touch with the true potentials of social evolution.

A potential reply to this claim comes from Marx's dialectical materialism in which ideas are determined by socio-economic factors. While Marx accepted Hegel's dialectical approach to history, he followed Feuerbach in rejecting Hegel's idealism in favor of a materialism and humanism which sees spirituality and other ideas as purely human products. The basic dialectical forces in history are technological and economic, not ideas (as in Hegel's dialectical idealism).

This infrastructure produces the social and cultural superstructure of each stage in history, including its nexus of ideas and cultural, social, and political institutions. Marx said in his *Critique of Political Economy* that "The sum total of the productive relationships constitute the economic structure of society – the real foundations on which rise legal and political superstructures . . . [and which] determine the general character of the social, political and spiritual processes of life." This inverts Hegel's idealism. Marx said in his *Capital* that "To Hegel, the process of thinking . . . is the [creator] of the real world . . . with me, on the contrary, the ideal is nothing else than the material world reflected by the human mind."¹³

Marx made the important point that revolutionary ideas of the past had failed because they weren't rooted in realities of the economic order of their era. Ideas cannot determine history: they can only hinder or accelerate the inexorable dialectic of material forces in history. It is for this very reason that Marx prefaces *Capital* with the words, "It is the ultimate aim of this work to lay bare the economic laws of motion of modern society."

It should be noted that Marx didn't treat causation here as crudely one-way (with ideas being mere epiphenomenal projections of underlying economic forces), for he allowed that ideologies were effective means of controlling people (religion was seen as an opiate, and notions of justice were seen as rationalizations of the will of the dominant class). However, he did treat ideas even in this role as reflections of underlying economic forces and class conflicts, and as mere tools of classes to press their economic and political interests even in revolutionary ways.¹⁴ Ideas are thus seen as *products* and *instruments* of economic forces. This is all in keeping

with his view that mankind is essentially the product of economic forces.¹⁵

One problem with this economic determinism is that it's hard to see how all the differences between cultures can be explained strictly in terms of economic factors. Much cultural diversity exists between cultures which are nonetheless at the same level of economic development. Also some ideas are less readily susceptible of economic explanations than others. For example, it's much more difficult to make the case that specific mathematical or scientific ideas are fixed by economic factors than it is for, say, specific political ideas.

The most notable reply to Marx's economic determinism comes from Weber's argument in *The Protestant Ethic and the Spirit of Capitalism* that the capitalist economic system was fostered in Europe by aspects of Protestant religious beliefs, most notably Calvinist ethics, whose emphasis on hard work and asceticism encouraged men to work for profit which wasn't consumed but reinvested.¹⁶ In this way, Weber argued that the efficacy of ideas is more vital and dynamic than Marx envisioned. Broadly speaking, Weber was trying to show that religion brings deep meaning and purpose to our lives, and thus inspires wide areas of our lives, including even the economic areas.¹⁷ This is plausible. Religion isn't just a *product* and *instrument* of economic forces, but a deeply inspiring and moving force in human life and history.¹⁸ It's driven not just by economic forces, but also by the even deeper instinctual forces of human nature and the human psyche (and perhaps by spiritual forces, though that is beyond the scope of this work).

As we'll see, this role for ideas didn't really begin to emerge until civilization matured into a literate, cosmopolitan form. It was in this dialog of civilized institutions and rational imaginations that ideas ceased to be mere static, institutionalized objects appended to (for example) petrified priestly rituals and dogmatic temple schools. They were transformed instead into dynamic mental phenomena capable of infusing life and vision into society. Great visionaries began to explore and chart this new realm. Great ideas began to enter history. They began to inform and transform its directions. In the moral and political spheres a true dialog opened up between ideal worlds and the actual world.

In sum, then, there seems to be a genuine interaction of ideas and societies. Society produces ideas in that ideas are partly generated by reflection upon or reaction to society and its conflicts. Also society in different ways distorts, validates and selects ideas. Economic forces are central in this role. But ideas are not epiphenomena of socio-economic forces, for (especially in the form of religions) they can inspire our lives with purpose and meaning, and can structure broad areas of human activity, including economic areas. Here ideas are tapping into forces even deeper than economic ones, namely, the drives and emotions that constitute our shared human nature and human psyche (such as the need for consolation, belonging, love, etc.). In this way, ideas electrify our imaginations and act back in powerful ways upon the socio-economic order to transform society. Yet, even here, ideas flourish best when the social and economic climate is

amenable to them. In these ways, ideas can be said to be autonomous from society, yet engaged in a genuine dialog with it.¹⁹

A further way in which ideas are autonomous of societies is in the *inner “logics” of their developments*. A good example of the autonomous, inner dynamics of mental evolution can be found in the unfolding stages of conceptual thought. The necessity of these four stages (at least in the most basic features of Piaget’s taxonomy) stems from the basic constraints of our cognition. We don’t have direct and immediate knowledge of reality, but instead must abstract information from the senses and organize it into a coherent form via thought (this was what Aristotle meant by saying that perception works in the reverse direction from reality, for the order underlying phenomena must be reconstructed by the mind). That is, we must actively *construct* our conceptualizations through probing interactions with our environment. Social development can hinder or advance progress along these stages (even more than Piaget, himself, thought), but the basic *order* in which these events unfolds is apparently inherent to conceptual development, itself.

In this context, Carroll (1964) draws a parallel between Piaget’s four stages of conceptual development (sensori-motor, preoperational, concrete operational, formal operational), and the four stages in problem-solving discerned by Wallas and Patrick (preparation, incubation, illumination, verification).

The unifying theme in the work of Piaget is the gradual unfolding of the individual’s ability to construct an internal “model” of the universe around him and to perform manipulations on that model The four stages of mental development listed by Piaget correspond to four stages in the working through of any process of thinking. The prethinking stage in which “perceptual invariants” are acquired by the infant corresponds to a stage of concept formation or concept attainment in which the basic entities . . . must be identified and recognized. The preoperational, intuitive stage may correspond to a type of “incubative” thought reported to occur even in adults when concepts involved in a problem are allowed to interact somewhat freely. The concrete operational stage corresponds to a stage when one experiments either overtly or covertly with the tangible referents of these concepts. The formal, propositional stage corresponds to the process of constructing alternative hypotheses regarding a problem, or linking together a series of inferences concerning a situation. (1964:79-80)

The strictness of these correlations might be open to some question. But the basic approach seems plausible enough. Given that our we lack direct insight into reality, and that our cognition is mediated by perception, we must thus first abstract basic, invariant features from our environment and then systematically proceed to construct workable representations of our

environment through our processes of thought. Thus the child initially develops a rudimentary conceptual framework of categories, just as sciences in their earliest stage begin with taxonomies of the phenomena they study.

But then we seek to penetrate beneath the perceptual surfaces of these phenomena, and to plumb the essential connections between them. Initial hypotheses are naturally haphazard, impressionistic and highly intuitive in character. This is what gives the speculations of the preoperational child or of the early Milesian physicists a somewhat dreamy, analogical character. Lacking a systematic grasp of the objective relationships in the environment, it's difficult for them to distinguish subjective interpretation from objective properties (thus the tendency towards subjective associations and animism).

But by repeated, groping interactions between thought and world, understanding gradually become more systematic and comprehensive. Thought thus begins to shift from concrete experiences toward abstract relationships, and from what is immediately perceived toward theoretical possibilities. But this is a slow and cumbersome process, for the initially unsystematic and concrete nature of thought strongly inhibits theoretical analyses. Thus, thought must develop through painstaking searches for order and pattern in its attempt to build a solid, integrated understanding of phenomena. This occurs historically with the employment of standardized systems of measurement, currency and writing, as well as the early development of professions like engineering and metallurgy. An example here is the contrast between the poetic imagery of the Milesians with the more systematic and abstract approach to science in, for example, Ptolemaic models, which use cycles and epicycles to account for heavenly motions.

It is the slow and cumbersome nature of this shift that accounts for why, as thought becomes more systematic, it gradually proceeds from a more concrete (concrete operational) to a more abstract (formal operational) stage. It is in this last, abstract stage that powerful theoretical understanding is achieved. Here, fuller analyses of theoretical possibilities come into play, so that ranges of alternative hypotheses can be considered and systematically tested. For example, early mathematics was, as we'll see, heavily dependent on trial and error, and on the use of empirical measurement and concrete examples rather than theoretical proof. Apparently, it was not until the Greeks of the sixth century B.C. developed canons of rigor and theoretical proof that mathematics fully emerged from the concrete into the formal stage.

It is for these reasons that these events in the stages of conceptual development, at least in their most basic form, seem to have a certain degree of necessity to them. There is, in other words, *an inner dynamic to the development of conceptual systems*. In terms of disciplines, the one place where this inner dynamic is perhaps most apparent of all is in the historical development of the sciences, especially mathematics and logic. Yet it's also true even in *art*.²⁰

These "ideal logics" are also apparent in the developing *methodologies* and theoretical

presuppositions of disciplines. One obvious example of ideal factors at work in *methodologies* is empirical science. Understanding and manipulating the physical world, rather than merely dreaming about it, requires that theories be systematically tested against experience. But testing isn't enough: theories must be intersubjectively scrutinized in order to weed out errors and bias. This is the basis of scientific objectivity. There are other characteristic ways by which science selects its theories, such as simplicity and fruitfulness, but it should be clear by now what is meant by saying that such methodologies emerged in part due to ideal, rather than purely social or biological factors.

As just noted, theoretical *presuppositions* of disciplines are also shaped by ideal factors, rather than purely social or biological factors. That these presuppositions developed in part according to their inner dynamics can be seen, for example, in the problem of evil, which bedevils monistic religions. There are social and biological factors behind the development of such religions, but *once* they develop, they must confront the *logical* problem of how the perfect God is compatible with the existence of evil. Different solutions naturally develop, such as the Christian synthesis by reference to free will, the bifurcation of reality by theistic dualism, or the dismissal of evil as illusory by monistic idealism.²¹

In sum, then, it appears that while imaginations and ideas may be rooted in our social institutions, as well as in our biological instincts (as we'll later see), they retain a certain degree of autonomy from them. In this way, ideas are comparable to viruses which grow within the medium of cells according to their own internal codes, and in the process transform these cells. Similarly, ideas, while rooted in biological and social contingencies, still develop according to their own dynamics and logics. As they do so, they take on a life of their own, and even begin to act back upon their social and biological roots. As we'll see, they can actually reform institutions, and can help to control and channel instincts. In this way, human evolution is a genuine synthesis of mental, social and biological evolutions, each with their own inner dynamics.

The Growing Autonomy of Individuals and Ideas in History²²

So far we've argued that mental evolution has become autonomous of social evolution by countering claims that individuals and their ideas are puppets of social institutions and economic forces. But another way of arguing that mental evolution has become autonomous of social evolution is by actually *tracing the growing autonomy of the individual and his ideas in history*.²³

We distinguish life forms as *individuals* to the extent that they're autonomous and distinctive relative to others of their kind. There are biological roots to individuality (semi-

permeable membranes, precise yet mutable replication, sexual reproduction, etc.), but individuality began to truly flourish once organisms were emancipated from rigid genetic control through the evolution of intelligence and culture. Invertebrate behavior is so robotic and stereotyped just because it's so heavily controlled by genes. There's little room for individual autonomy here.²⁴

Not until the higher vertebrates,²⁵ did fully recognizable individuals with real personality emerge. This is because intelligence and culture now appeared, opening up greater levels of voluntary behavior, ingenuity, self-expression, individual variation, discriminating personal relationships and self-interested cooperations.²⁶ Intelligence, culture and individuality flourished together here. Their synergy was boosted by *Homo sapiens*' symbolism, which emancipated imagination from the confines of its immediate surroundings, and opened whole new worlds of possibilities to man. It allowed us to articulate our inner selves, master our inner potentials, and plan our lives in creative, individualistic ways.

In our traditional cultures, individuals are still submerged in the tribe, relative to urban civilization. There's comparatively little room for fully developed individuality or self-expression, for most activities are shared, most experience is homogeneous, and there's little segregation of viewpoints.²⁷ Submergence of individuals in society is reinforced by imitative educational methods, discouragement of questioning and nonconformity, precritical thought, languages unfit for distinguishing private from public viewpoints, and beliefs which are embedded in practices and poorly articulated. Generally, these closed-minded, self-absorbed societies have little room for varying, alternative viewpoints.

Urbanization also boosted the role of the individual and his imagination. Urban economies allowed many to prosper and develop their own private lives. Thought became less rigidly uniform as they moved into their own private dwellings and developed their own private spheres, professions and outlooks. Richly diverse viewpoints flourished with the mixing of peoples, division of labor, proliferation of careers, and multiplicity of social roles in these fast-growing cities.²⁸ Cities required diverse humans to reconcile opposing views in rational forums.

As we'll see, urbanization fostered not only more cosmopolitan outlooks, but also more rigorous, socially disciplined thought that was capable of reflecting on broad ranges of alternatives, critically reviewing others' views, and articulating one's own personal views. The challenging frontiers of urban life fostered bolder lifestyles with broader horizons and greater room for more rational, individualistic views. A progressive spirit developed through which we began to consciously construct our future. Thus, individuals and cultures together became richer and more diversified, broader and more ambitious.

The maturing of urban civilization in the Iron Age (starting around 1200 B.C.) best realized these potentials.²⁹ Its unprecedented expansion and flourishing produced a growing

middle class, raised social expectations and expanded legal rights. Trade, travel and conquest splintered ancient tribal cultures and produced sophisticated, cosmopolitan cultures with international outlooks. Growing literacy, prosperity and contacts promoted skeptical criticism, rational choice, individualism and concerns for social justice, rational inquiry, etc.

Here, the reflective individual began to realize his higher intellectual, moral and spiritual needs, and to develop unified directions for his life.³⁰ Urban life spread widely at this time, replacing homogeneous society with diverse, private spheres, disengaged from society. Literate, cosmopolitan cultures began to flower into maturity. Formal education fostered abstract, coordinated thought capable of systematically reflecting on its own operations and feelings. We outgrew the old tribal mentality and became more self-conscious.³¹

As we'll see, humans shed their old, sleepy self-absorption and set out on systematic quests for rational principles and universal order. They reflected on their higher needs, inner conflicts and self-identity. Humans consciously shaped their personalities with an eye toward balancing their feelings and fulfilling their potentials. They assumed the more humane, rational characters fitting to mature civilization. They developed personal consciences and promoted them above blind, public conformity to traditional rules. The autonomous, reflective individual thus fully emerged from the unreflective herd.

An ethos of free and rational choice, of individualism and reason, thus emerged in these sophisticated, cosmopolitan civilizations. Religion became less a matter of blind allegiance to priestly ritual, and more a matter of conscious personal commitment to moral advancement and spiritual salvation.³² Subsequent history would shift between these poles, but the point is that the pole of individual choice and conscience was now finally appearing in history.

Competing schools of free-thinking individuals proliferated, partly due to the growth of leisure time and of bodies of critical literature, but also due to expanded horizons and aspirations in this sophisticated age.³³ Sages roamed Greece and China, criticizing established ways and proposing reforms. Hebrew prophets assailed the debasing of their religion and sought to spiritually and morally reform it. Indian ascetics withdrew into the forests for personal meditation upon the spiritual source of being. All urged men to live according to spiritual and moral self-consciousness rather than blind devotion to priests, rites, idols, customs, and other external authorities. All taught allegiance to the inner world of the individual conscience.

In the political sphere, individualism flourished more in the West than elsewhere.³⁴ Greece led the world here by developing societies which respected the rights of common men. Their city-states were ruled by law, not despotic whim. Some went even further, to develop democracies where people ruled themselves, rather than submitting to the rule of overlords, which suffocated men's spirits everywhere else. It was here that the full powers of the individual and his imagination were unleashed. The result was one of the greatest outbursts of creativity and

growth in human history. But other cultures were not far behind.

As civilization matured in these ways, *ideas began to enter into history* and shape its course.³⁵ These universal ideas appeared all at once the world over. Sages and prophets repudiated the ancient priesthoods, who bewitched men with darkness, ignorance, magic, and fear. They offered, instead, breathtaking visions of spiritual and moral possibilities. The quest was no longer just for life's basic material needs, but for the *good life*, for higher intellectual, moral and spiritual realization. Humans were outgrowing their old, tribal mentality, and were striving for universal principles of guidance. They boldly staked out the ideal landscape of this new world of ideas, and provided the basic ideals civilization has lived by ever since.

So it was that, finally, in mature civilization, the *autonomous, reflective individual* began to fully emerge from the unreflective herd.³⁶ Free-thinking men of conscience appeared everywhere, placing their personal ideals above conformity to social rules. They reflected inward upon their higher needs and self-identities, and began to consciously shape their personalities with an eye towards well-balanced fulfillment of their potentials and feelings. These rational, autonomous individuals represent the culmination of the long evolutionary history of emerging individuality.

Thus, we've seen how civilization, reason and individual autonomy emerged hand-in-hand, as the outcome of the ancient evolutionary trend toward the mutual development of culture, intelligence and the individual. In their civilized forms, they became ever bolder and richer. It's here that the *synergy of minds and societies* is most developed. This growing role for individuality within this synergy reflects the shifting center of gravity in evolution between, genes, traditions and intelligence, respectively. The rational individual of mature civilizations, who chooses his own ideals and identity, represents the culmination of this progressive liberation of the individual and his imagination in evolutionary history, first from genetic determinism in prehuman cultures, and then from social determinism in traditional human cultures.

THE SYNERGY OF IMAGINATION AND INSTITUTIONS

We've just seen how creative minds and societies are autonomous of each other. Let's now look at how these autonomous phenomena are engaged in evolving *synergies* together.

The Cultural Motor

The synergy of individual minds and socio-cultural institutions can be called the "*cultural*

motor,” because it’s the dynamic interplay of creative minds and social institutions which propels cultural history. In this motor, institutions operate upon minds by landscaping them and furnished them with their purposes, challenges and conceptual tools. Societies and cultures serve as time-tested, pre-packaged means of channeling energies in economic ways, focusing attentions, and narrowing choices. They thus eliminate the burden of reconstructing historical decisions ever anew, and they open up the cultural foreground for conscious deliberation and innovation. This provides arenas for the steady refinement of our imaginative powers.

On the other hand, minds work back upon institutions by maintaining their operations, and adapting them to changing circumstances by actively breaking down obsolete practices and introducing innovations. Imaginations thus bring their creative insights to cultures, to help them adapt rather than petrify. In essence, then, the motor consists of individual minds tinkering about within the frameworks of their cultures, which in turn provide minds with the locus and nourishment for their creativities. In a truly synergistic fashion, both minds and cultures build upon one another and progressively open us new vistas of possibilities in each other. Without cultures, creative minds would be stunted, while without creative minds, cultures would be static.

As suggested above, this synergy between imaginations and societies emerged only gradually. It first emerged with the appearance of intelligent social animals. The development of symbolism in humans was a great boost to this cultural motor because it allowed us to better internalize culture and better externalize thought. But in the traditional cultures of pre-agricultural Homo sapiens, the cultural motor was still rather idle. Both intelligence and culture were simple, isolated, self-absorbed and static. But as civilization approached, we began to trade this sluggish dialog between static societies and drowsy imaginations for a more progressive dialog between more dynamic societies and bolder, more rational imaginations. In doing so, our culture, intelligence and individuality together became ever richer and more powerful.

But it shouldn’t be supposed that the relationship of individuals and cultures is wholly progressive. Like any synergy or marriage, there are mutual tensions as well as mutual benefits. We’ve seen above, and will see again below, that society is complex, intricately adjusted system maintained by forces we can’t fully comprehend and can’t hope to replace. Individual’s plans and ideas thus tend to become building blocks in an overall process whose ultimate design they can only partly fathom and affect. This overall design is determined as much by the system requirements of their societies as by our conscious designs. There is often a real tension between the two.

The Rational Reconstruction of the Cultural Motor

We've just examined at length one aspect of this synergy of imagination and societies, namely, its growing dynamism of as a result of the growing role for imaginations within societies. Now let's examine another closely related aspect: how this increasingly dynamic synergy between imagination and societies has increasingly *restructured* both into more powerfully organized and systematically coordinated forms. The culmination of this constructive process is the development of civilization and reason.

We saw how part one concluded that imagination is a dynamic synergy that can be fully understood only by looking at its unfolding history. The account below of the *mutual development of reason and civilization* supplies this history. It documents and explains the actual driving forces behind imagination's psychological development, as described in part one. In effect, then, the argument in part one for imagination's historical nature, and the accounts below which document and explain the historical transformations of imagination, are meant to be mutually reinforcing arguments for the claim that imagination is a dynamic, evolving phenomena that must be understood historically.

The basic claim below will be that through the evolving synergy of imagination and society, both became more rational. "Rational" has two main senses. Essentially, it can mean either (1) "actually *employing* reason" or (2) "potentially *agreeable* to reason".³⁷ Thus, rational thoughts and actions are typically opposed to (1) those which are *non-rational* (not employing reason) and (2) those which are *irrational* (not agreeable to reason).³⁸ Examples of the first sense are when we speak of humans as the "rational animal" (with the implication that other animals lack reason), or when we speak of the "rational thought" of adults (with the implication that infants lack reason). An example of the second sense is when we judge that setting out to fly to the moon in an airplane isn't rational, in that it runs counter to reason.

When we call thought rational in the first sense, we're saying that it's operational thought, especially formal operational thought.³⁹ When we call an action irrational in the second sense we're saying that the means employed to achieve an end are unworkable or relatively inefficient. A pertinent point here is Hume's claim that reason can't give us ultimate ends, but only the means of achieving these ultimate ends. Reason can tell us that only rockets, not airplanes, can reach the moon. But it can't ultimately tell us why we should want to go to the moon in the first place. Admittedly, reason can tell us what the various costs and benefits of our adventure may be, but it can't ultimately tell us whether adventure-seeking is an inherently desirable end.⁴⁰ In this second sense, then, "rational" is synonymous with "*means-ends efficient*." So the general claim that humans have become more rational means, in this second sense, that humans have become in general better able to achieve the basic ends that we all share as part of

our common human nature.

With this in mind, we can now better state the aim of the following discussion. The argument is that our minds and societies have become more rational in *both* senses of the word. To be more precise, the argument is that it's just *because* we've become more rational in the first sense (of employing reason) that we have become more rational in the second sense (of being means-ends efficient).⁴¹ It is just because we have increasingly relied on reason that we're better able to achieve our basic human needs.⁴²

To begin with, then, let's examine how humans have become more rational in the sense of employing reason. We will see that this occurred in stages. Human evolution can be divided here into three stages, namely, the *biological* stage, where the instinctual infrastructure of our social and mental evolutions were formed, the *traditional* stage where cultural traditions played an expanding role (due to peaking intelligence and symbolic language), and the *civilized* stages where imagination played an expanding role. The first stage will actually be covered in the next chapter, which deals with biological roots of imagination. So, below we'll look at the traditional and civilized stages in order to show how our minds and societies transformed themselves here into more rational forms (forms which employed reason). This will involve documenting the organizations of both societies and intellects in these two stages, then explaining their transformations in terms of the interactions of these organizations. So our focus will be on social and intellectual organizations and their mutually transforming interactions.

Traditional Cultures⁴³

The first hints of the shift from the biological to the *traditional* stage of human development come from as early as the mid-Pleistocene, about 400,000 years ago. At this time early *Homo sapiens* was beginning to supersede late *Homo erectus*. Humans had recently migrated from the tropics, and were beginning to hunt big game and develop sophisticated tool industries with considerable local variations.⁴⁴ Such large scale migrations and hunting suggest sophisticated abilities to coordinate and communicate. Similarly, increasingly detailed and varied subcultures suggest that increasingly sophisticated languages existed.

This stage extends right up to the onset of agriculture and civilization, where imagination begins to actively supersede tradition as the fastest expanding force in our evolution. Thus the stage in which tradition begins to take on a major role in our evolution, is essentially the stage occupied by pre-agricultural *Homo sapiens*. Views about such cultures are speculative. They are based not only on archeological investigations of Paleolithic cultures, but also upon more detailed investigations of surviving Paleolithic cultures, such as the Australian Aborigines.⁴⁵

The sources of these studies, and the anthropologists involved, will be relegated to footnotes.

As noted above, we must look at both the societies and intellects of these traditional cultures. Let's begin with their *societies*. They are Paleolithic and pre-agricultural. Their technologies are based on stone tools, and their economies are based on hunting and gathering. These economies are communal, egalitarian and undifferentiated.⁴⁶ These societies consist of simple bands (small groups of families united only by a shared language and sense of identity) or sometimes even tribes (where resources permit higher population densities). These tribes are larger, more complex and more differentiated than the bands from which they're formed. They arise in more crowded conditions to better settle disputes, resist attacks, etc., and are bound together by military associations, kinship networks, and other such mechanisms.

These traditional cultures aren't just economically egalitarian and undifferentiated, they're also politically egalitarian and undifferentiated. They lack official leaders with coercive powers. Decisions are made instead by group consensus.⁴⁷ The legal system does not consist of enforceable laws backed up by actual trials, but rather of unenforced arbitration by elders. Still, there are strong peer pressures to resolve conflicts, due to fears of escalating feuds. Because relations are intimate, evidence is rarely problematic, but where it is, there's recourse to supernatural arbitration in the form of, e.g., diviners.⁴⁸

Let's now turn to their *intellectual life*. Though it's speculative to theorize about the mental lives of past cultures on the basis of present ones, extensive cross-cultural studies do show systematic correlations between *technological-economic* development and *cognitive* development.⁴⁹ All traditional cultures seem to be quite sleepy and self-absorbed. They find little role for individuals or their still quite drowsy imaginations. They are simple, isolated and self-absorbed, as well as static and closed-minded. They are dominated by received opinion, and have little room for individualism or differentiation of private and public views. Here culture is a kind of corporate ego where experience is homogeneous, consensus is overwhelming, and subjective experience is ignored.⁵⁰ Action is homogeneous and rigidly enclosed by unbreakable taboos and rigid customs.⁵¹

This isn't to say that traditional culture lacks creative or critical thought.⁵² The point is just that such thought isn't as institutionalized in these cultures as it is in civilized cultures. While traditional culture is comparatively static and closed, individuals tinker with it and change it. But traditional cultures don't embark on systematic programs of conscious reform. They remain largely backward-looking rather than forward-looking.

Traditional life is intellectually simpler than modern life. Traditional cultures are oral and pre-rational rather than literate and rational. This is because traditional life is cognitively less demanding than ours, stressing conformity, tradition, affiliation and harmony with nature rather than individualism, progress, competition and mastery of nature. Traditional cultures lack the

systematic complexity of our urbanized, mechanized, scientific, and formally educated societies. All this inhibits the transition from impressionistic, preoperational thought to more systematic, operational thinking. Thought is still submerged in perception. It's lost in concrete, subjective detail and lacks comprehensive, objective perspectives. This lack of abstraction and distance from the world will be seen directly below in their *conceptual systems*, in their *individual concepts* and categories, and in the *thought processes* rooted in these structures.

Our own theoretical outlook contains logically structured taxonomies whose hierarchies exhaust all possibilities. But the conceptual systems of traditional cultures are relatively flat and rambling fields of everyday, concrete associations of direct use in simple life.⁵³ For example, camels may be marked by many overlapping terms keyed to gait, age, size, etc. and juxtaposed without systematic classification (e.g., into phylum, class and order).⁵⁴ These associative fields are further organized without taxonomies into realms of experience replete with cosmological, moral and symbolic significance.⁵⁵ For example, the Konso of Africa classify everything into either the realm of Earth (food, fertility, women, etc.) or God (sky, rain, wisdom, etc.) or the Wild (jungle, beasts, enemies, etc.).⁵⁶

Such symbolism is rooted in cosmology and penetrates every corner of life.⁵⁷ For example, only Konso elders can rule, for only they are of the realm of God. Women are of the Earth and are thus excluded from institutions. Mystics commune with spirits of the Wild and thus live by the jungle. Wild vegetation overgrowing their abandoned homes mustn't be cut. This symbolic imagery is based on rich emotional and factual associations of an impressionistic, implicit, precritical nature. It's arguably akin to collective dreaming. Still, it possesses strong coherence and order, and helps to reinforce the deepest values of these societies.

Individual concepts, too, are rich in concrete, factual bonds and lean in abstract, logical structure.⁵⁸ Strict definitions aren't needed. Words are usually tied to perceptually salient features and generalized via family resemblances. Such rules aren't stated explicitly, as in dictionaries. All this makes their application sporadic and impressionistic, as with the Russian peasant's statement that "A log is a tool because it works with tools to make things, and because pieces of logs go into making tools."⁵⁹ Such factors also tie concepts to practical, concrete experience. Illiterate Mano tribesmen of Liberia can classify bowls of rice in ways familiar to their culture, but only their formally educated children can classify geometric figures by color and number.⁶⁰

Basic categories also lack abstraction and systematization. Concepts of number are imbued with mystical and symbolic personality, and are tied to physical counters (fingers, stones, etc.).⁶¹ They are usually seen not as logical classes subject to operations, but as simple means of mechanical tallying. Conservation of measurement is also poor.⁶² It's inhibited by lack of standardized, commensurable units and by unsystematic concepts of dimensions. Indeed,

traditional cultures lack terms for many dimensions, and tend to see them as absolute rather than scalar (thus an object can't lose its largeness by comparison to another, larger one). Primitive concepts of quantity and magnitude are thus heavily preoperational.

Concepts of space are more concrete and topological than abstract and Euclidean.⁶³ These concepts are tied to the physiognomy of landscapes and are charged with cosmological and symbolic imagery (e.g., day and night link east and west with life and death). This, and the lack of Euclidean coordinating axes capable of accommodating all possible transformations, creates a geographical perspective of an absolute quality.⁶⁴ Thus, certain Papuans who traveled in WWII were amazed to see sunrises over mountains rather than the sea. Euclidean outlooks emerge from measuring and dimensional analyses during building, surveying and navigating.⁶⁵ Thus, the sophistication here of Polynesians and Eskimos, who travel over vast, desolate areas.⁶⁶

Primitive conceptions of causality are also heavily preoperational.⁶⁷ They lack mechanization, which allows manipulation of processes in ways impossible in the organic world, and which reveals how objects interact so as to objectify what was originally seen in subjective, anthropomorphic ways. Also, distinct realms of experience, each laden with its own imagery and personality, frustrate comprehensive, analytical taxonomies and inhibit coordinated, generalized thought. For example, shadows, sunlight, reflections, fire light, and marsh light may all be imbedded in different realms (earth, heaven, lake, village and marsh) rather than being species in a single scientific taxonomy covering illumination.⁶⁸ Thus shadows are seen not in terms of rectilinear propagation, but more as bodily emanations, or as the shades that survive death and visit us in dreams.⁶⁹

Traditional cultures thus explain causes metaphorically and anthropomorphically rather than mechanically.⁷⁰ Inanimate objects assume intentions, human events participate in celestial dramas, dreams bring messages from afar, symbols become real parts of objects they denote by which we can affect them. This is a recipe for a richly magical and mystical imagination that blurs man, nature and the supernatural.⁷¹ It is a poetic rather than analytic outlook. Its underlying unity springs not from the universal laws of a detached and theoretical perspective on nature, but quite oppositely, from a wholesale submergence in and identification with nature. Lost in concrete, subjective imagery, their dream-like logic allows a fluid, synthetic unity between all realms of being, so that different beings can readily commune with, participate in, or metamorphose into others.⁷²

These features are reflected in traditional religions. They share traits commonly possessed by all religions, notably, a reassuring world view centered on the divine or supernatural, supernaturally sanctioned moral codes, characteristic emotions (adoration, mystery, awe, guilt, etc.), practices for communicating and dealing with the gods, and institutions for organizing social life on the prescribed tenets. However, it is how traditional cultures emphasized and

developed these traits that differentiates them from subsequent religions.⁷³ As products of primitive thought, their world views are pre-rational, mythoepic and imbued with magic. This can be seen in their animistic mythologies, the shamanistic magic, and their characteristic motivating emotions.⁷⁴

People in traditional cultures lack our highly abstract reasoning capacity. They often find it difficult to master syllogistic relations when these transcend practical experience,⁷⁵ and they're often unable to frame their isolated reasons for practical activities into comprehensive arguments.⁷⁶ Social intimacy produces argumentation based on shared proverbs, imagery and traditions with little attempt to coordinate ideas abstractly.⁷⁷ It is oratory rather than reasoning.⁷⁸ Knowledge remains embedded in practice and explicit reasoning remains undeveloped because life styles are relatively simple and unproblematic, knowledge is seen as supernaturally given, and dogmatism stifles questioning.⁷⁹

In conclusion, then, thought in traditional cultures is preoperational.⁸⁰ That is, it's concrete (tied to the here and now), unsystematic (superficial and impressionistic, with no grasp of the underlying structures of reality), unreflective (lacking in self-criticism and reflection), and egocentric (trapped in its own viewpoint and unable to distinguish subjective interpretation from objective reality, so that dreams, intentions, symbols, etc., are reified).⁸¹

Early Civilizations

The account above of minds and societies in the traditional stage of our development will serve as a baseline in my attempt to show how minds and societies were organized into more rational forms (forms employing reason) as we moved into civilization. Two distinct substages exist in civilization: an *early phase* when imagination was used *practically* to construct the basic institutions of civilization, and a later, more *mature phase* (starting in the first millennium B.C.) when imagination was used *intellectually* to open up a role for great ideas in history. Starting with this early phase, we'll examine the mutual forging of civilization and reason. As above, we'll focus on social and intellectual organizations and their mutually transforming interactions. Again, the sources of investigations, and the anthropologists involved, are relegated to footnotes.

The transition into civilization began in earnest around the end of the last ice age with a series of internal transformations in our cultural motor (the dynamic interplay between minds and societies). With the more planned and resourceful social behavior bestowed by our symbolism, we were well equipped to exploit the new ecologies appearing as ice sheets receded. We turned from migratory foraging to a more settled life with brand new technological opportunities (agriculture, irrigation, metallurgy, etc.). Exploitation of these ecological and

technological opportunities initiated a causal spiral of progressive economic, social and political self-transformations that swept us from the Mesolithic through the Neolithic, and into the awaiting portals of civilization.⁸²

The basic stages of this development were everywhere the same⁸³ and broadly followed the familiar evolutionary pattern whereby system parts become increasingly specialized and at the same time increasingly interdependent and integrated into the whole. Simple, egalitarian bands with ephemeral leaderships and undifferentiated economies gave rise to chiefdoms with early prototypes of institutionalized leaderships, taxation and differentiated economic activities. Then, in confined, fertile regions (alluvial cradles), irrigation agriculture and population growth triggered complex economic differentiation and redistribution, social stratification, and political centralization.

Actual pathways to this more complex sociality varied, but always they funnelled into the same mold involving true governments in the form of theocracies with powers to tax, raise armies, wage war, make and enforce laws, etc.. They also had urban or semi-urban societies with dense, stratified populations, extensive architecture, and differentiated professions such as the priesthood, military and specialized crafts. All of these were supported by large trading networks, private contracts, and surpluses from irrigation agriculture. Their technologies introduced metallurgy (copper, then bronze), the wheel, the cart and sailing ship, writing, etc. All such civilizations (except the Incas⁸⁴) relied administratively on writing during their emergence, and in their maturity they produced the literate cultures normally associated with fully developed civilizations.

Having looked at the social changes in early civilizations, now let's turn to the *intellectual* changes. We just saw how traditional cultures were still quite confined in their horizons. They were small, rural, isolated and self-absorbed to the point of dogmatic traditionalism. But as civilization approached, we began to trade this sluggish dialog between static societies and drowsy imaginations for a more progressive dialog between more dynamic societies and bolder, more rational imaginations. We traded our intimate ties with our fellow men and with nature for more detached perspectives from which to better master our natural and social worlds in more rationally planned fashions. Urbanization played a vital role here. It introduced intense population pressures, extreme social complexity and powerful dynamics which broke down the old self-absorbed thought molds and introduced the more systematic and analytical ones necessary for large numbers of heterogeneous peoples within highly differentiated economies and societies to reach mutual understandings, work together and plan their futures together.⁸⁵

It was thus at this stage that our cultural motors (i.e., the dialog between our minds and societies) took on the more dynamic and progressive form of a dialog between civilized

institutions and rational minds. In this dialog, reason helped to forge civilization, and civilization helped forge reason. In this way, reason and civilization developed together, hand-in-hand.

Reason helped to forge civilization in that civilization's rapidly growing institutions became increasingly reliant upon trained, disciplined and educated minds to maintain and operate them, and to innovatively adapt them to evolving circumstances. Thus, more powerful cultural motors were developing with increasingly interdependent and interactive minds and societies. As already noted, urban economic and social structures were encouraging greater individuality and diversity in human thought, which in turn was allowing us to more critically articulate viewpoints and more systematically explore social opportunities.

But civilization also helped to forge reason. The great plasticity of our minds and growing complexity of our societies made imaginations both more reliant upon, and more a product of institutions. These institutions embodied our budding rationalities. They helped forge more rational, socially disciplined imaginations by furnishing us with the tools for more analytical thought (literacy, standardized measurement, currencies, etc.). These tools enabled us to penetrate beneath the subjective surfaces of phenomena, where primitive thought dwells, to their objective essences, which are invariant through change. These institutions also forged rational thought by channeling our thought into constructive arenas (trade and commerce, government bureaucracy, schools, crafts, etc.), which circulated, accumulated and systematized our ideas into rigorous systems of thought.

The primary arena for promoting more rational outlooks was undoubtedly *commerce*.⁸⁶ Technologies and economies had long been the most progressive force in social evolution. The Mesopotamians were perhaps the most advanced here. Their early law codes (ca. 2000 B.C.) indicate highly developed business practices, which included credit buying, lending for interest, deeds, promissory notes, principals and agents, and joint projects corresponding to stock companies. Such practices are evidence not only of a far more adventurous spirit than ever before, but also of more rationally developed intellects capable of fully analyzing possibilities and systematically planning for the future.

Commerce also played a crucial role in developing the tools for objective, analytical thought. Balancing scales, clocks, calendars, and standardized weights, measurements, currencies and writing systems permitted objective analyses of invariant features of the world.⁸⁷ Systematic measurements and coordinations such as these allow us to detach thought from perception so as to achieve more abstract, objectified perspectives on our world.

The proliferation of specialized crafts also played a big role here. Urban building often required sophisticated architectural planning involving precise measurements and calculations of layouts, materials and costs. Manufacturing of artifacts often required precise measurements and coordinated judgments of spatial interrelations. The surveying, mapping and navigating

associated with urban planning and foreign trade also fostered more abstract, coordinated spatial perspectives. With their more analytical approaches, their long histories of practical observations, and their less animistic notions of causation, these crafts became forerunners of international sciences.⁸⁸ This is apparent in, for example, the formulae of metallurgists and pharmacists, and the practical mathematics of engineers and city administrators which reduced the relations observed between general classes of events to abstract mathematical terms.

Also, early *governmental institutions* became important arenas in forging bolder, more rational thought molds. Urban and agricultural planning, taxing and financing, diplomacy and warfare, law and order, etc. all helped foster more rational, socially disciplined thought by systematically concentrating minds upon specific problems, and by providing frameworks for the circulation and systematization of ideas. Courts of law, for example, became more formal and rigorous through use of cross-examination, witnesses, evidence, and logical classification systems. This fostered more abstract, critical modes of argument than evident in primitive legal argument, which often relied on appeals to shared traditions and proverbs without actually seeking to prove points or coordinate thought abstractly.⁸⁹

Of all the tools mentioned above which forged rational thought, *literacy* is the most important. Like the other analytical tools just mentioned, it has its origins in trade and commerce. Also, its signs operate much like standardized weights, measurements and currencies in promoting standardized descriptions and objective analyses of the world. But the effects of writing here greatly outstripped those of the other tools. Writing greatly extended the chains of symbolic activity fundamental to both thought and communication, and thus played a crucial role in the civilizing of both our minds and societies.⁹⁰ It greatly enhanced the storing, reviewing and systematizing of knowledge, and greatly boosted the organization of our minds and societies into more hierarchically integrated and coordinated forms. It was an essential tool for the development of complex, urban governments (all of which were administered through bureaucratic records and documents) and for the emergence of many specialized cultural disciplines (history, science, literature, etc.) with their more rigorous systems of thought.

The earliest writing consisted of administrative, economic and legal records and documents (e.g., deeds and wills, tax and census records, memos and letters, receipts and inventories) often in the form of lists, which are difficult to maintain orally.⁹¹ These transformed not only the nature of transactions but also the thought behind them. Lists are abstracted more from immediate contexts than speech, and their clear-cut visual layout is in marked contrast to the flux and continuity of conversation. They encourage the ordering, manipulating and tabulation of their items, and bring greater visibility and abstraction to categories. The use of writing in governmental administration spread by about 2000 B.C. to include the first law codes. Writing sharpened their categories and systematized their classifications. It promoted more

organized and coordinated thought, and reinforced the moves mentioned above toward more formal legal procedures and more analytical forms of legal argument.

In the academic and intellectual sphere the earliest use of writing was in the form of lexicons. These embryonic dictionaries were apparently part of formal instruction in writing, but also may have been motivated by a curiosity about the structure and categories of language, and by a metaphysical sense that these investigations were penetrating into the objective structure of reality itself. This enterprise was later furthered by the Egyptian onomastica, some of which resembled primitive encyclopedias. They contained taxonomic classifications of all things, from the highest deities to the lowest occupations and humblest objects, with short abstract descriptions of each class. Again, we can see how written lists encouraged exhaustive enumeration of items with a systematic attention and abstract attitude toward the nature of classes and their interrelations.⁹² We will find a similar consciousness of form and structure in other emerging kinds of literature when we turn to mythology, below.

Writing helped foster early historical literature by permitting the development of archives, the critical scrutiny of records and annals, and the creating of formal reference systems of dates. Prior to written histories, it was difficult to perceive present changes as part of the cumulative past. But histories allowed us to check present ways with those frozen in writing, thus opening our minds to the possibilities surrounding us. In general, literature expanded our awareness of alternative outlooks across space and time by making wider ranges of thought available to us from our own and other cultures, both past and present. Writing had similar effects upon the development of science in general, as we'll see when we turn to the mature stage of civilization.

But the social factors reshaping the mentality of this era weren't all so progressive as these just outlined. Powerful religions greatly hampered the early development of free intellectual inquiry, and stamped these pursuits with their own dogmatic and mystical character.⁹³ The literary elites of the time were beholden to their priestly employers who maintained the great state religions which enshrined the values of their states and reinforced the legitimacy of the established orders. The literati systematized their doctrines into dogmas, rather than opening up a genuine dialog of free intellectual inquiry. A scholastic spirit took hold, often tinged with mystical reverence for their writings and symbolisms, so that literature was passed down faithfully through the centuries without change. There was a notable lack of philosophical or moral dimensions to the literature of this age. Similarly, formal education of this era often seemed to emphasize rote learning and mechanical reproduction of materials at the expense of stimulating questioning and thinking for oneself. In this sense it was only just emerging from primitive education (which seeks to perpetuate the status quo) into modern education (which is a mechanism for analysis, questioning and change).⁹⁴

As we'll see later, the apparent lack of abstract, theoretical dimensions to early science may in part be due to these dogmatic, mechanical educational methods of the temple schools. Mathematics, for example, was heavily dependent on trial and error, and empirical measurement rather than theoretical proof. It gives every appearance of just beginning to emerge from the concrete into the formal stage. In the empirical sphere, scientific evidence was often adjusted to fit sacrosanct religious premises (e.g., that gods sent prophetic signs to man via the entrails of sacrificial offerings). In fact, the whole era was very much under the spell of religion's mysticism and magic.

It is this extreme intellectual conservatism that gives early civilization its transitional character in the shift from the tradition-bound cultures prior to civilization to the boldly intellectual civilizations about to come. Unsurprisingly, it's in *religion* itself that this transitional character and traditionalism of early civilization is most pronounced.⁹⁵ Early civilized religions were developing many familiar traits of the world religions of mature civilization, such as highly organized and authoritarian institutions, rituals and belief systems with coherent dogmas,⁹⁶ and increasingly centralized pantheons to unify into more homogenous wholes the diverse peoples encompassed by expanding empires. Yet, like the traditional religions they superseded, early civilized religions retained a preoccupation with nature worship, sacrificial ritual and material (rather than spiritual) salvation.

But the transitional character of early civilized religion is most evident in its moral and intellectual sphere, where it retained much of the mytheopic and self-absorbed character of the traditional mentality. Even as religious thought was being organized into the more coherent and thoughtful bodies of literature which slowly raised it to more rational (concrete operational) stages of thought,⁹⁷ it continued to strongly exhibit the pre-rational (preoperational) adherences noted above in earlier, traditional religions (i.e., self-absorption, fixation on superficial features, and lack of comprehensive perspectives). Let's look more closely at these *pre-rational* features preserved in its mythologies.

A basic feature of mytheopic thought is its poetic character. It addressed human concerns in the simplest, most direct and natural ways. Its perspectives weren't from sophisticated rational theories, rigorously and laboriously constructed, but from primitive emotional and intuitive insights. This helps to account for the persistence of myths across these different stages noted so far. Even in its civilized form, mythology still retained this ancient poetic character essential to all myth. That is, it always retained the quintessential character of emotional and intuitive imagery which so characterizes poetic thought.

This strongly and pervasively emotional character of myth is evident in its motivation, outlook and imagery. Myth helped meet our need to make sense of our triumphs and tragedies, of life and death, of order and chaos. Its themes include epics of creations and apocalypse, accounts

of fertility and death, immortality and afterworlds, and explanations of how particular natural phenomena (e.g., fire, medicine, agriculture) came to be.⁹⁸ Mythologies meet our need for meaning, order, security and belonging. Life is seen as an unbroken solidarity of man, gods, nature and ancestors. This great community of life transcends space and time and death.

The world order and our place in it is explained in terms of great dramatic conflicts between the gods.⁹⁹ These deities, as our surrogate guardians, give us comfort and security in an often frightening world. They give us collective identity and belonging in an otherwise empty and lonely world. Myths, in fact, address all our emotions, whether serious or playful, joyful or somber, tragic or heroic. This is because, as just mentioned, they are not products of detached intellects scientifically contemplating a physical world; instead they're anthropomorphic products of less sophisticated men confronting nature face-to-face and personality-to-personality.

The strongly intuitive nature of myth also contributed to this anthropomorphic character. Lacking in abstract, analytic perspectives, intuitive imagery is impressionistic and superficial, and unable to systematically penetrate beneath the subjective surfaces of things to their objective essences which are invariant through change.¹⁰⁰ This difficulty in distinguishing subjective interpretation from objective reality leads to the blurring of boundaries between, e.g., inanimate and animate things, perception and dreams, symbols and reality. As we've seen, this is the basis of an animistic, magical conception of causation. Just as this subjective imagery blurs self-and world, so all realms of being, (whether human, natural or supernatural, living or dead, past or present) are blurred into a fluid, synthetic unity. With dream-like ease all beings can readily commune with, participate in, or transform into one another.¹⁰¹

This dream-like fluidity and richly synthetic character of mytheopic imagery extends all the way from its world view of a great community of life, down to its most basic conceptual categories. In mytheopic time, man could arrange his life in harmony with, and actually participate in, ancient cosmic events (e.g., Mesopotamians and Egyptians often postponed coronations until the beginning of natural cycles such as New Year's Day, which was seen as participating in the first day of creation).¹⁰²

Participation also pervaded the mytheopic conception of space. This was the basis of the Babylonian astrological correlations of heavenly and earthly locales and events.¹⁰³ The phenomenon is also evident in the Egyptians' identification of certain of their temples and tombs with the primeval hill (that first emerged from the primeval waters) based on their architectural similarity, even when these structures were great distances apart.

In general, mytheopic space and time were seen in concrete, qualitative terms rather than as abstract coordinating systems, and they were permeated with cosmological and symbolic imagery and emotional color. The best single example of all this is perhaps the Egyptian interpretation of day and night as linking east and west with life and death.¹⁰⁴

Mytheopic causality is also heavily prone to subjective imagery rather than objective analysis.¹⁰⁵ For example, change is made comprehensible not in terms of impersonal laws, but by intentional metamorphoses (as in the early stages of the Egyptian and Mesopotamian cosmologies) or by the reification and personification of processes such as War, Time, Death and Life (e.g., Babylonians saw the end of droughts as a gigantic bird covering the sky with black clouds and devouring the bull of the heavens with its scorching breath).

Mytheopic causation is highly magical. Magic stems from the highly emotional and intuitive nature of preoperational thought. It stems especially from the way preoperational thought blurs objectivity and subjectivity, and from the animistic character of preoperational concepts of causation. Magic is seen as working, on the one hand, through physical contagion or contact (as when a cannibal eats an opponents heart to gain his strength). This is animatism, of which mana is a well-known example. On the other hand, magic is seen as working through imitation (as when voodoo dolls are used to hurt the people they represent). Here the subjective properties of symbolism are being treated as objectively real: spells, incantations and magical symbols are all seen as exerting influences on what they represent.¹⁰⁶ For example, harm can be brought to people by abusing their names; ills can be transferred from one object to another with incantations; words can bring into existence that which they stand for.¹⁰⁷

Thus, the mytheopic mentality of early civilized religion continued to exhibit strongly *pre-rational (preoperational)* adherences, even as it being was organized into the more coherent and thoughtful bodies of genuine literature. This literature slowly helped to raise thought to more rational (concrete operational) stages. Furthermore, this mentality also exhibited the *conventional morality* which typically aligns with this latter stage of conceptual development.¹⁰⁸

The conventional morality of this stage was conformist, intolerant of nonconformity, and motivated more by shame at violating social rules than guilt at violating private inner principles (the “herd mentality”).¹⁰⁹ Its character stems in part from the preoperational thought upon which it is based (see above).¹¹⁰ Thus, values are often thought to reside in external events and actions, not in interpersonal relations or standards.¹¹¹ In conventional morality has an egocentric inability to get outside its own perspective, which often caused it to confuse subjective interpretations with objective realities. It thus reified rules into near-sacred realities or held magical conceptions of punishment.¹¹² Its concreteness keep it from discerning the emotional conflicts within the mind and from appreciating the contributions of the mind itself to morality, with the result that rules are followed literally with little concern for their motivation or intentions.¹¹³

Thus, the transitional character of early civilized religion was most evident in its still heavily pre-rational mythologies and heavily self-absorbed conventional moralities. Perhaps most importantly of all, these mytheopic, self-absorbed mentalities lacked the most crucial trait of the world religions about to come, namely, their deep-felt senses of universal moral

responsibility. Development of this trait will be covered below.

Thus we find a characteristic split-mindedness in the development of early civilizations. The more progressive *practical* sphere of economics and technology exhibited real progress from the preoperational stage into the concrete operational stage. This appeared in the development and use of standardized systems of measurement, currency and writing, as well as in the development of professions like engineering, pharmacy, law, and metallurgy. But the *intellectual* sphere, which was dominated by religion, still adhered to pre-rational, mythic thought. Correspondingly, moral thinking dwelled at the self-absorbed level of conventional morality, partly due to the concrete, pre-rational adherences of the thought processes upon which it is based. In sum, while the practical sphere was advancing, the intellectual and moral sphere was (at least temporarily) inhibited by mysticism, ritualism and dogmatism. This is the main reason for calling early civilizations “*transitional*” in character between the traditional cultures prior to civilization, and the boldly intellectual civilizations soon to come.

Mature Civilizations

As civilization matured, it turned to these areas left relatively untouched by early civilization. While early civilization had employed imagination in a practical manner to construct the basic institutions of civilization, these more mature civilizations now employed imagination intellectually to open up a vital role for ideas in history.

The stage was set for this in the Iron Age. By the end of the second millennium B.C., as the Iron Age was beginning, civilization was beginning to diffuse, partly through commerce, partly through imitation by those outside the great river valleys, and partly by the great waves of Indo-European invasions pushing east and west into the Near East, India and China. Although these invasions brought great turmoil, they also expanded civilization. Indeed, civilization swelled more in the first half of the first millennium than in all previous millennia combined, so that by the middle of this millennium civilization extended virtually non-stop from Spain to the Ganges, creating a great reservoir of imaginative experience.¹¹⁴

Civilization matured into richer, more powerful and more cosmopolitan forms at this time. Expanding commerce produced greater prosperity. Better means of transportation and communication emerged, and larger empires with wider visions appeared. In the first millennium B.C., growing literacy, education, trade, travel and empires created more cosmopolitan and sophisticated civilizations than ever before. The emergence of an increasingly international economy opened the way for more universal outlooks.¹¹⁵

It was in these conditions that the *literate* cultures from the previous stage began to bear

real fruit. Literacy was initially taught in temple schools as part of the professional training of administrative recruits.¹¹⁶ But easily learned alphabetic scripts spread literacy further into the population at large. Literacy was central to the long, gradual shift in education toward more formal methods. These methods abstract instruction from its applied contexts, articulate knowledge in general terms, and stimulate questioning and more theoretical, reflective approaches. Writing was instrumental in this promotion of more abstract, reflective and decontextualized knowledge because it freed speech from its fleeting, face-to-face contexts and cast it into the form of an enduring object, so we could better systematize and elaborate knowledge.¹¹⁷ As we saw in the previous chapter, these more systematic, abstract conceptual schemes are the portals to more systematic and coordinated thought. Such schemes promote greater critical awareness of our thought, thus allowing us to see our immediate situations as mere alternatives within whole systems of theoretical possibilities.

Writing thus greatly advanced the effects of language on thought. By advancing the fusion of thought and language into an ever more powerful tool for analysis and communication, writing greatly boosted language's ability to emancipate minds and societies from their immediate environments. Writing brought minds and societies ever closer and more powerfully together into more organized and resourceful forms for the construction of more elaborately planned and complexly structured forms of life.

The ancient stranglehold of the priests upon culture was challenged at this time by fresh, new minds. They arose as literacy, literature and leisure time spread beyond the clergy and ruling elite. They also arose as a response to expanded horizons and aspirations in this prosperous, cosmopolitan age. With the clear light of reason, they assailed the priest's old tools of darkness, magic and fear. They continued to ponder the timeless questions and concerns of the old myths, but they relied less and less on the old poetic imagery of magical and mythical thought. Their horizons became broader and their methods more rational. They undertook bold searches for universal order in the form of metaphysical unity, moral perfection, and physical law.

Let's look now at this development of reason in *religion, ethics, philosophy and science*, respectively. In the case of *religion*, the flourishing of reason is most clear in the reaction to magic and myth. Mytheopic thought impeded reason because its lack of comprehensive, abstract perspectives left it so self-absorbed as to impede reflection and criticism. Magic further obstructed reason due to its emphasis on rigid, mystery-shrouded spells rather than on free, open thought.

Magical, anthropomorphic conceptions of causation were by this time receding before the sway of science and technology. Sacrifice to rain gods and fertility gods was being replaced by irrigation and grain stores. Animistic conceptions were replaced by more operational conceptions as advances in technology and science helped to reveal how things really interact in the world.

These disciplines helped to foster experimental and hypothetical thought and a more objective, depersonified approach to causation. Moreover, magic rituals were increasingly seen as missing the whole point of true religion. There was a growing sentiment that men must begin to deal as rational individuals with their spiritual salvation, and that they must break with the superstitious, fatalistic stranglehold of priestly rituals and capricious gods upon their minds.

In this way civilized people began to step out of the archaic world of darkness, magic and superstition into the more modern world of light and reason. Religious reformers began to look for salvation through rational, moral conduct, rather than through winning favor with jealous, capricious nature gods or through controlling magical forces in nature.

This rejection of magic for reason was quite evident amongst the Hebrews. Because Yahweh demanded righteousness rather than sacrifice, he was a god they could deal rationally with. Isaiah (1:11-18) says in God's name, "Bring no more futile sacrifices Come now, and let us reason together." These great Hebrew prophets were among the first to see God's will in terms of an intelligible moral purpose within history. Historical trials were due no longer to the whims of capricious gods, but to human sin in violating moral laws. This in effect made humans responsible for their history in clear, rational ways. This was a morality based upon conscious choice, upon a covenant between Yahweh and the Jews. This choice became a matter of personal commitment in prophets like Jeremiah and Ezekiel (whose prophecies spanned 626-570 B.C.).

Similarly, these religious reformers distinguished clearly between magical coercion and prayers appealing for help.¹¹⁸ Attempts to magically coerce the supremely moral God or to gain its favor by sacrificial offerings were now seen as absurd impieties. Isaiah 1:11-18 is, again, a good example here. Jeremiah (e.g., 31:31-34) goes on to envision a redeemed Israel where worship of Yahweh is no longer based on the hollow formalities of the temple, but upon a personal affiliation between God and the individual.

In mystical religions, it was meditation rather than prayer which were put before magic ritual (see, e.g., *Mundaka Upanisad* I.i.4-6, I.ii.10-11, III.i.5,8 or *Maitri Upanisad* IV.1,4). In either case, magic rituals by priests were replaced with free, conscious choice by the rational, reflective individual. The individual was personally responsible for his own righteousness and personal salvation. Religion thus became more a matter of right beliefs than of right rituals: it became more a matter of positive aspirations than rigid rituals.

Along with this shift of emphasis from magic to prayer or meditation, we also find a shift in emphasis from *overt* conformity before ritual and law to an emphasis on *inner* piety. We've already seen how early religions fixate on overt acts and neglect inner attitudes. This stems partly from an inability to reflect abstractly on things, including the mind itself. Motives are poorly distinguished from the concrete deeds which spring from them, so that rules are followed slavishly and literally, with little appreciation of the spirit behind them. But world religions drew a

firm contrast between one's inner spirit and one's outer actions, and stressed inner piety and commitment over mere conformance to public rituals.¹¹⁹ Of course, subsequent history would shift between these poles of religion based on conscious personal commitment and religion based on conformity to rites and laws, but the point is that the pole of individual choice was now finally appearing in history.

This shift of emphasis toward the inner spirit is quite evident in certain Hebrew prophets, as well as Jesus Christ, who saw salvation in terms of a profound transformation of our selfish and sinful nature through loving devotion of a God of justice and love (see, e.g., Jer. 31:31-4, Mt. 5:8, Mk. 7:5-8, Mt. 22:37-40). This emphasis is comparable to Hinduism's devotion (bhakti) to its various divinities (in, e.g., the *Bhagavad-Gita*), as well as Buddhism's devotion to its bodhisattvas (in the Mahayana scriptures).¹²⁰

New concepts of *spirits* were crucial parts of this shift from religions centered on priestly magic to the newer conceptions of religion as quests for moral and spiritual perfection by rational, reflective individuals. The psyche, for example, evolved from a quasi-material entity identified with shadows, breath, etc. (which is still evident in, e.g., the *Odyssey* bk. 11 and Daniel 12:2) into the familiar immaterial entity that's the seat of our spirituality and inner morality. The concept of god also became more abstract and exalted (the culmination of the steady coalescing of spirits from animism to polytheism, and then monism). In the theistic traditions, this led to the conception of an all powerful being who is the source of all existence, value and salvation.¹²¹

This ethical monotheism was quite apparent in many of the great Hebrew prophets. They proclaimed that there is only one reality: God and his moral commandments. Their moral interpretation of history demanded this monotheism.¹²² No longer was Yahweh just one of many Gods who jealously demanded that no other Gods be worshiped before him. He was, instead, the righteous father of all men and all nations. He was the one, universal Lord of all creation and history. This single, almighty¹²³ God was no longer immanent,¹²⁴ but absolutely transcendent. He was not in natural objects like the sun or earth, but wholly above nature.¹²⁵

These monistic tendencies varied between cultures. In China, there appeared an increasingly depersonified notion of an impartial, universal heaven. Belief in a preestablished sympathy between earth, man and this creative, protective heaven became central to most classical Chinese thought, and was eventually called the "Tao" (e.g., see the *Book of Odes*, no. 267). Monistic tendencies in Greece can be found in the mystery cults (which worshiped a single God who died and was resurrected as a personal savior), as well as in the coalescing of power around Zeus in the pantheon of the civic religions. This latter tendency (toward a monarchical god who rules over all others in the pantheon) was in fact quite widespread as empires incorporated smaller states, and as rulers looked for higher gods to command the allegiance of all their peoples. In India and Egypt the tendency toward monism took yet another route. Rather than looking to a

monarchical god or a single all-powerful god, the orthodox tradition tended to assimilate many gods to one god with many names or faces (see, for example, the *Rig Veda* hymns to Brahman or the Middle Kingdom hymns to Osiris). This seems to be an anthropomorphic polytheism groping toward pantheistic monism: the great cosmic being constitutes everything and is everywhere (compare the Greeks, above). In India this led eventually to diverse views, including the monistic idealism of Samkhya and the henotheism of the *Bhagavad-Gita*.

In sum, then, these new, “world” religions were defined (initially) by their *skepticism of priestly magic and their acceptance of a more reasoned conception of religion as a quest for moral perfection and spiritual salvation by rational, reflective individuals*. Correspondingly, there were shifts toward more abstract and exalted notions of the spirit, and toward the inner aspects of religion such as piety, conscience and prayer (versus overt aspects such as rites). In this way, the new religions built upon the older ones, incorporating many of the myths, taboos, magics and rituals of the old religions, but at the same time extending the old religions in powerful new ways by adding bolder ethical dimensions to them, and by turning from pre-occupations with basic subsistence needs to higher needs of self-fulfillment.¹²⁶

Reason also flourished in *ethics* at this time. Just as thought (in science, philosophy, etc.) was shifting from insular, self-absorbed forms with limited horizons to more abstract, reflective forms with greater power and mobility, so morality was making a similar shift (at least among the intelligentsia).¹²⁷ It shifted from insular, self-absorbed forms stressing blind conformity to more reasoned, reflective forms stressing principled choices by autonomous individuals.

We’ve seen how earlier moralities were mainly conventional. They were highly conformist, intolerant of nonconformity, and motivated more by shame at violating social rules than guilt at violating private inner principles. We also saw how they showed more primitive, pre-conventional or preoperational adherences. Value was sometimes seen in quasi-physical terms such as the satisfaction of physical needs or physical pollution and purification. Its egocentric inability to get outside its own perspective often caused it to confuse subjective interpretations from objective realities, and thus led it to reify rules into near-sacred realities or to hold magical conceptions of punishment. Its concreteness hindered it from discerning the emotional conflicts within the mind and from appreciating the contributions of the mind itself to morality, with the result that rules were followed literally with little concern for their motivation or intentions.

By contrast, postconventional morality is autonomous and principled, universal in its embrace, fully internalized, and productive of more reflective and integrated personalities.¹²⁸ This list can be elaborated upon briefly.¹²⁹ To begin with, postconventional morality is fully *internalized*, due to the abstract, reflective character of thought at this stage. That is, morality is no longer seen in terms of external conformity to social rules or in terms of quasi-physical acts.

Instead, value resides in inner *principles* chosen rationally by the *autonomous* individual through critical, reflective thought.¹³⁰ Also, morality is no longer seen in insular, egocentric terms of responsibility to one's own group, but in terms of responsibility to these rational principles of *universal* application.¹³¹ Similarly, *tolerance* of other's views is much more apparent, given that morality now stems from autonomous choices and respect for others. Guilt is now the prime motive for conduct, not social shame, for external trappings now matter less than inner ideals. Finally, because thought is more abstract and less concrete, it is better able to reflect on its own operations. Thus, conflicting roles and emotions are now confronted and reconciled into more *integrated* and differentiated personalities.

Reason also flourished with the rise of *philosophy* and *science* at this time. They arose through the demythologizing of thought and the development of more abstract, critical and systematic methods in the search for first principles. It's not always easy to distinguish early science and philosophy from each other, or from the religions from which they emerged. In fact, philosophies, sciences, pseudo-sciences and religions quite often overlapped and blurred together. Early science and philosophy were united by their inheritance of ancient mythological concerns and ideas. But they differed in their basic assumptions and methods.

Philosophies differed from the old mytheopic thought in their skepticism at the traditional polytheism, their critical attitudes toward each other, and in the abstract, systematic character of their thought. They formulated coherent, methodical arguments for their views about knowledge, reality and values which took them beyond the old, chaotic polytheisms to grasp the most fundamental unifying principles of reality.¹³² They sought the ultimate ground, the metaphysical womb of all being, in more abstract, less mytheopic terms than ever conceived of by the old polytheisms. They spoke not of sky gods and fire gods, but of supreme realities such as the imperishable, all-pervasive Brahman (India), the universal protective Heaven (China), or the eternal, unchanging One (Greece). They spoke not of the impulsive whims of deities, but of abstract principles of cosmic law such as Rita or Karma (India), the Tao (China), or the Logos (Greece).

These first principles were principles of supreme unity and perfection. In this way, these philosophies parallel the growing monism we saw above in the religions of this age. Both were now producing more coherent, systematic, reasoned answers to the timeless questions about man's predicament and salvation raised long before by mythology. However, they differ in that religions tend to justify their beliefs more in terms of *contact with the supernatural* through revelation and communion, while philosophies tend to justify their beliefs more in terms of *critical argumentation*.

Rationalist philosophies (such as the Pythagoreans and Eleatics in Greece, and Neo-confucianism in China) were intrigued by the powers of mathematics and logic. They thus

employed pure reason to reveal the ultimate metaphysical principles of reality. Empiricist philosophies (such as the Hippocratic school of Cos in Greece and the Carvaka system in India) were unimpressed by the dogmatic, unverifiable claims of such rationalists, and were more impressed by the successes of empirical science. They thus sought to limit knowledge to what can be known through the empirical observation. Mystical philosophies (such as the *Upanisads* in India, and in some ways, Taoism in China) espoused unification with higher reality by means of mystical, intuitive communion.

These philosophies differed from the *empirical sciences* in that the former weren't concerned with explaining the empirical world, but rather with abstract, untestable speculations about the overall nature of substance, causation, knowledge, etc., as well as the meaning, purpose and values in life. However, these philosophies also resembled the empirical sciences in some ways. Both emerged together as critical, reflective approaches to the traditional concerns of myth, and offered more abstract, systematic and coherent answers (to similar questions) than these myths. It is in this sense that we can speak of them as being more rational modes of thought than the mythopoetic thought they replaced.

It is this *rational, critical* nature of science which needs to be kept in mind when comparing it to its precursors in myth, which were *pre-rational and pre-critical*. Profound differences between the two might be denied, on the grounds that both seek to reduce the world's observable diversity to an underlying simplicity, and both utilize increasingly abstract levels of explanation so as to explain more and more in terms of less and less. R. Horton replies that science is comparatively progressive and open to competing alternatives, while myth is comparatively backward-looking and closed to competition. This lack of a skeptical, critical tradition is primarily attributed by J. Goody to their lack of literacy.¹³³

However, this open/closed dichotomy, which derives originally from K. Popper, has been challenged by T. Kuhn on the grounds that it's only when we close in on a paradigm that we can get on with science (compare dreamy Presocratic speculation with Hellenistic puzzle-solving). An obvious compromise is that while science is "imprisoned" to a degree by paradigms (and thus resembles myths), it isn't imprisoned to the extent that it's wholly closed to new ideas and evidence accumulating over generations (for otherwise its periodic revolutions couldn't occur).

This compromise preserves the science/myth dichotomy by referring to the critical/pre-critical dichotomy noted above. This recognizes that science involves the *demythologizing* of thought. It involves systematic exploration of all possible alternatives in more objective, self-critical and less superficial and self-absorbed fashions than in myth. This yielded more coherent systems of thought with broader perspectives and greater degrees of critical response to competing systems. It brought greater lucidity and order to our vision of the world.

Another compromise (or synthesis) is in order here between *psychological* emphases on

the operational character of scientific thought (and preoperational character of mythoeopic thought) and *sociological* emphases on the openness of scientific institutions (and closedness of traditional religion). Here Goody's largely sociological emphasis on how literacy opens up institutions needs to be synthesized with largely psychological emphases like Vygotsky's, Bruner's and Piaget's on how literacy transforms thought processes (see previous chapter). Unfortunately, Goody doesn't seem to recognize this.¹³⁴

At any rate, the powerful method of science emerged only gradually over the centuries. Science, at least in the broad sense of a systematic, effective body of knowledge, extends far back into pre-history to the early practical wisdom that humans accumulated in their intercourse with nature. Writing greatly facilitated the accumulation and refinement of such wisdom in early civilizations.¹³⁵ Early civilizations in Mesopotamia, Egypt and China developed extensive bodies of knowledge about pharmacology, chemistry, medicine, geography, astronomy, mathematics, etc.¹³⁶ But their science was crude, practical and concrete compared to later science.¹³⁷ They lacked the sophisticated mathematics and experimentation of later empirical science, and the rigorous theoretical proofs of the later mathematical sciences. Furthermore, their explanations remained heavily mythoeopic, and they lacked the thoroughly critical spirit so vital to scientific method. In fact, they were still entranced by magic, and their techniques were enshrined in canon and carried on for centuries with great reverence.¹³⁸

Some of these new "sciences" were no more than pseudo-sciences like alchemy and astrology. That is, they were basically just new rationalist forms of magic. Similarly, there arose searches for mystical essences. These sought insight into the ultimate structure of reality, which somehow informs the empirical world. Examples are the early lexicons of Mesopotamia and Egypt, the Pythagorean number mysticism, the classification systems of the *I Ching*, and even to a degree later systems, like the Platonic and Aristotelian theories of forms and the Confucian rectification of names. True empirical science differs from pseudo-sciences like astrology in that it retains only theories which survive rigorous empirical testing.¹³⁹

The first steps toward breaking with the old mythoeopic explanations which so entranced these early civilizations came with the Miletian school in Greece¹⁴⁰ and the Yin-Yang school in China.¹⁴¹ They began to avidly turn reason upon old mythoeopic speculation to produce depersonified explanations of natural events. Yet they still persisted in vague poetic speculations, rather than pursuing quantifiable, testable laws of nature as genuine empirical sciences would soon do. That is, their thought retained strong preoperational adherences. In the area of mathematics, the Pythagoreans introduced abstract, theoretical dimensions and canons of rigor and proof at this time. But so transfixed were they by the powers of mathematics that they looked upon numbers with a mystical reverence (much as the *I Ching* did with its categories). This, too, is a preoperational adherence (it is conceptual realism, which has affinities with sympathetic

magic). It coexists right alongside their development of formal operations in their geometric proofs.

Eastern science didn't progress beyond this point (until quite recently), despite many impressive technological achievements.¹⁴² In the West, however, rapid progress was made. The greatest advances in classical science came from Aristotle. He was not only the father of formal logic, but also of biology. His vigorous empiricism was a vital step in the evolution of empirical science. Yet he, too, had shortcomings. His approach to empirical science lacked the provisional, experimental character of modern science. Instead, he saw such science as consisting of deductions from essential truths about phenomena (e.g., flames rise because this is the essential nature of fire). Also his science failed to appreciate the power of mathematical constructs. He remained instead at the superficial level of qualitative, verbal formulations of the essential natures of readily observable phenomena.¹⁴³

The Hellenistic era was one of the most fruitful scientific eras in history. This cosmopolitan culture developed a truly international science which drew on the great store of Near Eastern observations, but extended it in bold, new ways. They wedded mathematics and observation to uncover the mathematical laws underlying these observations. Erastheneis calculated the earth's circumference to an accuracy of four percent. Aristarchus advanced the heliocentric theory. Euclid compiled a standard text of geometry which is still used today. But such advances ceased at the end of the second century B.C., and energies were diverted into scholasticism and pseudo-sciences (though great summaries of past works were compiled by Ptolemy, Strabo, Galen, etc.). Hellenistic science, for all its great achievements, was hindered in the end by its crude instruments and poor experimentation.¹⁴⁴

Modern science resurrected Hellenistic methods, and further extended them, beginning in the sixteenth and seventeenth centuries. It wedded Aristotle's empiricism with the powers of mathematics which had so entranced Pythagoras, as well as theoretical constructs like those postulated by the Atomists. Furthermore, it put a far greater emphasis on the experimental, provisional nature of science than ever before. The formulation of this method was a synthesis of rationalist views, including those of Descartes (which stressed the mathematical, deductive character of science), and empiricist views, including those of Bacon (who emphasized the experimental and inductive character of science). The synthesis was perhaps best evident in Galileo, who stressed the need for observation and experimentation, but also stressed the need for mathematics to plumb beneath observations for the primary structure of nature (thus his distinction between primary and secondary qualities).¹⁴⁵

The astounding successes of modern science at the hands of Copernicus, Kepler, Galileo, Newton, etc. captivated the modern imagination as a whole. This stimulated the birth of modern philosophy in the seventeenth century. Beginning with Bacon (1561-1626) and Descartes (1596-

1650), philosophers consciously turned away from traditional authorities recognized by the church, toward the clear light of reason. They often wrote outside the church-dominated universities, and in the vernacular, rather than Latin. Their thought was freer, bolder and more secular. In other words, they were once again emancipating philosophy from religion by reclaiming the critical spirit. Their views about the proper role of reason and experience in gaining knowledge echoed ancient debates on the subject, and were ultimately synthesized in figures like Galileo (1564-1642) and Kant (1724-1804).

This progressive, scientific spirit spread not only to modern philosophy, but to modern politics as well. It did so during the Enlightenment of the eighteenth century. It was here that the defining values of modern Western civilization (which are in fact the very embodiment of science) came together, namely, belief in *reason, freedom, progress and secularism*.¹⁴⁶ This occurred as the idea emerged that progress was possible in the political sphere just as it had been in the scientific sphere. It was felt that reason would allow us to grasp all the laws of nature: physical, social and moral. Paramount among these natural laws were the natural rights of man. By daring to use our reason, we could perfect our societies so that they guaranteed these rights. Moreover, we could do so alone, without God and the church, which had often obstructed such progress in the past. It was thus as this idea of progress spread from its home in the sciences into the political world that the Golden Age, which had been located in the past by more traditional cultures, was now put in man's future.

This progressive, scientific spirit spread not only into philosophy and politics, but into *technology* as well: and it was here that its affect was perhaps most profound of all. The industrial revolution began in the modern West because of a number of factors, including the lack of a slave economy to inhibit the exploitation of inventions, and the existence of an especially vigorous capitalist system to finance more efficient means of production. But another reason was that modern science had overcome the shortcomings of ancient science (e.g., lack of sophisticated instrumentation, the failure to wed systematic experimentation with powerful mathematical models). Moreover, as just noted, modern science had helped to plant in the modern imagination the idea that we could scientifically remake our future.

Here, in the industrial revolution, the progressive spirit of modern life completely transformed our lives. It did so by transforming transportation, energy production, communication, etc., and by helping to create mass prosperity, mass consciousness and popular government. In doing so, it has advanced man's ability to achieve not only his basic material needs, but also freed him to pursue his further needs of creative self-expression.

Recap

Above, we've examined how we became more rational, in the sense of becoming better able to reason, by looking at how civilization and reason emerged together out of simpler forms of mentality and sociality. We can now combine these findings with those from our account of the emergence of individual autonomy at the start of the chapter, where it was shown how individualism flourished with the advent of reason and civilization. Together, these accounts show that *as civilization matured, it found a growing role for the rational individual.*

It was with the advent of civilization that *rational*, reflective, critical thought began to emerge from dreamy magic and myth. Humans shed their sleepy self-absorption for broader horizons. They set out on systematic quests for rational principles and universal order; they turned from mytheopic to scientific explanations, from polytheistic to monistic religions, and from insular to universal moralities.

At the same time, the autonomous, reflective *individual* began to emerge from the unreflective herd. Moralities began to value the private dictates of conscience over blind, public conformity to social rules. The individual began to reflect upon his higher needs, his self-identity, and inner conflicts like those between his civilized and animal nature. He began to consciously shape his personality with an eye towards well-balanced fulfillment of his individual potentials and feelings. He began to grow into the more humane, rational forms suitable to mature civilization.

Perhaps the briefest way of summing all this up is to say that mature civilization was turning away from the dreamy, mytheopic thought and self-absorbed herd mentality of archaic society, and was fostering, instead, rational, critical thought by autonomous, reflective individuals. *Rational thought* and *individual autonomy* can be seen as the two of the most important products of mature civilization. They help us understand its persistent preoccupation with universal perspectives, fundamental principles, individual conscience, humane society, inner harmony, personal growth and spiritual salvation.

We've seen how this emergence of the rational individual initiated a far more dynamic form of the cultural motor than ever before. We've traced how our individual minds and socio-cultural institutions steadily built upon each other, both becoming gradually richer and more diversified in their contents, more hierarchically integrated in their structures, broader and more ambitious in their horizons, and more systematically coordinated in their operations. It was through this transformation of the ancient cultural motor into a powerful dialog of civilized institutions and rational imaginations that humans distinguished themselves from all other species. It is the basis of our mastery of both ourselves and our world.

We've also seen how this growing role for the rational individual reflects the shifting

relationships between our biological, social and mental evolutions. We traced this shift through the progressively greater levels of mental and social autonomy achieved as humans moved from the predominantly instinctual life of a pack hunter in early Homo species, to the culturally sophisticated, yet predominantly traditional life of Homo sapiens settlements starting in the last ice age, to the highly imaginative ways of life in civilizations starting several thousand years ago.

These heydays of instinct, traditions, and imagination, respectively, represent a *shifting center of gravity* between, genes, culture and intelligence, respectively, in our evolution. The rational individual of mature civilizations represents the culmination of the progressive liberation of the individual and his imagination in evolutionary history, first from biological determinism, and then from cultural determinism. We were lifting ourselves from our submergence in nature and tradition, and were beginning to imaginatively reconstruct our natural and social worlds according to more conscious designs. We were emerging from the world of blind necessity into a world with wide-open horizons of possibility.

PROGRESS IN THE SYNERGY OF IMAGINATION AND INSTITUTIONS

This completes the argument that *humans have become more rational in the sense of becoming better able to reason*. We've just looked at how civilization and reason emerged together out of simpler forms of sociality and mentality, thus yielding greater roles for more rational and autonomous individuals in society. This sociological account above of the rational reconstruction of humans will be complimented in the next chapter with a psychological account of how this rational reconstruction yielded disciplined, coordinated control of both our emotions and our intuitive thought processes, as well as greater autonomy to shape our identities by consciously integrating our social and biological heritages.

For now, though, we'll argue, as promised earlier, that *this emergence of reason has enabled humans to become more rational in the further sense of becoming more efficient at achieving basic human needs*. The argument will be that while it's difficult to claim that all disciplines which employed reason thereby became more efficient or advanced, it's nonetheless not so difficult to argue that these disciplines are still integral and vital functioning parts of cultures which became more rational in that they became on the whole more efficient at achieving our basic human needs. The difference between these two arguments is that the first tries to show how *disciplines alone* can advance, while the second tries to show how *culture as a whole* can advance.

Progress Within Disciplines

Let's begin with the attempt to show how *disciplines alone* can advance. There are obvious difficulties here. One is that the presuppositions of a discipline (especially religion or philosophy) may change so profoundly over its history that there's no common yardstick to measure progress by. Another difficulty is the functionalist argument that disciplines are often well suited to their respective forms of life, so it makes no sense to say that one is more advanced than another. The first difficulty might be sidestepped by noting that metaphysical and value claims aren't readily demonstratable one way or the other. Thus, we may well wish to ignore such claims in favor of more practical, empirical considerations like the functionalist argument just noted. The reply to this functionalist argument is the one that we'll soon cover below, namely, that though disciplines are, indeed, often well suited to their respective cultures, these disciplines can build upon themselves and thereby improve their methods.

Thus it could be argued on behalf of progress in disciplines that as these disciplines came to employ reasoning, they became more powerfully and systematically organized. This enabled them to *incorporate* much of what's of enduring utility in primitive disciplines, but at the same time to build upon these foundations and *extend* them in powerful, enriching ways. For example, science added theoretical dimensions and canons of rigor and proof to older, practical approaches, while building upon millennia of practical knowledge carried in the latter. Also, art grew tremendously in terms of the number of its disciplines and techniques, but always it built upon its past and returned periodically to it for inspiration.¹⁴⁷

Similarly, the civilized religions built upon earlier religions by drawing on their myths and rituals. But civilized religions eventually extended these earlier religions by turning from their preoccupation with taboos, magics, idols and rituals to new concerns with more exalted, universal ethics, and by turning from preoccupations with basic subsistence needs to further needs of spiritual self-realization.

In this context, Allport (1971:60-142) argues that maturity in general requires self-expansion (widening of interests beyond mere animal impulses), self-reflection (critically reflecting on one's life for insight into one's self), and self-integration (through a comprehensive, unifying philosophy of life). He then argues that early religion didn't evolve beyond impulsive self-gratification through magic ritual. It dealt with creature comforts like rain, war, fertility, hunting, healing, and showed little concern with spiritual salvation based on a moral life. It was reflective upon the world, but not upon the self. So there was less development of the whole individual, and just sporadic, incomplete integration of the personality (with little reflection upon conflicts between good and evil, spiritual and animal, reason and the senses, etc.).

Similarly, it might be argued that ethics has progressed overall by building upon and

extending earlier ethics. Civilized morality is like traditional morality in that both are built upon our instinctual drives associated with families, cooperation, loyalty, sharing, guilt, love, obedience, as well as selfishness, xenophobia, rebelliousness, etc. Yet civilization expresses this heritage in different ways which emphasize the individual over the family and tribe. In this sense civilization builds upon much common ground shared with traditional morality, while extending it in different directions. These extensions lead to increased emphasis on individuals' rights and conscience. But they lead also leads to greater selfishness, competition and inequality.

In this context, traditional morality is often commended for emphasizing harmony and brotherhood. It emphasizes duty to the family, sharing, equality, and harmony with nature. By contrast, civilized morality is often criticized for emphasizing selfishness and competition. Civilization produces exploitation of, and alienation from, both nature and our fellow man. It also produces oppression, inequality, and a persistent underclass (though it may still generate the greatest good for the greatest number).

Civilization does bring out our selfish side, but that in itself needn't be bad. Perhaps the key question here is whether selfishness grew at the *cost* of altruism. Civilization isn't so bad when seen in this light. Our help extends not only to family members, but also to strangers in the form of welfare for those in our own societies and airlifts to those suffering famines in faraway lands. Also, our altruism transcends that seen in traditional societies in another way. We are concerned with helping those close to us to develop as true individuals who think and act for themselves. We also help strangers in foreign lands attain much the same things at the political level. So although civilization does emphasize helping oneself, it doesn't seem to be doing so at the cost of helping others too (here it is aided by its bounding prosperity).

Also, civilization's emphasis on self-interest needn't be wholly condemned. It is, after all tied to its emphasis on individualism. This greater emphasis on the individual's needs appeared, of course, with the move from societies based on extended families to societies based more on autonomous individuals, and with the corresponding shift from family status to individual contracts as the basis of legal obligation. It is in this area of greater respect for the individual, her conscience, and her rights, that civilization is often praised. On the other hand, traditional morality is often criticized here for how the tribe tends to dictate to the individual, squashes questioning and individualism, and stunts full realization of higher creative potentials and political, intellectual and ethical diversity.¹⁴⁸

But in the end, the functionalist argument has some real merit against claims that disciplines have evolved. For even though religion and morality may have progressed in a sense, traditional religion and morality are well suited to maintaining traditional societies.

Progress in Culture as a Whole

Let's now turn from the attempt to show how disciplines alone can advance, to the attempt to show how *cultures as a whole* can advance. Recall that the argument was that while it's hard to claim that all disciplines that employed reason thereby became more efficient or advanced, it's not so hard to argue that these disciplines are nonetheless integral and vital functioning parts of cultures which became more rational in that they became on the whole more efficient at achieving our basic human needs. These "basic human needs" pertain both to our *animal* needs (for shelter, sustenance, sex, etc.) and our more uniquely *human* needs for creative self-expression (professionally, culturally, politically, etc.).¹⁴⁹ So let's look at how civilization might be more efficient at meeting both.

Civilization has been exceedingly efficient in tending to our basic *animal* needs for subsistence and survival. As civilization has evolved, our resourceful technologies and economies have given us steady, dramatic improvements in food production, shelter, medicine, etc. In fact, we have been so successful here that world population has exploded from several million on the eve of the agricultural revolution 10,000 years ago, to several billion today.¹⁵⁰ Today, more and more people live longer and longer, in greater and greater prosperity and comfort, and with less and less hunger and physical suffering.

This has increasingly emancipated us from these subsistence needs to better pursue our more uniquely human needs for creative self-expression. The latter was greatly boosted by the fact that culture was becoming less static and tradition-bound, and more creative and imaginative.¹⁵¹ Psychologically, this growing creativity stemmed from the rise of *reason*, while sociologically it stemmed from the rise of *individualism* and the rich *profusion of lifestyles*.

The rise of *reason* brought far greater levels of conceptual mobility and power to human thought, and unleashed new creative abilities in the human mind. The advent of reason forged the rational imagination, which harnessed the richly synthetic imagery of primitive imaginations with critical acumen and analytical rigor (see previous chapter). This created a bold synergy of reason and intuition, of analysis and synthesis. Separately, these can degrade into either formal sterility or aimless reverie; but with their fusion our imaginations can soar into vast, new realms of possibility. In this way we overcame the concrete and egocentric distortions of the primitive¹⁵² mold, even as we continued (especially in our romantic, poetic and mystical phases) to draw on their powerful visions.

As just noted, the rise of *individualism* also boosted creative self-expression. It was in civilization that the autonomous, reflective individual began to emerge from the unreflective herd (see above). Individuals began to live, create and express themselves as they thought best. In their moralities, they began to value the private dictates of conscience over blind, public

conformity to social rules. Individuals began to reflect upon their higher needs, their ideals and self-identities. They began to consciously shape their personalities and their individual potentials.

It was also noted above that the rich *profusion of lifestyles* boosted creative self-expression in civilization. The point here is that civilization offers a multitude of roles for us to choose from. These include traditional roles such as spouse, parent, warrior, artist. But these roles also add numerous others such as banker, lawyer, scientist, bureaucrat. This provides a rich multiplicity of choices in life, many of which don't exist in primitive life, but which still embrace most of the choices in primitive life. In general, civilization greatly advances our potentials for creative self-expression by offering individuals a growing proliferation and diversity of choices.

Admittedly, civilization has had less desirable consequences, such as stress, alienation and inequalities. How are these to be weighed against civilization's benefits, like greater prosperity and comfort, less hunger and suffering, longer lifespans and bigger populations, and enriched potentials for creative self-expression? Subjective as this matter is, it should be noted that humans have voted with their *feet* in favor of civilization with little hesitation. Presumably, we've done so because we feel that on the whole it best tends to our basic needs.¹⁵³ The alternative here would seem to be that human history has moved steadily and inexorably *against* what mankind actually desires and needs, which is a rather curious claim, to say the least.

This is not to deny that there are critics of civilization (though they are typically only armchair critics). But it should be noted that the alternative they usually turn to is in fact not a truly primitive life at all, but rather a communal, rural lifestyle complete with *civilization's* basic amenities. This is where the proliferation of lifestyles within civilization is again relevant. Civilization embraces a profusion of lifestyles which include simpler ones. It offers life in the city, town and countryside for us to choose from, and there is real movement between them. Civilization's rural lifestyles embrace all different degrees (from villages to wilderness), and combine much of the best of traditional life (closeness to family, community and nature) with much of the best of civilization (medicine, plumbing, electricity, abundant food, etc.). Again, only in civilization do these choices exist.

So, it can be argued not only that we have become more rational in the sense of becoming better able to reason, but also this emergence of reason has enabled us to become more rational in the further sense of becoming more efficient at achieving our basic human needs. Civilization and reason emerged together from simpler societies and mentalities. This gave us more systematically organized ways of getting what we need. It has enabled us to incorporate much of what's of enduring utility in primitive disciplines, but at the same to build upon these foundations and extend them in powerful, enriching ways. Again, these disciplines are integral and vital functioning parts of cultures which are on the whole more efficient at achieving our basic human needs,

both animal and human. Civilization and reason thus emerge not only as what most distinguishes us from beasts, but also as the bases of our mastery of ourselves and our world. They give us greater power and autonomy to direct our futures.

SUMMARY

This chapter parallels the others, firstly, in defending the *independence* of imagination and institutions against attempts to deny their independence, and secondly, in studying their *synergy* and how it has shaped imagination.

We thus began by criticizing social determinism and psychological reductionism for denying the *independence* of individual minds and social institutions from each other.¹⁵⁴ The claims of *psychological reductionism*, in which social phenomena are reducible to the thoughts and perspectives of individuals, were criticized for not seeing that societies are vast historical edifices whose origins, purposes and dynamics are obscure to individuals. *Social determinism* was criticized for treating individual minds as extraneous puppets which merely release the potentials of “vast, impersonal” institutional forces. In fact these potentials aren’t functions of institutions alone, but rather of the synergy of institutions and imaginations. Without individuals, institutions are empty, petrified shells; without institutions, individuals are blind and stray.

Social determinism was also criticized for neglecting the role of ideas in history. Ideas aren’t just epiphenomena of socio-economic forces, for they ignite our imaginations, tap into our instinctual drives, give meaning and purpose to our lives, and structure broad areas of human activity, including economic areas. Furthermore, while ideas are rooted in institutions, they nonetheless develop according to their own dynamics and logics (like viruses), and thereby take on lives of their own.

The autonomy of minds from institutions was also defended by looking at the evolution of the cultural motor (the synergy of minds and societies that drives cultural development). Here we found that culture, intelligence, and individuality together became ever bolder and richer in civilization. The rational individual of mature civilizations, who chooses his own ideals and identity, represents the culmination of this progressive liberation of the individual and his imagination in evolutionary history, first from genetic determinism, and then from social determinism. This represents a steadily shifting center of gravity between, instincts, institutions and imagination in our evolution. The three were divided by the shift to settled life and civilization, respectively.

After arguing for the autonomy of mental and social evolutions, we then turned to their *synergy*. Here we saw how institutions landscape and stock our minds, and how minds work

back upon institutions, maintaining and adapting them. They thus build upon one another and progressively open us new vistas of possibilities in each other. But there are mutual conflicts and tensions as well as mutual benefits. Society is an intricately adjusted system maintained by forces that minds can't fully comprehend and can't hope to replace. Our ideas thus tend to become building blocks in an overall process whose ultimate design and inner dynamics we can only partly fathom and affect.

But most of our account of the synergy of institutions and imagination dealt with how they *restructured* themselves into more powerfully organized and systematically coordinated forms, culminating in the emergence of civilization and reason. The argument was that our minds and societies have become more rational in the sense of becoming *better able to employ reason*. Prior to civilization, thought was pre-rational. Civilization and reason emerged hand-in-hand. In this process, less confined forms of thought emerged with greater conceptual mobility and power. Thought became more abstract (less tied to concrete situations of here and now), more systematic (more capable of fully exploring the underlying logics and theoretical possibilities of situations), more reflective (more capable of self-criticism and reflection), and more objective and comprehensive in its perspectives (less egocentric, less trapped in its own subjective viewpoint).

We saw how the new disciplines which emerged from the old religions at this time inherited timeless questions and concerns from the old myths, but they left behind the old poetic, intuitive imagery of magic and myth. Their methods became more abstract and systematic, and their conceptual horizons became broader. They all undertook at this time bold searches for universal order: for metaphysical unity, moral perfection, and physical law.

We saw how, as minds and societies steadily built upon each other, both became richer and more diversified in their contents, more hierarchically integrated in their structures, broader and more ambitious in their horizons, and more systematically coordinated in their operations. In this way, we traded sluggish dialogs between static cultures and drowsy imaginations for progressive dialogs between more dynamic cultures and bolder imaginations. This is the basis of man's mastery of both himself and his world. His rational, autonomous imagination lifted him from the world of social and biological necessity into a world with wide-open horizons of possibility.

Finally, we saw that in becoming more rational in the sense of becoming better able to employ reason, humans became more rational in the further sense of becoming *more efficient at achieving basic human needs*. While there are difficulties in arguing that all disciplines that employ reason thereby became more efficient or advanced, it wasn't so hard to argue that they are still integral and vital functioning parts of cultures which became more rational in that they became on the whole more efficient at achieving our basic human needs and our full human

potentials.

It was argued here that civilization and reason give us more systematically organized ways of getting what we need. Civilization incorporates much of what was good about earlier cultures, such as family structures, spiritual pursuits, technological conveniences, entertaining activities, etc. But civilization extends all this in new and enriching ways by developing multiplicities of new lifestyles to choose from, by developing medical and agricultural technologies, and by emancipating us from subsistence needs to better pursue our creative self-expression, etc. While this incurs new costs that are bothersome, they haven't stopped (or even slowed) us from proceeding ever further into civilization. We have voted with our feet for civilization with little hesitation because we feel that on the whole it better tends to our basic needs than earlier cultures, and gives us greater power and autonomy to direct our destiny.

CHAPTER 4 NOTES

1. Depending on context, "cultural" will serve below either as a synonym for "socio-cultural" (thus embracing both social and cultural institutions and relations) or to denote the learned (as opposed to innate) heritage shared by an animal population.
2. Purposive systems are those able to independently track, and flexibly persist toward goals. Thus the term even applies, for example, to simple systems capable of coordinating and adjusting their internal reactions to maintain their homeostasis in a changing environment. So defined, purposive behavior need not be a special (intentional) kind of behavior, it need not be anything more than special organizations of ordinary (mechanistic) causal processes.
3. These life functions became increasingly *complex* as early life evolved, a fact we'll return to when we cover evolutionary progress. Life forms developed more elaborate and powerful inner structures (nuclei, membranes, etc.) and more efficient means of cellular respiration (using oxidization rather than mere fermentation). Sexual reproduction evolved, allowing novel recombinations of genes. Multicellular animals emerged through specialization of system components and integration of systems into wholes, bringing division of labor between cells and greater size and complexity. Life invaded the land and air, and developed more elaborate food chains. In these energy chains, sessile plants produced food internally via photosynthesis, mobile animals fed upon them (as well as on each other), and microorganisms decomposed both. Evolution thus fed upon itself, opening up more and more niches for exploitation. Great adaptive radiations occurred, introducing a succession of new groups (e.g., amphibians, reptiles, mammals), each with higher degrees of complexity, flexibility, intelligence and autonomy from their environment.
4. For example, the simple body plans and genetic identities of certain hydrozoans allow such subordination, both physically and functionally (by specializing in feeding, reproduction, protection, propulsion, etc.) that their "colonies" appear in all but their phylogeny as single organisms. Although insect societies also resemble single organisms (their members are closely related, blindly altruistic,

rigidly interdependent, cannot live apart from the colony, and cannot generally recognize each other as individuals), nonetheless, their members exhibit more independence than hydrozoans (they are physically separate entities, are genetically related by at most 75%, and exhibit some competition over refilling vacated alpha positions). By contrast, members of higher vertebrate societies typically are genetically related by at most 50% and exhibit genuinely voluntary, self-interested behavior.

5. Just as we found blurred lines between social and biological phenomena above (which we clarified by reference to the differing levels of autonomy of member units within societies and organisms), so we also find blurred lines when dealing with mental phenomena. Certain mental phenomena might also be classified as social or biological phenomena. Though ideas (and symbols) are the stuff of mental processes, they're inherited via social institutions. Again, though emotions are experienced by minds, our capacity to feel them is biologically fixed. So, while ideas and emotions are partly social and biological phenomena, respectively, it's in minds that they become consciously alive and begin to creatively interact in thought processes. Ideas and emotions can thus be primarily seen as mental phenomena.

Ideas might be grouped together with other *artifacts* as a *fourth* category of "cultural" phenomena, that would exist alongside biological, social and mental phenomena. The rationale for doing so is that these cultural artifacts have their own dynamics which can act back upon the minds and societies which produced them. But for the sake of simplicity, we will stick with the original three categories. Ideas (or intellectual artifacts) will be treated as mental phenomena (i.e., as part of the contents of the mind) and technologies (or material artifacts) will be treated as socio-economic phenomena.

6. As we'll see, Social determinism assumes that both individuals and societies exist, and that the former is determined by the latter. Psychological reductionism simply claims that only individuals exist. Despite these differences, the debate can be actually arbitrated by showing that both societies and minds have their own inner dynamics. This refutes social determinism by showing that minds are partly self-determined, while it refutes psychologism by pointing to properties possessed by societies which can't be explained in terms of the activities and interrelations of individual minds. The point is that *even though one position is determinist and the other is reductionist, there are real points of conflict between them*. Their competing claims can actually be reconciled by pointing to properties (i.e., powers for self-determination) unique to both which rule out both lopsided determinism and lopsided reductionism.

7. Discussion of social determinism draws on Carr 1964:101, Aron 1970:101, Desmond 1979:74ff., Hallpike 1979:41-58,78-80.

8. This deterministic argument appears, for example, Durkheim's *The Elementary Forms of Religious Life*, Whorf's *Language, Thought and Reality*, and Douglas's *Natural Symbols*. Whorf was criticized in the previous chapter. On Durkheim and Douglas, see Hallpike 1979:ch..2. The position being attacked here is from Durkheim's review in *Annee/Sociologique* 12 of 1913: "World space has been primitively constructed on the model of social space, that is to say of the territory occupied by the society and such that the society represents to itself; time expresses the rhythm of collective life; the idea of kind (genere) was originally nothing else than another aspect of the idea of a human group; the collective power and its impact on consciousness served as prototypes for the notion of force and of causality." Compare Mary Douglas's *Natural Symbols*: "Society was not simply a model which classificatory thought followed; it was its own divisions which served as divisions for the system of classification. The first logical categories were social categories; the first classes of things were classes of men into which these things were integrated."

9. The constructive nature of cognition is discussed often in this work. As well as the previous chapter, it's covered below in accounts of behaviorism, the emergence of volition, and categories of primitive

thought. Good sources on this are Kant's first critique, Bartlett's *Remembering*, Neisser's *Cognitive Psychology*, and Gombrich's *Art and Illusion*.

10. This is Piaget's central theme. It's an implication of how our cognition lacks immediate insight into reality, and is instead mediated by perception.

11. Hegel says in the *Philosophy of Right* that "The great man of the age is the one who can put into words the will of his age, tell his age what its will is, and accomplish it. What he does is the heart and essence of his age; he actualizes his age."

12. The term "*ideas*" is ordinarily associated only with the mental processes of thought, even non-mental processes conform to their own characteristic "logics," which might be construed as ideas in a Platonic-like sense. The text sticks here with the *metaphysically neutral usage*, which simply treats ideas as the stuff of thought, whatever their further ontological status may be.

13. Similarly, the spirit of the age is economically determined in Marx, rather than being a product of the universal spirit working through our minds, as in Hegel. "It isn't the consciousness of men that determines their being [as with Hegel] but on the contrary, their social being that determines their consciousness."

14. Materialism and idealism differ here in that materialism views the material world as reality, and sees society as distorting our view of this reality for its political ends, while idealism sees reality as a social construction, and sees truth as a matter of coherence with this construct.

15. This is the same sort of determinism as behaviorism's. Both rob the individual and his imagination of their autonomy.

16. Calvinists believe that the material world is infected with sin, that we must work to create the kingdom of God on earth, and that our salvation comes only from the grace of an absolute, transcendent God who has inalterably predetermined our destiny. These tenets orient Calvinists away from mysticism as well as idolatry and ritualism, and toward recognition of the natural world as something to be explored and used by science and technology. Most importantly, these tenets direct Calvinists toward hard work and asceticism, which aligns neatly with capitalism's requirement that we work for profit, which isn't to be consumed but reinvested. Such worldly success serves as a sign that God has predestined an individual for salvation rather than damnation, thus relieving him of his anxiety over what eternal fate God has chosen for him. Rational and regular work comes to be seen as obedience to the will of God, and its fruits as a sign of God's favor.

17. The religious beliefs of the Jains, Jews and Parsis (remnants of ancient Zoroasterism) also seems to have strongly affected wide areas of their lives, including their economic lives.

18. Weber's reply to Marx on the relationship of ideas and institutions parallels Eliade's reply to functionalists on the relationship of myths and rituals. He shows how mythical ideas can transform, rather than just maintain the status quo.

19. These sorts of compromises are pursued in modern sociology of knowledge, for example, in the works of Stark, Berger and Luckmann.

the relationship between "ideas" and their sustaining social processes is always a dialectical one. It is correct to say that theories are concocted in order to legitimate

already existing social institutions. But it also happens that social institutions are changed in order to bring them into conformity with already existing theories, that is, to make them more “legitimate.” Consequently, social change must always be understood as standing in a dialectical relationship to the “history of ideas.” Both “idealistic” and “materialistic” understandings of the relationship overlook this dialectic, and thus distort history. [*The Social Construction of Reality*, p.128]

20. Coleridge noted in *Biographia Literaria* that there is a dialog between the artist himself and his art: his artistic ideas takes on a life of their own within his imagination, whatever their original roots and motivations may be. The truly creative imagination “dissolves, diffuses, dissipates, in order to recreate . . . it struggles to idealize and to unify. It is essentially vital, even as all objects (as objects) are fixed and dead.” Similarly, E.M. Forster noted in *Aspects of the Novel* that characters lifted out life and put together in a fictional work can be wholly transformed in their new relationship. When characters are characterized well, they take on lives of their own, and cannot remain together within the confines of the plot indefinitely. The same is true of plot. Indeed, in creation generally, the creator initiates the creative process through a set of insights, but as these insights coalesce, the creation itself begins to take on a life and dynamic of its own. Indeed, the creation even begins to take control of the creator’s thought processes. The role of creator and creation become reversed.

21. Another example of presuppositions developing according to their own logics is the way that ethics demands as presuppositions both the existence of autonomous selves and free will. These too admit of alternative approaches. Mystical answers must differ from theistic answers. This is the basic point. These disciplines develop in part according to the demands of their own internal logics, and are not wholly determined by biological and social factors and constraints.

22. What follows is a brief passage of natural history. It’s integral to the philosophical argument above that individuals are autonomous of societies. It shows that while individuals are reducible to societies in insects, culture and intelligence make this reduction implausible in higher vertebrates. What’s new in this approach is its account of the evolution of individuality and its explanation of *just why* the reduction is plausible at some evolutionary levels, but not others. Yet the argument itself simply synthesizes well accepted views (e.g., invertebrate behavior is robotic; individualism is submerged in traditional societies). As noted in this chapter’s introduction, space limitations make it impractical to cover the evidence for all the views below which are well accepted, so the reader will instead be referred to studies where such evidence is found. However, where less widely accepted views appear either the evidence will be cited or the speculative nature of the view will be admitted.

23. This trend represents not just the liberation of mental evolution from social evolution, but also (because autonomous individuals are so crucial to the potency of societies) the liberation of social evolution from biological evolution. So, this growing role for individuality reflects a shifting center of gravity between biological, social and mental evolutions, respectively. This topic is thus relevant to both chapters in part two.

24. Though invertebrate cognition evolved beyond reflexes with the emergence of conditioning (which allowed reflexes to be triggered by new stimuli associated with original stimuli), it still remained slavishly stimulus-bound and reflex-dominated, allowing only rigidly robotic, stereotyped behavior. Invertebrates are basically incapable of conceptualizing their world or recognizing others as individuals. (For evidence see Barnes 1980, Barnett 1981, Dethier 1964, Filloux 1975, Jerison 1973, Tinbergen 1967, Lorenz 1977, Wilson 1975.)

25. Primates spearheaded this expansion of intelligence and individuality in the Mesozoic. They evolved

bold imaginations, expressive languages, complex personalized relationships and facile cultures (Jerison 1973, Wilson 1975, Jolly 1972, Desmond 1979). D. Morris speculates that hominids combined the manipulative cunning of primates with the cooperative persistence of pack-hunters. This powerful, unprecedented combination may have further stimulated the evolution of language, culture, intelligence and individuality.

26. For evidence see *Ibid.*, Bonner 1980, Kummer 1971. Fully recognizable individuals emerged alongside *volition* in higher vertebrates. This came as isolated sensory images were integrated (via perceptual constancy mechanisms, enlarged neural association areas, and central representations of space) into *conceptualizations* of the environment (Jerison 1973, Lorenz 1977, Tonsley 1966). This was the basis of intuition, which comprehends things simply through immediate apprehensions and pre-articulated hunches, but without the systematic thinking bestowed by symbolism. Intuition enabled birds and mammals to understand their surroundings and react to them in flexible, intelligent, autonomous ways (*ibid.*, Wilson 1975).

27. Hallpike 1979 extensively covers evidence for whole paragraph. The closed-mindedness of traditional culture stems from the insularity of their societies and the preoperational character of their thought, as we'll see below.

28. For evidence of these developments see *Ibid.*, Childe 1946, Adams 1966, Barbu 1960, Muller 1961, White 1959. Urban relationships turned more on voluntary agreements between autonomous individuals than on kinship status (as H.S. Maine notes in *Ancient Law*). In cities, tribal patriarchs can't so easily keep tabs on individuals.

29. Evidence for this paragraph is in Childe 1946:165-80, Harrison and Sullivan 1969:30, Diamond 1973, Forrest 1976, Goody 1977, Havelock 1980, Muller 1961.

30. Evidence for this paragraph is in Barbu 1960, Burt 1957, *Analects* 15:38, Havelock 1967,1980, Childe 1946. Literate cultures flowered with the spread of alphabetic scripts, traveling teachers, and academies of higher education.

31. More distinctive personalities emerged in *cultures* as well as individuals. Culture became less monolithic: it flourished into autonomous disciplines no longer beholden to religion. With this segregation of disciplines and growing internal complexity, differences between cultures became pronounced.

32. *Ibid.*

33. Evidence for this paragraph is in Chan 1973, Moore 1957, Goody 1977, Childe 1946, Muller 1961, Ling 1968, Noss 1949.

34. Evidence for this paragraph is in Forrest 1976, Barbu 1960, Muller 1961. Nonetheless, the benefits of expanding civilization spread to commoners outside the West. This was due to Iron Age developments such as alphabets, coined money, and iron equipment (Childe 1946:18-19,184, Muller 1961:93-4). The Iron Age spread wealth and opportunity, expanded the middle class, and raised social expectations, moral awareness, social criticism, and legal reform. Corrosive factors, which stimulate dissent and individualism, were also widespread at this time. Social stress and turmoil were widespread (Childe 1946:178,203). Great Indo-European invasions disrupted the old order, shook its gods, and created great anxieties (clearly reflected in the era's religions). Other corrosive factors were the great heterogeneity of

urban centers and the proliferation of the urban poor and oppressed, who became seed beds for reformers. (Mumford 1972:63-4, Norbeck 220, Redfield 1953:54, Mair 1972:251, White 1959:330, Eliade 1963:2,67.)

35. This paragraph draws on Redfield 83, Burt 1957.

36. Romantics wrongfully claim that these civilizations stifle individualism, and that the true age of individualism was long before. Nietzsche felt that heroic cultures were built by noble men of great courage, strength and power, who created their own values, and stood above the herd as true individuals. He felt that as men grew more secure, prosperous and liberal, conformism and the herd mentality took over and submerged individualism. But when we compare exemplary men from both cultures, like Odysseus and Pericles, respectively, we find that the former were more tribal and insular in their allegiances, less tolerant of differing views, less reflective and critical in their moral reasoning, and more apt to stress social reputation over individual conscience or public shame over personal guilt. So it was men like Odysseus who stood for conformity, while it was men like Pericles who stood for individual autonomy.

William Blake claimed that imaginative self-expression is stifled by the “mind forg’d manacles” of urban society. But the retreat from urban society he envisioned would destroy most of the *bases of individualism*: greater spheres of personal freedom; richly diverse populations and viewpoints; cosmopolitan perspectives and international contacts; challenging political, economic and technological frontiers to stimulate our imaginations; socio-economic differentiation and specialization; progressive economic development with its steadily growing opportunities for individual development; disciplined systems of thought and education; institutions for widescale circulation and systematization of ideas; etc.

37. Webster, for example, defines “rational” as “Having reason or understanding; related to, based on, or agreeable to reason.”

38. See, for example Flew’s dictionary of philosophy. The term “moral” has a parallel ambiguity in its structure.

39. Preoperational thought is concrete (tied to the here and now), unsystematic (superficial and impressionistic, with no grasp of the underlying structures of reality), unreflective (lacking in self-criticism and reflection), and egocentric (trapped in its own viewpoint and unable to distinguish subjective interpretation from objective reality, so that dreams, intentions, symbols, etc., are reified). By contrast, operational thought is abstract (not tied to concrete situations), systematic (able to explore all theoretical possibilities and grasp underlying realities), reflective (capable of self-reflection and criticism), and not egocentric (able to achieve comprehensive, objective perspectives). Operational thought has a higher, formal stage, and a lower, concrete stage with some preoperational features.

40. Hume contends that reason alone is an inadequate guide in conduct: we must turn eventually to feeling or passion, rather than reason alone. Here he makes the famous remark that “Tis not contrary to reason to prefer the destruction of the whole world to the scratching of my finger.”

41. As we’ll see, while it’s not rational to *blindly follow* tradition or emotion (in either sense or “rational”), neither is it rational (at least in the second sense of efficiently achieving one’s ends) to *wholly ignore* tradition or instinct, and to base action on armchair reasoning alone (for tradition and instinct embody the wisdom of the ages and are ignored at our own peril).

42. What follows is the longest and most important part of this chapter. Its length is necessary because two

highly controversial theses must be defended: firstly, that *we have become more rational in the sense of becoming better able to employ reason*; and secondly, that *this has enabled us to become more rational in the further sense of becoming more efficient at achieving our basic human needs*. (Please note that “rational” will, accordingly, be used in the first argument only to mean “employing reason,” while in second it will mean both “employing reason” and “means-ends efficient.”)

Another reason for the great length of this section is that what we’re dealing with here is nothing less than *the rational reconstruction of humans and their imaginations*. This is a crucial part of understanding the nature and capacity of imagination, as just noted. But unfortunately, it’s one which has not yet been attempted in a comprehensive way. The ensuing argument that humans have become more rational, together with the account of our emerging individual autonomy at the outset of this chapter, as well as the entire previous chapter on the thought and symbolism, are attempts to reach this more comprehensive understanding of the rational reconstruction of humans and their imaginations. We’ll eventually find (at the end of next chapter) that this reconstruction embraced not only man’s society and intellect, but also his motivation and will.

43. Here begins a long *historical* study of traditional and civilized cultures. It’s *philosophically* relevant because it establishes that imagination has been rationally reconstructed in various stages. This is central to this work’s overall aim of better understanding imagination by looking into the *evolving* synergies from which its structures, powers and limitations derive, in all their historical diversity. Concerning evidence, comments on the more recent eras below are based on readily available writings and well accepted historical views. But comments on the older eras are more speculative. As noted in this chapter’s introduction, space limitations make it impractical to cover the evidence for all the views below which are well accepted, so the reader will instead be referred to studies where such evidence is found. However, where less widely accepted views appear either the evidence will be cited or the speculative nature of the view will be admitted.

44. Evidence for these developments can be found in Isaac 1976:275, Howell 1973:83-99,108, Jolly 1972:356.

45. Birdsell 1981:339f. argues that *Australian Aborigines* are the best available model of living stone-age humans because their technology is based on Upper Paleolithic stone tools, and their hunting is generalized rather than specialized. Like most generalized hunters, their social structure is quite constant. The basic unit is the family, and groups of related families are the usual landholding unit. There is tribal organization, but it’s without political authority and isn’t cohesive: it’s nothing more than a group of adjacent bands who maintain a common cultural tradition and linguistic dialect.

46. The !Kung Bushmen are an example. See Jolly 1972, Bates 1976:338f

47. Jennes 1922 cites the !Kung and Eskimo of Coronation Gulf as examples.

48. Hoebel in Diamond 1964:451.

49. See, e.g., Hallpike 1979, Lloyd 1972, as well as explanations in the text below of how technologies and economies affect thought.

50. Discussion of self-awareness in traditional cultures is from Hallpike 400-1 (based on examples from the Ommura of Africa). He shows how the banality of their self-awareness (compared to the rich discriminations of inner life in, e.g., a modern novelist) is partly attributable to the difficulty that their concrete thought has in reflecting abstractly on the operations and contents of their minds. Private

experience receives little elaboration in public discourse and there's a general absence of terms to describe inner states.

51. Hallpike notes that children are slapped in traditional cultures for questioning traditions. Mary Douglas notes that in face-to-face societies lacking formal legal systems and police cars equipped with radios, rigid customs help to prevent anarchy. Life in such societies is enclosed in a narrow circle of positive and negative demands.

52. Radin (1957) showed that traditional society does exhibit creative, critical thought in its skepticism and arrangements of ideas in myths. Their religions are often less rigid and dogmatic than ours. Polytheism is more flexible than monotheism in accommodating new gods, and world religions quickly became just as rigid and dogmatic as the traditional ones they reformed. But all this is quite compatible with the text's argument that world religions brought freer and more rational (systematic, reflective, critical) thought into history. (Discussion in the text of the growing role of ideas in history is partly drawn from Redfield 1953:54-84.)

53. Hallpike 1979:184-202, based on field work by Luria, Cole, Hallpike, etc. Also Cassirer 1976:135-6 (based on field work by Hammer-Purgstall, Von den Steinen, etc.).

54. Cassirer 1979:135 takes this example from Hammer-Purgstall.

55. Hallpike 1979:202-224 (based on field work by Bright and Bright, Bulmer, Cole, Hallpike, Evans-Pritchard, Levine and Price-Williams). The term "associative field" is explained in Ullman's book *Semantics*.

56. Hallpike 1979:211.

57. This paragraph is based on Hallpike 1979:134-168 (based on field work by Gell, Turner, Hallpike, Hershman, Fischer). The example is from Hallpike 211.

58. Hallpike 1979:196-202 is writing here on the structure of individual concepts. Cf. Cassirer 1976:135-6, Vygotsky 1978:71-2, Luria 1981:passim.

59. Luria 1981:143-4 (based on his own field work in the 1930s).

60. Lloyd 1972:108, reviewing research by Irwin and McLaughlin.

61. On the concept of number: Hallpike 1979:236-252 (based on field work by Hallpike, Levy-Bruhl, Gay and Cole, etc.).

62. On conservation of measurement, see Hallpike 1979:252-279 (based on field work by Hallowell, Prince, Greenfield, Bovet, Dasen, Lemos). Cf. Lloyd 1972:128-9 and Peluffo 193: based on large ranges of literature they conclude it likely that *once a society develops agriculture and handicrafts, conservation can be expected to some degree; but before these develop (e.g., in hunter-gatherer societies) evidence of conservation and other concrete operational skills may not be found.*

63. Hallpike 1979:280-339 (based on field work by Hallpike, Barnes, Cunningham, Gay and Cole, Lemos, Dasen). Cf. Cassirer 1976:45-6 (based on field work by Werner) and Lloyd 151.

64. *Ibid.*

65. Hallpike 1979:228-39 (based on field work by Gladwin, Carpenter). Cf. Lloyd 1972:151.

66. Conceptions of time in traditional cultures also lack an abstract dimension for systematic measurement and coordination. Time isn't distinguished from physical processes any more than space is from landscapes. Time flow is tied to unvarying, cyclical periods of local activity, where each event is locked in order, as with spatial topology. These cycles vary in each locale, thus hindering standardization of time measurement. All this makes coordination of duration, succession and simultaneity as poor as the coordination of spatial transformations. For example, durations of journeys are poorly distinguished from varying speeds or distances covered, even when departures and arrivals are simultaneous. (Hallpike 1979:340-383, based on field work by Bohannan, Evans-Pritchard, Hallpike, Hallowell, Prince, Bovet.)

67. This paragraph is based on Hallpike 1979:424-79 (based on field work by Hallpike, Evans-Pritchard, Frazier).

68. Toulmin 1963:21 and Hallpike 1979:443.

69. Hallpike 1979:434 (based on Fortune's work in the Trobriand Islands).

70. Hallpike 1979:384ff. Compare discussion below of the mytheopic thought still prevalent in early civilizations.

71. Cassirer 1976:72-95,110. The rest of the paragraph is based on this, too. Cf. Lommel 1966:15-17.

72. *Ibid.* This is the basis of their sympathetic magic. Again, compare discussion below of the mytheopic thought in early civilizations.

73. However, the religions of early civilization are transitional between traditional religions and world religions, and thus share many traits with traditional religions.

74. *Animism* is the belief that spirits pervade and animate nature. It is a natural form of explanation for the naive mind, because it explains natural events on the same readily familiar lines as human action, i.e., in terms of conscious intentions. Heavy reliance on animism and magic are characteristic of the preoperational mind. The impressionistic, pre-rational character of such minds leads them to blur subjective interpretation and objective reality. They thus readily attribute intentions to inanimate objects, treat dreams as messages from afar, view symbols as real parts of objects they denote by which we can affect these objects, etc. Kalabari mythology, with its preoccupation on nature and ancestral spirits, and village heroes (as reported in Keesing 1971:387-90) exemplifies animism.

Shamans are religious specialists having direct contact with spirits by psychic processes such as trances, possessions or visions. They are more concerned with *magically* coercing spirits for immediate material subsistence and security needs, than with pursuing a spiritual salvation based upon moral conduct and inner piety (this latter idea doesn't come of age until the world religions appear). Early religion is thus motivated more by magic rituals than moral principles, and more by fear than love.

75. Luria 1981:199-209 (based on his 1930s studies of illiterate Russian peasants. In more developed locales nearby, peasants mastered these tests of formal reasoning to a degree dependent on their level of formal schooling. Cf. similar restrictions on classification abilities in the Mano tribesmen, as noted in the text above.

76. For example, the Kpelle can give isolated reasons for cultivating highlands versus lowlands, but can't frame these into comprehensive arguments (Hallpike 1979:116, from Cole 1971).

77. Hallpike 1979: 132.4.

78. For example, in legal disputes amongst the Kpelle of Liberia the winner is the one who best shows himself in conformity with tradition, not by sound argument but by simply dazzling everyone with his speech and leaving opponents speechless (Hallpike 1979:121 based on Cole and Scribner 1974).

79. Hallpike 1979:132-4.

80. Lloyd 1972:137 concludes after reviewing research by Greenfield and Bruner, Prince, Goodnow, Peluffo that "*the major conclusion for the cross-cultural study of cognition is that sensori-motor intelligence and some aspects of concrete operational thinking may develop in the absence of contact with Western culture, but the appearance of the formal operations and of abstract thinking as defined in the Piagetian system probably depends on Euro-American education.*" Hallpike 94-134 agrees, basing his conclusion on field work by Gladwin, Gay and Cole, Fortes, Radin, Hallpike, Cole *et al.*, Cole and Scribner, Luria, Bruner, Bruner and Greenfield. Indeed, this is the main argument of Hallpike's extensive study of primitive thought.

81. Thought in traditional cultures is thus still submerged in perception. It is impressionistic, elusive, idiosyncratic and rich in symbolic and metaphorical imagery. Here, thought and symbolic language are partly fused in that language helps furnish and organize concepts; but they aren't yet fully fused into an abstract, critical form. *Such thought is thus part way between intuition and reason.* It is a symbolically articulated form of intuition, to use Piaget's terminology. Here symbolism has turned intuition public and thereby enriched, objectified and refined it, but it still exists in a pre-rational form.

The articulated intuition of traditional humans is a clear advancement on the pre-articulated intuition of beasts (as described in earlier notes in this chapter), but it's limited by its entrapment in a concrete and egocentric mold. Its lack of comprehensive, abstract perspectives leaves it so self-absorbed as to impede reflection, criticism and broadening of perspectives. This vicious cycle confines conceptual horizons to the immediate world rather than freeing them to the challenge of possible worlds.

82. There are various theories about the origins of civilization, so the topic is speculative. But I've tried to stay away from controversial theories below.

83. These generalizations are based on examinations of each of the six original cradles of civilization. See Adams 1966, Carneiro 1978, Cohen and Service 1978, Fagan 1975, Giesbrecht 1972, Gowlett 1984, Haas 1982, Hawkes 1976, Krader 1968, Mellart 1965, Aotes 1976, Trump 1980, White 1959.

84. Incan civilization was unique in its lack of both cities and literacy. Instead of writing, they used a complex system of rope knotting for record keeping. This may have worked for this comparably rural empire, but would almost surely have been too cumbersome in more densely populated, highly urbanized civilizations. This lack of literate culture and fully developed cities makes the Incas more comparable to the semi-urban kingdoms that developed in Africa, such as the Ashanti, rather than to the fully developed civilizations of Mesopotamia, Egypt, China, India, or Mesoamerica. (See Lewellen 1963:36-7, Meggers 1972:45-66, Sjoberg 193f)

85. This required transcending old conceptual schemes based on idiosyncratic local imagery with more

detached and abstract schemes. The higher levels of generalization of the latter were less rich in meaning, but more universal in currency and more conducive to abstract, coordinated thinking. This was accompanied by similar, rationally detached approaches to community values (with a greater readiness to scrutinize traditions in terms of social efficiency) and also by a rationally detached approach to nature (man was shifting from his old harmony with nature into artificial, rationally planned environments complete with grain stores for food surplus, homes for shelter, roads and canals for transportation, etc.).

86. These next three paragraphs are based on Linton 1958:100, Hallpike 1979:*passim*, Daumas's history of technology 1969:116-166, Farrington 1969:3-5, Goody 1977:112-45, Childe 1946:71,101ff., Taton 1957:18-32,89-107.

87. *Ibid.* By contrast, primitive conceptions of space and time were submerged in the unchanging physiognomies of their local routines and landscapes. These concrete, static conceptions inhibited coordinated spatial and temporal thinking (recall how Papuans who travelled in WWII were amazed to see sunrises over mountains rather than the sea, or how Algerian peasants judged durations of their journeys by familiar distances travelled regardless of their speed). But quantified dimensional analyses allow us to separate out dimensions, to measure objects by them alone, and to see how weights, volumes, etc. can remain constant through transformations by compensations between dimensions.

88. *Ibid.* These new industries were planting the seeds of more scientific, less anthropomorphic concepts of causation. Traditional peoples lived in a world of organic processes which aren't easily taken apart, experimented with, modified or reversed – and not being devised by man, these processes were difficult to analyze. But by manipulating man-made objects and technological processes, we began to develop experimental and hypothetical thinking, and we began to learn about how objects and processes actually interact. This helped us to develop less anthropomorphic, more impersonal concepts of causality. It also helped us to objectify properties that were seen in subjective ways. For example, scales helped us to think of weight in terms of objects balanced against each other instead of as sensory properties possessed in an absolute sense (as when stones are seen as intrinsically heavy and gourds as intrinsically light). But these seeds of more objective, scientific outlooks only very gradually took root, as the subsequent history of ancient culture shows.

89. This draws on Goody 1977:79f., Hallpike 1979:110-26,167, Linton 1958:100.

90. See Goody 1977:37,42f,102f.,108,182f, Vygotsky 1962:110,115. Discussion of literacy in these paragraphs is based on Goody 1977, Hallpike 1979, Linton 1958, Childe 1946, Redfield 1953, Hooke 1963, Frankfort 1949, Cassirer 1976, Horton 1967, Taton 1957, de Burgh 1965, Vygotsky 1978,1962, Bruner 1964.

91. Goody 1977, Linton 1958, Childe 1946, Redfield 1953.

92. Goody 1977.

93. The politico-religious establishment was progressive in providing arenas for rational decision making and in providing for schools for higher learning and literary work. But once established, they maintained strongly conservative regimes.

94. This paragraph is based on Childe 1946:125-30.

95. This account of early civilized religion is based on Frankfort 1949, Breasted 1975, Burt 1957,

Carmody 1990, Noss 1949, Ling 1968, Mair 1972, Eerdmans 1982, Alland 1981, Kirk 1974.

96. Epics, folk literatures and chronicles began to develop by abstracting their materials (mythical tales, proverbs, historical data, etc.) into higher, more coherent forms. Mythology exemplifies how writing promoted more abstract and systematic thought through the weaving of older tales into new wholes. The Memphite Theology of third millennium Egypt, for example, argues for the primacy of the god, Ptah, and his home, the new Egyptian political capital of Memphis, over the creator god, Atum-Re, and his old, earthy cosmology. This is achieved through a sophisticated theology in which Ptah is identified with the primeval waters, which traditionally gave rise to Atum-Re. In an act of creation akin to the Logos Doctrine of the New Testament (John 1), Ptah conceived Atum-Re by an act of thought and speech (Frankfort 1949).

97. It was, ironically, the triumph of writing down the old mythologies that helped to render them obsolete: codifying them into objects for systematic reflection encouraged analysis and scrutiny, which dissolved their poetic life away.

98. On the themes and preoccupations of myths see Hooke 1963:11-16, Frankfort 1949:11,164-5. Cf. Eliade's chapter-by-chapter breakdown. On the great community of life see Cassirer 1976:81-4, Carmody 1990.

99. Discussion of the dramatic character of myth draws upon Cassirer 1976:23ff. and Redfield 1953:106. Discussion of myths giving us security and identity is from Berger 1966:92-14. Discussion of the anthropomorphic outlook of myth is from Frankfort 1949:12ff.

100. Discussion of myth as intuitive imagery which blurs boundaries draws upon Hallpike 1979:384-423. Discussion of conceptual realism draws upon Frankfort 1949:19-21. Hallpike's chapter on conceptual realism ties this phenomenon systematically into the character of early thought as a whole.

101. Discussion of the blurring of the realms of being draws upon Cassirer 1976:80-96 and Frankfort 1949:23ff.

102. Discussion of mytheopic time draws upon Frankfort 1949:32-5.

103. Discussion of mytheopic space is from Frankfort 1949:29-32. Discussion of astrology is from Taton 1957:71-3.

104. Frankfort 1949:29-35.

105. This paragraph on causality is from Frankfort 1949:23-9.

106. This is conceptual realism, another distinctive characteristic of subjective imagery.

107. Frankfort 1949:21-2, Cassirer 1976:93-5,100-103,110f., Hammond 285.

108. To be precise, early civilized religion manifested features of the staunchly conventional and pre-conventional morality normally associated with concrete operational and pre-operational thought, respectively. Conventional and pre-conventional moralities exhibit many of the limitations of pre-operational thought, which persist to a degree into the concrete stage of operational thought. These correspondences between these stages of cognitive and moral development are commonly noted in

developmental psychology (see Breger 1974:290-291, for example).

109. Their conventional morality is conformist, uncritical and self-absorbed. It is the herd mentality. It stems not just from our presumed herd instinct, but also from the still rather isolated and self-absorbed way of life in these early city states, and the concrete, egocentric nature of the mythopic mentalities of the era.

This morality is intolerant of nonconformity (e.g., the Old Testament Yahweh is a God of war who shows little humane feeling for enemies of the Hebrews, and who often condones wholesale slaughter of those captured by the Hebrews) and is motivated more by shame at violating social rules and rituals than guilt at violating private inner principles (Homer is an illustration of how rigid class structure and the heroic ethos of its aristocracies, helped to promote status anxiety as the main source of morality, praise and blame as the main source of personal honor, and fame as the supreme social virtue). This stress on public conformance to priestly rituals is in fact one of the most prominent features of early civilized religion. Mesopotamian, Egyptian and Indian religion of the 2nd millennium B.C. were notorious for their powerful priesthoods and obsessive ritualism. Such extreme ritualism became the primary target of revolt by the world religions.

110. In its more cognitive aspects, this conventional morality shows the limitations (noted above) of the thought processes it's based upon. Such thought is still quite concrete and pre-rational. Thus, such morality is generally unable to reflect abstractly on the mind itself and to distinguish its contribution to morality and conduct. This gives such moralities their characteristic fixation on external versus internal features of morality.

111. One implication to the preoccupation with external versus internal features of morality is that values are often thought to reside in external events and actions, not in interpersonal relations or standards. For example, in Homer moral motives often come from the gods (e.g., when Achilles assails Agamemnon with a sword in a fit of anger, Athena counsels him to curb his impulses).

Similarly, values are often seen in concrete, quasi-physical terms such as the satisfaction of physical needs or physical pollution and purification. Sin is seen as being determined by external circumstances or as inhering in things as objective features of them. Sin is seen as an infectious pollution got by curses, physical contacts, or inheritance from relatives. Purification is most often achieved by ritual, as a quasi-physical cleansing. By contrast, dramatic breaks with this mentality occurred in Draco's laws, which view pollution as arising only from intentional (not accidental) injury, and in later views of the tragic poets (and Socrates) that purification is achieved in terms of inner morality. Here morality is becoming internalized. (See Barbu 1960:74-5.)

Also, spiritual entities are seen in similar concrete terms. In many languages (Akkadian, Assyrian, Hebrew, Arabic, Greek, Latin, Sanskrit) the word for soul originally meant breath or shadow. It is also common to see the tongue or palate as not only the center of speech but also of thought and morality. However, with the breakdown of preoperational thought, this concept of the soul soon evolves into an that of the familiar immaterial entity which is the seat of our spirituality and inner morality. This breakdown occurred in various ways: through the distinguishing of public and private viewpoints in less homogenous urban societies, through expanding knowledge of the nature of shadows and breathing, and through seeing the disparity of intentions and deeds in unjust suffering or unintended injury. This transition from concrete to abstract thinking is also evident in the evolving concept of gods (Hallpike 1979:408ff., Burt 1957:112ff.). Early religions saw the divine as manifest in physical things such as totems, dance, idols, animals, rivers, mountains. But later conceptions of the absolute are exceedingly abstract. For example, compare the concrete view of Yahweh in early Hebrew thought (the ark was his habitation; he was also identified with mountains and other natural objects, as was typical for a nature god) with the highly abstract concept in later Hebrew thought of a Yahweh who transcends space and

time.

112. A further way in which moralities of this era exhibit pre-rational adherences stems from their blurring of subjective interpretations with objective realities. This leads to magical conceptions of punishment and reification rules into sacred, god-given realities (e.g., Spartans claimed that their constitution was given by Apollo through Lykurgos). Humanist traditions soon challenged such views in most civilizations (see for example book I of Herodotus's histories). Of course, sophisticated thinkers in later religions held similar views to the ancient Spartans. However, the latter presented *refined arguments* for these views. These later thinkers were fully capable of distinguishing human conventions from objective realities, and of systematically arguing for the genuine objectivity of select moral principles.

113. Another implication to the preoccupation with external versus internal features of morality is an undeveloped reflective awareness of thought and feelings. The concreteness of thought at this stage keeps it from discerning the emotional conflicts within the mind and from appreciating the contributions of the mind itself to morality, with the result that rules are followed literally with little concern for their motivation or intentions. An example is in the Old Testament, when Uzzah was struck dead for trying to steady the ark when it was jostled by the oxen pulling it.

In the same spirit, divine punishments are often seen as arbitrary and severe, rather than as involving restitution. At this stage, gods are feared and are seen as jealous, temperamental, capricious beings behind unpredictable forces in nature which bring them famine, drought, storms, floods, etc. If properly assuaged with magic and sacrifice they can also bring prosperity and security. They are normally less responsive to moral behavior. Such gods are more objects of fear than of love. This may stem from the crudeness of early cultures, where technology, government and economies are undeveloped, anxieties over survival are high, and the prime interests of religion are protection from natural disaster, victory in battle, and securing of food. In its view of punishment as arbitrary rather than deserved, early religions differ from world religions in degree. Hebrew prophets, for example, not only stress this connection of human immorality with divine punishment very strongly and persistently, but also stress the overriding importance and predictability of this connection.

114. Childe 1946:165-80, Harrison and Sullivan 1969:30.

115. See Harrison and Sullivan 1969:41-2, Childe 1946:206.

116. At least in the Near East. See Childe 1949:99, Hallpike 1979:103-34.

117. See Goody 1977:37,43-50 and Vygotsky's works.

118. Religion petitions supernatural beings with independent wills (animism), while magic mechanically manipulates supernatural forces with no independent will (animatism). World religions stem from the former approach, while technology and science are associated with the latter. The two often blur and overlap. But the point of the text is that as technological control over nature grew, we no longer relied so heavily upon sacrifice to nature gods: with our subsistence needs met, we now turned to religion more and more for our spiritual salvation.

119. Similarly, sin was no longer seen as an objective feature of things (as an infectious pollution) to be purified by ritual cleansing. For example, Draco reformed Greek law so as to treat pollution as arising from intentional rather than accidental injury. Subsequently, the tragic poets treated purification as coming from inner morality. Conceptions of punishment underwent similar changes. With more exalted views of divinity, punishment was seen as less a matter of arbitrary, magical deliverance and more a

matter of moral restitution. Hebrew prophets thus claimed that Jews suffered divine punishment because of their own immoralities, not because of the shortcomings of their rites and fetishes.

120. These trends were also evident in China. Confucius strongly reflected the enduring Chinese attachment to ritualism, yet he also stressed the virtuous inner spirit. Moism (founded by Mo Tzu, the main contemporary rival of Confucius) stressed universal love and compassion over ritual. Yet, interestingly, it justified them purely in terms of their practical benefits (as the way of “universal love and mutual benefit”) rather than in terms of their inherent value (chap. 25-6).

121. The jealous, capricious, amoral gods of the old tribal polytheisms were judged by the newly emerging, more humane and civilized moral standards of maturing civilization, and were found sorely wanting. God must be supreme, one, and perfect; and he must bestow a universal morality for all men. He was to be loved more than feared, unlike the old gods. The new vision was of metaphysical and moral perfection: of all reality converging upon unity and goodness. Alternatives to strict monotheism was Zoroasterism’s dualism of the evil spirit Ahriman and the good spirit Mazda, and Hinduism’s trinity of Brahma (who brings diversity out of primal unity), Vishnu (who preserves, and has charge of human destiny), and Shiva (who destroys, and reconciles all opposites into unity), and Christianity’s trinity of the Father, the Son and the Holy Ghost.

122. The desert may have helped to foster this monistic vision of the divine by simplifying nature into an empty wasteland. The desert nomad faces vast stillness, stark, changeless solitude, and open, starlit skies at night. The monotheism of the Semites has also been tied to their pastoralism, the rationale being that such peoples see God’s relation to themselves like their own relation to their herds. (See Hamilton 1942:300-2, Frankfort 1949:246-7.) Be that as it may, such monotheism is the natural outcome of the growing universalism of the age, the coalescing of power within increasingly hierarchical pantheons, and the earlier monistic insights of Akhenaton and Zarathustra.

123. Yahweh was seen as almighty in that his power extended over nature, heaven, and even the realm of the departed (Is. 7:11, Amos 4:13, 9:2,6).

124. Although Yahweh transcended the world of change, he was still immanent in that his will is manifest in history.

125. This was a dramatic break with the ancient idea of nature Gods, which had so dominated religions up to this time. A common idea in the mythologies of agricultural peoples is that the Gods are born out of nature (chaos) and take up their domains within nature. *Enuma Elish* was a prototype here in the Near East. The mythologies of hunter-gathers also deify the objects of nature, especially the animals around which their lives revolve. Such myths generally perceive an intimate unity of the Gods, man and nature, such that each can readily metamorphose into the other. The Hebrews broke with this view of an intimate community of nature, gods and man, who are all ultimately created out of the *same substance*.

126. For discussion of higher needs, see Burt 1957:85-102,160, Josey 1927:147, Coe 1916:227, Muller 1961:107, Shaffer 1978:32ff., and Maslow’s works.

127. Such achievements characterize the *highest level* of thought in this era among the intelligentsia, not the *average level* of thought. In fact, among the masses, conventional morality has remained dominant throughout the history of civilization.

128. See, e.g., Kohlberg, Loevinger, Breger. Autonomous, principled morality is sometimes wrongfully

identified with conscience (see, e.g., Lillie 1955). But conscience is perhaps better seen in simply terms of our capacity for self-awareness and self-control. It can thus operate with rules of its own, autonomous choice, or with socially given rules. Plato called conscience “reason” and Freud called it the “ego” over two millennia later. Its role is to reflectively reconcile and synthesize the demands of our biological natures (which Plato called “appetite” and Freud called the “id”) and our social natures (which Plato called “spirit” and Freud called the “superego”).

129. Other ways in which morality was becoming internalized can be cited that aren't on this list, most of which have already been discussed. For example, the spirit behind the law is valued rather than the superficial letter of the law. Similarly, more abstract and exalted conceptions of the psyche as the seat of our moral and spiritual selfhood (as opposed to the quasi-physical shade or breath) arose along with the new more abstract, exalted conceptions of God. Also, salvation was now construed in terms of inner, spiritual purity rather than ritual purity. Further, motivations behind conduct shifted from the concern for one's public reputation and fear for public shame so characteristic of heroic cultures (such as Homer's), to concern for one's personal integrity and fear of violating the inner dictates of one's own autonomous conscience (as in the case of the Hebrew prophets, Socrates, Jesus Christ, etc.).

130. We've already seen this growing role of autonomous individuals and rational principles in civilization from factors such as the growing urbanization, literacy, knowledge, prosperity, cosmopolitanism and sophistication of the era. All this advanced the conditions conducive to postconventional morality, viz., the growth of private spheres disengaged from society, the proliferation of alternative viewpoints, the appearance of large-scale corruption and inequality, and the growth of competing traditions of literature seeking rational principles of proper conduct (the golden rule, the doctrine of the mean, utility, etc.).

131. This trait and the next two are covered in detail in discussions below of how instinct restrains culture and how culture restrains instinct.

132. This was a gradual process, of course. In Greece, for example, the search for clarity, order and reason is already evident as early as Homer and Hesiod. Similar transitional periods appeared in the early Chou dynasty in China, where many of the presuppositions of classical Chinese philosophy were formed (belief in a protective heaven, in the will of heaven for universal harmony or Tao, in the emperor's role in bringing this will of heaven to man, etc.), and in India in the wake of the Aryan invasions, where there was a gradual transition from optimistic polytheism to a world-denying monism.

133. See Horton 1967. Jack Goody claims that it's the lack of literacy that ultimately accounts for this inability to accumulate and develop continuing critical traditions (Goody 1977:43). Goody writes about the effects of writing on man's development. He argues that we must be careful of dichotomies like primitive/advanced or savage/domesticated (which can neglect real resemblances between thought and social modes across cultures) as well as extreme relativism (which neglects genuine differences between thought and social modes across cultures). Goody claims that genuine differences do exist and that they're largely attributable to writing.

134. Horton's psychological approach to science and Goody's sociological approach need to be synthesized. The key to doing so is to recognize that, despite their different approaches, both are distinguishing science from myth in terms of the transition from preoperational to operational thought. Horton's account of the shift from closed-minded to open-minded outlooks is one way of describing the shift from preoperational to operational thought, for preoperational thought breaks down as we penetrate systematically beneath the intuitive surfaces of things into their essences (which are invariant through

change), begin to widen our conceptual horizons, and start to better discern the full range of possibilities in thought and action. (See Horton 1977:155ff. As well as noting actual features of preoperational and operational thought in these differing outlooks, like magical attitude to words and nonmagical attitudes to words, Horton notes some motives for both outlooks, like reverence for tradition, reverence for progress.)

Goody's thesis can also be taken as part of this attempt to contrast science and myth in terms of operational and preoperational thought. He argues that literacy is the main underlying cause of the emergence of science from religion. Similarly, Vygotsky argued that literacy is the portal to systematic and abstract conceptual schemes, and thus to more systematic, coordinated and reflective thought. Whereas Goody often tends to focus on the role of language rather than the underlying structures and dynamics of thought, Piaget has been accused of doing the opposite. As noted in a previous chapter, Vygotsky reasonably emphasized the autonomy of both, and their dialectical relationship.

Thus, while it's possible to follow Goody and to explain simple people's closed-mindedness in terms of a lack of literacy, it's also possible to look at the pattern on the other side of the rug. In this way we can explain this closed-mindedness in terms of the inherent limitations of preoperational thought: the lack of comprehensive, abstract perspectives leaves thought so self-absorbed as to impede reflection, criticism and broadening of perspectives; and this vicious cycle confines conceptual horizons to the immediate world rather than freeing them to the challenge of possible worlds. Goody's neglect of this psychological dimension is evident, for example, in how he begins his argument (that the lack of literacy causes closed-mindedness) by first denying that closed-mindedness can be an *inherent* (psychological) feature of the traditional mind.

In this regard, Goody says (p.42) "Is the absence of awareness of alternatives due simply to the fact that traditional societies were not presented with other choices until Europe intervened? Or are we dealing with closure of a more inherent sort, a feature of the traditional mind? I doubt whether Horton would ask us to accept the latter proposition, which is essentially circular." Goody also rejects the first alternative, then goes on to argue for the importance of literacy in opening up awareness of alternatives. Compare the debate between Piaget and Bruner in the previous chapter.

Thus, it would seem that Goody's sociological emphasis on literacy might usefully be complimented by a psychological emphasis on preoperational thought much like Horton's (or Piaget's or Hallpike's). Both are useful – together. Goody, however, fails to see this. He unfairly implies (p. 42) that Horton's dichotomy (of closed-minded and open-minded) simply describes the difference between myth and science, but doesn't *explain* it (only the transition to literacy actually explains the distinction, he feels). But surely the point is that both perspectives have explanatory value: both sociological and psychological approaches help explain why scientific and religious outlooks take the forms that they do. This is one of the points emphasized by this thesis: the need for an integrated psychological and sociological (as well as biological) approach to culture.

The same critique can perhaps be made of Kuhn's sociological approach to science. If we speak of science as an institution which embodies a critical tradition with varying degrees of success, then we can equally well speak of science as a method of thinking about our world by systematically analyzing all possible alternatives and by critically evaluating each according to canons of rigor and rules of evidence, i.e., as a mode of operational thinking. This was Popper's point, basically (though he used different terminology). The overall point is that science is distinguishable from myth both as a mode of thinking and as an institution. Either alone gives an inadequate account of how the other aspect operates and evolves; together, the sociological and psychological accounts reinforce each other.

135. With the advent of civilization, writing made more scientific thought possible. Surgical, pharmacological, astronomical and mathematical texts appeared. Science emerged from man's timeless curiosity and long-standing practical experience, but it was not until the third millennium B.C. that writing enabled large volumes of knowledge to be carefully scrutinized in a detached manner. This allowed men to refine and sharpen ideas, build up accurate bodies of observations, develop mathematical

tools, and thus make more precise predictions. As in legal systems, writing helped develop more logical classification by promoting the explicit choice of criteria with awareness of alternative criteria, and by aiding the systematic and exhaustive enumeration of possibilities into taxonomies which proceed hierarchically from particular to general. These logical systems of classification permitted the establishment of logical inferences and law-like relations between classes of phenomena. In this way, taxonomies were able to penetrate beneath the surfaces of phenomena, abstract elements and properties out for systematic operations, and generalize them into laws for objective descriptions of phenomena. (This discussion is based on Goody 1977, Hallpike 1979, Linton 1958, Childe 1949, Redfield 1953, Hooke 1963, Frankfort 1949, Cassirer 1976, Horton 1977, Taton 1957, de Burgh 1965.)

136. For details, see Taton 1957:27-9,32,44-62,68,89-107,65-126, Daumas 1969:139-40, Farrington 1969:13.

137. The apparent lack of a theoretical dimension to early science may in part be due to these dogmatic and mechanical educational methods of the temple schools, together with the conceptual difficulties of grasping theoretical abstractions within a still heavily concrete mentality. This practical orientation of early science is evident in, for example, the complete absence of theoretical argumentation in preserved records of early mathematics (Farrington 1969:10, Harrison and Sullivan 1969:17,27-8, Taton 1957:27-9,32,68,90,95,96). Great virtuosity was shown in solving specific, practical algebraic and geometrical problems, but never by means of general proofs or formulae. Instead, only simple arithmetical steps were given to follow for these specific examples.

Formulae and proofs may have been transmitted orally, but the general impression is of a mathematics just emerging from the concrete into the formal stage, and of an unremitting dependence on trial and error, and empirical measurement rather than theoretical proof. Early science thus seems advanced on the concrete and practical level, but abstract, theoretical systematization of this knowledge was slow to appear. This is characteristic of *concrete operational thought*, which is systematic at the concrete level, but not yet at the abstract level. This permits distinctions between subjective and objective aspects of phenomena, but inhibits analyses of the full theoretical possibilities of situations, and confines conceptual horizons to immediate horizons. *Formal operational thought* reverses concrete thought, by viewing concrete realities as special cases of the full possibilities of situations. These broader perspectives at long last break down egocentric adherences and bring objectivity. (See Flavell 1963:156-63, Vygotsky 1978 82f.)

138. Religion left its mark on higher learning on early civilization in the form of a strongly mystical bent. Early surgery, for example, contained much sober and accurate observation, but it was freely applied with magical incantations. Likewise, early knowledge of anatomy was extensive, but it was largely in service to haruspicy (divination by inspection of the entrails of sacrificial animals). Again, early astronomy used admirable observations and calculations for the construction of calendars, but it too was turned to mystical ends in the form of astrology. The imagination of the times was thus still very heavily under the spell of mysticism, and was captivated by the seeming abilities of the numerous schools of divination to prophesy the future. (See Taton 1957:18f.,42-109, Farrington 1969:11-12.) These religious practices thwarted science because their evidence was often adjusted to fit their sacrosanct premises. See Taton 1957:68-75 (esp.73-5) and Childe 1949:125-30 (on Mesopotamia and Egypt).

139. It thus eschews vagueness and offers instead theories which provide precise, clearly testable predictions. These tests must be repeatable to insure their objectivity by minimizing error and prejudice. On the other hand, the search for mystical essences (which is closely associated with the rationalist philosophies mentioned above) has long been discredited because of the inability of rationalists to agree on the nature of these essences.

140. The Milesians, for example, sought a substrate for all being, and described it in empirical terms. They were self-critical, unlike a priesthood, and often offered natural rather than supernatural explanations of events (e.g., Anaximenes' mechanism of condensation and rarefaction). But they also had a foot in the myths of the past: they saw their substrate as divine; and Anaximander even borrowed the structure of his cosmogony from Hesiod's mytheopic *Theogeny*, which seems to have in turn been borrowed from the ancient Mesopotamian creation epic (argues Cornford). Their thought is a mix of poetry, metaphysics, theology and primitive natural science.

141. Ancient Chinese cosmology stemmed primarily from the Yin-Yang school. One of its two cornerstones was the yin-yang theory which maintains that there are two fundamental cosmic forces whose interactions produce all things: yin is associated with the negative, passive and destructive; yang is associated with the positive, active and constructive. Also yin is associated with the female and the way of earth, while yang is associated with the male and the way of Heaven. The other cornerstone was the theory of the five-agents (wood, metal, earth, fire, water), each of which took their turns in predominating over one another: ". . . ever since the separation of heaven and earth the Five Powers [Agents have been in rotation." These two theories were first combined by Tsuo Yen (350-270 B.C.), who was perhaps the most prominent figure in both the Yin-Yang School and ancient Chinese scientific thought. (See Chan 1973:244-6.

142. Indian thought remained entranced by the spiritual, and gave little attention to the sciences. Exceptions exist in their studies of logic and psychology (which are natural concomitants of mystical philosophy), and the ancient Carvaka system, which is empiricist and materialist in spirit. Chinese science remained relatively down-to-earth and indifferent to abstract analyses. Yet it did see some limited early advances in natural science (see note above on the Yin-Yang school) and in logic. The latter soon died out, while the former never surpassed the poetic level of the Presocratics and never developed a mechanistic view of causation. Needham argues this latter point extensively in his *Science and Civilisation in China*, but then goes on (p.306) to confuse this valuable point by maintaining that the Chinese never developed the idea of "natural laws." This is clearly untrue, given (just for example), Tsuo Yen's doctrines of the Mutual Production Order and Mutual Conquest Order, which gave the natural order the by which the five agents determine (produce and conquer) each other. The Chinese, like everyone, had notions of natural laws, even if they were non-mechanistic.

143. See Schlagel 1985:ch.13-14.

144. See Schlagel 1985:ch.15.

145. See, e.g., Stumpf's history pp.216-47.

146. Classical Greece also embraced these values first. But it didn't develop their potentials as fully as modern times did in the scientific, technological and political spheres.

147. Language is another example. It grew into a tool for more abstract, logical thought in many disciplines, while incorporating their older conceptualizations with their more intuitive and spontaneous character. (Consider, for example, the gradual emergence of more theoretical discussions of the spiritual and natural worlds.)

148. As ancient civilization has matured, its politics and religion have been revolutionized by ethical zeal, by heightened social expectations, and by moral awarenesses, which were noticeably lacking before. Our

moral development may even continue, and may even help civilized people to overcome criticisms of their morality. Indeed, like our ancestors, civilized people may learn to live in harmony with their environment rather than plunder it, and to live with greater harmony and love for his fellow men. This has been the prime message in world religions: now the economic and political means for doing so are more within reach. The last hundred years alone has seen progress here, with the rise of the masses, environmentalism, welfarism, civil rights, the United Nations, etc.

In fact, we may eventually revitalize the old virtues of harmony and brotherhood on a new, universal scale. A world consciousness is already growing: television cameras can now instantaneously mobilize world opinion, thus dissuading tyrants from killing protestors, or preventing islanders from slaughtering whales by the hundreds on their beaches, and raising millions for starving children in Africa. There is perhaps room for *some* optimism (perhaps not of the utopian kind) over the future of man's harmony with himself and his world, given our growing economic dependence on each other and our growing awareness of our ecological dependence on other life forms. Such potentials for open-ended progress (despite some obvious setbacks) is one of the most appealing features of civilization.

149. Putative claims of progress can be based on all kinds of ideals, but as will be suggested in our critique of the role of ideas in history below, the most compelling and enduring ideals are those that are well founded in basic human needs concerned with flourishing not only at the animal level, but also in the fully human sense of achieving creative self-expression.

It will be argued below that ideals, customs and instincts are all vital guides in life, provided they work together. This isn't a conventionalist ethics which equates duty with what's customary. Nor is it a consequentialist, naturalistic ethics which ultimately defines "good" and "right" in terms of basic human needs. The view is simply that ideals shouldn't be *divorced* from customs and needs, as some radical deontologists might suggest. Ideals, customs and needs should work together. Ideals derive their power to lead over the long term from their ability to satisfy our basic needs by successfully arranging our social institutions.

150. See chapter 5 of Cipolla's *Economic History of World Population*.

151. Judging from surviving tools, culture didn't begin to evolve appreciably until the late Acheulean, and it evolved far less in the whole of the Paleolithic than it did in the quite brief Neolithic, which directly followed.

152. This thought mode isn't primitive in the sense of being *infantile* (traditional peoples are very intelligent and possess sophisticated practical knowledge), but in the sense that it is a precursor of more powerful modes that incorporate its richness and vitality, while greatly extending its symbolic potentials.

153. Again, this doesn't entail that it's preferable, but it is rational grounds for preferring it. Facts about human needs are relevant to our evaluations of lifestyles just because we're not disembodied intellects or armchair thinkers.

154. The fact that one position was determinist and the other was reductionist didn't mean that there weren't *are real points of conflict between them* (see, for example, the end of the introductory chapter).

CHAPTER 5

THE SYNERGY OF INSTITUTIONS AND INSTINCTS

The purpose of this work is to gain a more comprehensive understanding of imagination by looking into the evolving synergies of its roots, from which its structures, powers and limitations derive. In keeping with this aim, we're looking here in part two at the synergies of imagination with its external, sociobiological roots (institutions and instincts).

While the previous chapter in part two studied the external institutional roots of imagination, this concluding chapter of part two will widen this study to its external instinctual roots. We'll examine instincts and institutions together, with an eye toward their effect on imagination. We'll study institutions and instincts together because it's together that they drive imagination's history and forge the psychological developments seen in part one.¹ Ultimately, imagination can be fully understood only by looking in just this way at its unfolding history, for as we've seen, imagination consists of dynamic, evolving synergies.

This chapter will employ the same structure as the other chapters in pursuing the aim of more fully understanding imagination by looking into the synergies of its roots. First I'll confront the stubborn territoriality and ideologies in scientific accounts of humans. I'll criticize attempts to *deny the independence* of our biology and culture from each other by treating us as either robotic gene machines or environmentally determined lumps of clay. This will clear the way for a genuine *synergy* between institutions and instincts as autonomous, interactive phenomena.

Next we'll study just how this synergy mutually transformed instincts, institutions and imagination. We'll see how biology and culture *promote* each other, thereby unlocking potentials and dynamics in each other that couldn't exist without their thorough-going synergy. We'll also see how biology and culture *oppose* each other. Here we'll examine how instincts caused historical backsliding from cultural ideals, and how cultures domesticated our instincts on the road to civilization. All this represents the culmination of our study (over these last three chapters) of the *rational reconstruction* of the human mind, from its primal form which was dominated by instinct and intuition into a more civilized form with disciplined, coordinated control of emotion and intuition.

Again, we'll see how these developments are generally *progressive*, in that they extend our abilities in powerful, enriching ways which give us greater autonomy to direct our destiny. These developments represent the progressive liberation of imagination in evolutionary history,

first from biological determinism, then from cultural determinism. This represents a progressive unlocking of the mutual potentials of biological, social and mental evolutions, as well as a shifting center of gravity between them (the heydays of instinct, traditions, and imagination, respectively). However, despite this growing autonomy of imagination from its biological and cultural roots, it isn't *emancipated* from these roots, for it still flourishes best in close dialog with them.

These conclusions about imagination's nature, powers and limitations² are based on an integrated historical, psychological, sociological and biological analysis which is lacking in other accounts of imagination.³ The evolution of the rational mind was explained *psychologically* in chapter two as an evolving synergy of symbolism and imagery, while it was explained *sociologically* in chapter three as an integral part of the evolution of civilization. Here in chapter four, this evolution of the rational mind is explained *biologically* as part of the domestication of human nature. This again highlights the need to take seriously the fundamentally historical nature of imagination. To fully understand the nature, powers and limitations of imagination we must see its dynamic, underlying synergies in motion in their historical development.

THE AUTONOMY OF INSTITUTIONS AND INSTINCTS

As just noted, this chapter parallels previous ones in that it seeks to show that socio-cultural and biological evolutions are independent yet interactive phenomena engaged in dynamic, evolving synergies together. We'll begin by scrutinizing first biological determinism, then environmental (or cultural) determinism, both of which attempt to deny the autonomy of the biological and cultural roots to human action.

Critique of Biological Determinism

Biological determinism claims that all animal behavior is genetically determined. There's no room here for the autonomy of minds or societies in this determination. Humans are seen as mere gene machines. As Dawkins (1976) puts it, they're great "lumbering robots remotely controlled by our genes." Genes created us body and mind. They've given us our loves, hates, fears, and in fact, all our basic feelings: they're all instincts programmed into us by our genes. Preservation of our genes is our ultimate purpose. Without thinking, we sacrifice our own lives for those of our children, and we do this (whether or not we realize it) so that our genes will be perpetuated.⁴

But are we really so robotically controlled by our genes? One reply to the biological

determinist is that we can dream up our own purposes which often seem to fly in the face of our genes (see Midgley (1978) for example). Asceticism, chastity, contraception, suicide, and infanticide are seeming examples. But the counter reply could simply be that these purposes, themselves, are genetically based. For example, the ascetic often denies his bodily needs because of his religious views, which in turn may themselves have instinctual bases. These instinctual bases of religion could (arguably) include our sense of love and adoration, our sense of mystery and curiosity, our senses of awe and fear of the unknown, our respect for and loyalty to authority, our senses of guilt and grief, and our need for emotional security and for identity with something larger than ourselves.

A more plausible reply to biological determinism relies on recent findings about the negative effects of extreme social deprivation on individual development. Monkeys reared without any social contact whatsoever from birth have turned out to be socially, parentally, and sexually deficient, though some evidence of the reversibility of this condition exists (Suomi, Harlow, McKinney 1972). Institutionalized children who receive little social contact exhibit a similar condition. They are intellectually, linguistically and emotionally stunted, though again the condition may be somewhat reversible (Skeels 1966).⁵ The suggestion is that higher mammals need extensive social contact and cultural interaction in order to fully develop intellectually and emotionally. Behavior isn't determined by just genes, but also by socio-cultural factors, and behavior is impaired without the latter. Indeed, the fact that socially deprived monkeys find it difficult to mate, suggests that some higher mammals are born biologically incomplete and need society in order to become biologically fit.

Perhaps the simplest and most straightforward reply to extreme biological determinism is to point to the *wide variety of differences between cultures* in all fields (cuisine, religions, dress, courtship, etc.). The biological determinist can only fall back to a modified position here, which starts by allowing that culture has some influence on behavior, but then tries to minimize this influence by citing strong, pervasive genetic bases to each area of culture (as was suggested for religion above).

Another reply to biological determinism is one which aligns with a main theme of this chapter. This reply is that the evolving dynamics of the cultural motor, which are based on the interactions of individual minds and socio-cultural institutions, are not assimilatable to biological principles and dynamics. That is, minds and societies evolve in part according to the interactions of their own, *autonomous dynamics*, which are not reducible to biological principles.⁶

This isn't to deny that social evolution, for example, is strongly rooted in biological factors such as the survival needs of populations, the size and density of populations, the genetic relatedness of individuals within populations, and the arrays of resources and hazards within environments. The point is that social and biological evolutions can easily come into conflict as

such factors change, thereby pushing societies into either biological extinction or into less social states. Social evolution is independent of biological evolution, despite its roots in it, because societies unfold according to their own system requirements.⁷ Biological evolution promotes societies just because they bring such emergent features to populations. Societies bring new organizations (packs, tribes, etc.) with new strategies (for defense, feeding, reproduction, etc.) which populations of solitary organisms miss out on.

Similar problems confront attempts to reduce mental evolution to biological evolution. Minds seem to have emerged along with the increasingly centralized organization of nervous control systems, yet they also seem to exhibit different properties from these biological systems. Minds contain feelings, thoughts, sensations, etc., but these private, intangible entities are not directly observable in brains, no matter how hard we look. If biological determinists try to reduce minds to brain events here, they would face familiar problems with the explanatory gap between mental and neural events, and with anti-reductionist conceivability and knowledge arguments.

But in order to actually deny the *autonomy* of these supposedly minds from brains, the biological determinist would have to turn to *epiphenomenalism*, which treats the causal relationship between mental and biological phenomena as strictly one-way, from the biological to the mental. However, there are numerous problems with epiphenomenalism (as we saw in a previous chapter⁸), especially those forms of it which are compatible with biological determinism. Most of all, epiphenomenalism owes us an explanation of how the development of ideas can really be reducible to brain events, when ideas in fact seem to unfold via their own logics, and seem to have a validity that transcends spatial-temporal contexts.

The rise of civilization can illustrate how minds and societies aren't assimilatable to biological principles, but instead evolve according to the interactions of their own, autonomous dynamics. As the cultural motor evolved, both minds and societies became (in their own characteristic ways) more systematic and coordinated in their internal operations. In social evolution, for example, civilization emerged through progressive technological, economic and political interactions which fed upon one another. As we've seen, actual pathways to this more complex sociality varied, but always they funnelled into the same mold characterized by true governments in the form of theocracies (with powers to tax, raise armies, wage war, make and enforce laws, etc.) and by urban or semi-urban society (with dense, stratified populations, extensive architecture, and differentiated professions such as the priesthood, military and specialized crafts), all of which were supported by large trading networks and surpluses from their irrigation agriculture.

Now, biological factors like survival needs, natural resources and population pressures helped shape the broad contours of these trends above, but the evolution of civilization was also very much a matter of cultural explorations of new social forms with their own, autonomous

system “logics.” In the economic sphere, for example, human biology may have helped determine that we cooperate in obtaining food and manufacturing artifacts; but it has had little to say about the actual stages of economic development, each with its own complex institutions for producing and distributing such goods. Similarly, it’s difficult to see how systems of writing, law, taxation, money (or any of civilization’s main institutions) can be wholly reduced to biological principles.

In mental evolution, too, there was a trend towards more hierarchical and coordinated forms of organization. Piaget has outlined basic stages in this progression, and subsequent research has confirmed that these stages apply across cultures (Lloyd 1972, Hallpike 1979, Gleitman 1981, Carroll 1964, etc.). As we’ve seen, the necessity of these stages (at least in their most basic form) stems from the basic constraints of our cognition. We don’t have direct and immediate knowledge of reality, but instead must abstract information from the senses and organize it into a coherent form via thought. We actively construct our conceptualizations through probing interactions with our environment. Thus, we proceed from a primitive stage which is superficial, impressionistic and haphazard to more advanced stages which systematically penetrate beneath perceptual surfaces to plumb underlying relationships in ever more abstract, comprehensive forms. We have found similar internal “logics” in the development of the formal sciences, the empirical sciences, ethics, etc.

In this way, minds and societies (in the form of reason and civilization) together became richer and more diversified in their contents, more hierarchically integrated in their structures, broader and more ambitious in their horizons, and more systematically coordinated in their operations. But most importantly, they did so in their own characteristic ways, according to their own, internal organizational principles – and not just according to biological principles. The history of banks, architecture, mathematics, etc., cannot be derived solely from biological facts.

In sum, there are various arguments against the biological determinist’s attempt to treat cultures as epiphenomena of our biology: the existence of cultural diversity, the impairment of individual development without social and cultural contacts, and the fact that cultures evolve according to their own dynamics which are not reducible to biological principles. It seems most sensible, therefore, to conclude that cultural evolution is autonomous of biological evolution. Similarly, this same autonomy from biological principles can be attributed to the mental and socio-cultural interactions which constitute the driving motor of cultural evolution.

Another, wholly different way of making the case that mental and social evolutions have become increasingly autonomous of biological evolution is by actually *tracing their evolving relationships* in evolutionary history, while keeping an eye out for signs of this growing autonomy.⁹ We’ll turn to this now.

Mental and social evolutions are mere appendages of biological evolution in

invertebrates. *Invertebrate* behavior is slavishly ruled by rigid, stimulus-bound instincts and their societies are based on robotic, blindly altruistic cooperations between closely-related members lacking individuality and autonomy.¹⁰ However, as recent *vertebrate* groups evolved, behavior became more conceptualized, flexible and voluntary.¹¹ These mental developments helped to stimulate further developments in socio-cultural evolution. Vertebrate societies became based on intelligent, self-interested cooperations between autonomous individuals.¹² Out of these cooperations vertebrate cultures emerged,¹³ based on mutual reinforcements of individual minds and social customs. These reinforcements fortified minds and cultures, and further strengthened their growing independence from biological factors.

These trends culminated in humans, who seem to have adapted their highly cultural primate heritage into the new niche of a bipedal, tool-using social carnivore.¹⁴ This new niche apparently restructured hominid biology, placing greater than ever premium on the opportunistic, manipulative cunning of our primate ancestry,¹⁵ but also selecting for a more cooperative and persistent mentality. Thus, in this early, formative period, the biological foundations were laid for an unprecedentedly powerful intelligence, sociality and culture.

Once intelligence reached a critical threshold, culture underwent a series of internal transformations, starting with symbolism, the most powerful of all cultural artifacts. This propelled us out of our early, biological stage which was dominated by instinct, into his next stage, where cultural traditions played an expanding role, and eventually into his civilized stage where imagination played an expanding role.

Unlike other tools, which are turned outward to master the world, symbolism is turned inward to master ourselves, our potentials. This opened up whole new realms of possibility to evolution. As we've seen, with symbolic language we could talk about *all things* and relate them systematically in *all ways*. This allowed us to build great edifices of thought and society, and boosted the internalization of culture and externalization of thought. It opened culture up from its material confines into the realm of ideas and possibilities.

Symbolism thus greatly advanced the cultural motor. It greatly intensified the fertile interplay of minds and societies into ever more systematically organized and richly resourceful forms. It transformed culture into a powerful dialog of rational minds and planned societies. Launched on the back of our ancient biological evolution, this new, symbolically reconstructed cultural motor now accelerated away on its own inner drive, much like a jump-started automobile. The trajectory of this acceleration continues upward to this day.

Thus, when we look to evolutionary history, we find that biological evolution has in fact itself promoted mental and social evolutions. It has done so for the clear gains they bring in fitness, such as more adaptable and cooperative modes of feeding, defense, and breeding (witness the power of human culture here). So, biology promotes culture and culture promotes

biology, and in this synergy both build upon each other and open up new vistas of possibilities in each other. So our natural history provides little evidence of the lopsided determinisms of culture and biology noted above.

Biological determinism in fact seems more applicable to the blindly instinctual invertebrates, whose behavior is stereotyped and preprogrammed, than to the higher vertebrates, whose behavior is voluntary, flexible and insightful. Thus, we find progressively less domination of social evolution by innate factors of instinct and kinship – and progressively more evidence of intelligent, voluntary cooperations of individuals – as we compare insect colonies to higher vertebrate societies, then to simple human societies, and finally to civilization. In this progression, mental and social evolutions became less dominated by biological factors (survival needs, demographics, natural resources, etc.) and thus became freer to develop their own inner potentials and dynamics.

Critique of Extreme Cultural Determinism

Let's now turn from biological determinism to cultural (or environmental) determinism, which also denies the autonomy of biology and culture, but in an opposite manner to biological determinism. In explaining human action, cultural determinism claims that biological factors are completely usurped by cultural ones. In this way it denies an autonomous role for instincts in the shaping of man.

The most extreme version of environmental determinism is *behaviorism*. Behaviorists insist upon the paramount role of social and environmental conditioning in determining behavior, and upon the extreme plasticity of behavior. All the cognitive skills involved in thought, language, memory, etc. are simply chains of conditioned responses and networks of associations. Even the most complex of cognitive operations can ultimately be explained through the simple, mechanical laws of conditioning. This powerful idea represents a clear rejection of the nativistic accounts of cognition that have appeared among Gestalt theorists, structuralists and others. It is analogous to the earlier rejection by empiricism of rationalism and innate ideas.¹⁶ These empiricists insisted that all ideas come from the senses and are combined in chains of associations to form complex thoughts.

Behaviorism is often regarded with suspicion. If we're environmentally determined, then how do we explain why children so often seem to defy the training of their parents? For example, why do children inherit the stubbornness or bad temper of a parent, even when they're discouraged from doing so? Also, how is it possible for prodigies like Mozart to outstrip their teachers? Behaviorists are not without replies here, but to many the sensible answer is simply

that we're born with innate drives and abilities. Behaviorism is regarded with suspicion not only for banishing innate factors, but also for banishing consciousness.¹⁷ Suspicion arises here in part because a most prominent aspect of human experience is our *feelings*. Many of these are apparently not only *conscious* but also *innate*. For example, an infant can be taught (at least to a degree) what to fear or hate, but how can it ever be *taught* what the *feeling* of fear or hatred is unless it *already* has this feeling within its own mind?

Behaviorism's denial of innate factors also seems to run counter to common sense as an evolutionary strategy. A species whose behavior was totally plastic would have to learn, for example, not just what to eat, but when to eat, and whether to eat at all. Culture would help, but enormous amounts of time and energy would have to be invested in teaching individuals the most rudimentary of tasks. A much more viable strategy is that of "directed learning," where time-tested innate drives tell us when to seek food, sex, etc. It is hard to see how the elaborate trains of behavior involved in feeding, mating, etc., could have ever arisen based purely on conditioning without any innate apparatus for structuring perceptual and motor processes.¹⁸ Similarly, it's hard to see how beings so highly complex as humans could ever operate without sophisticated sets of innate drives and emotions addressing their most basic animal needs (e.g., sex and hunger), their social behavior (e.g., love and hate), and even their intellectual operations (e.g., curiosity and imitation).

Perhaps, then, it's not so surprising that behaviorism, and the associationism from which it descended, have received heavy criticism from so many quarters. This criticism began from their earliest inceptions.¹⁹ Modern science, too, has leveled sustained criticism against these doctrines. Critics are quick to admit that conditioning of behavior and association of ideas do play substantial roles in thought and action. After all, we are, despite our rationality, still very much creatures of habit, and our conceptual systems are, despite their logical structures, still very much linked together by rich fields of association. Yet the portrayal of learning as *totally plastic, environmentally determined, and comprised of passive associations of perceptual materials* tends to reduce us to passive lumps of clay wholly shaped by our environment, when our thought and action are in fact often deliberately controlled in systematic, structured, insightful ways. As we'll see, it seems that animals don't just passively learn chains of habitual associations: they also learn to *actively restructure and reorganize* what they perceive.

To begin with, behaviorism's preoccupation with conditioning has caused it to overestimate the flexibility of learning abilities in *less intelligent* animals. Maturation is an obvious problem for behaviorism, for it consists of pre-programmed growth processes relatively unaffected by the environment (e.g., learning to walk or fly). Learned aversions are another problem. Experiments by Garcia and Koelling (1966) show that rats learn on the basis of taste to avoid foods they ate just before becoming ill, while they learn to avoid painful objects on the

basis of sights and sounds. Such phenomena show that learning is not as flexible in less intelligent animals as behaviorism suggests.

Behaviorism's obsession with conditioning has also caused it to underestimate the insightfulness of learning abilities in *more intelligent* animals, especially apes. Experiments by Kohler²⁰ show that when fruit is placed out of reach of chimps in their compound or cages, they'll show considerable ingenuity in getting at the fruit by using boxes and sticks available to them, even to the point of stacking boxes into makeshift ladders to get at hanging fruits, or sticking two poles together to extend their reach.

These achievements weren't just the result of fortuitous associations gradually formed by blindly fumbling about (as with Thorndike's cats, or in a Skinner box). Instead solutions often came suddenly after the chimp paused to study the situation. Also, what they learned were internal representations, not simply pre-conditioned motor responses to stimuli.²¹ This was shown by how the solutions were transferable²² beyond the original stimulus situations in which they were learned (Kohler was himself used on one occasion as a climbing platform in place of a box). What was learned was a *principle or insight* (a grasp of the structure of a situation), not just associations between perceptual elements that happened to occur together in the past.

In humans, of course, the capacity for insightful, planned behavior is even more extensive, partly because of our symbolic language. Reliance on passive associations (with each element triggered by the preceding one in the chain) is thus all the more implausible in accounting for our highly systematic approach to problem solving. In such a case, our problem solving would quickly flounder in a morass of irrelevant associations. For example, setting out to plan the summer's household budget, we'd swiftly become lost in reveries about where to go for the summer vacation, etc.

Instead, our problem solving is disciplined and *structured*. In planning our summer budget we begin with a schedule of our cash inflows, then enumerate our monthly expenses, then look at how much we have left each month for travel and entertainment, etc. Typically, such thinking is organized in a hierarchical way, branching out from the original problem into sub-problems. Whatever its precise structure, its course is largely determined by the original problem, rather than simply by trains of extraneous associations. This is why such thought is called "directed thought". With an original goal in mind, we actively manipulate ideas and situations in thought to uncover their inherent relationships and possibilities.

Associationism and behaviorism tend to view memory formation in terms of the rote memorization so well exemplified by the learning of chronologies, foreign language vocabulary lists, or Ebbinghaus's nonsense syllables. Memory consists here purely of interconnected networks of associations, where the relevance of one element to another is determined by volumes of interconnections. But this view overlooks that the *organization* of materials is also a

factor in memory. For example, it's far easier to remember a sentence of a dozen words than to remember these same dozen words in a scrambled list. Examples of how our conceptual systems are organized beyond the level of mere association fields are the logically structured taxonomies so prevalent in scientific thought, as well as the deep structures (grammatical, mythological, etc.) structuralists are so fond of, and the *Gestalten* (patterns, such as melodies or shapes, that transcend any particular sensory incarnation) which pervade various levels of cognition, according to Gestalt theory.

To associationism and behaviorism, remembering is a passive affair of fishing up fixed associations. But the above observations on how organization aids memory suggest that memory is, instead, an active, *constructive* process. Experiments by F.C. Bartlett show that we tend to reconstruct the past on the basis of partial recollections, much like a scientist reconstructs an entire dinosaur from its bones.²³ When Bartlett asked British schoolboys to recall stories read to them from foreign folklores, they tended to reconstruct the stories upon the bases of what they could actually recall. The recalled version of the story was generally shorter than the original and reinterpreted into more familiar conceptions (when, for example, unusual supernatural plots elements were involved). The subjects were often unaware that they were actually fabricating some of their recollections. Similar trends appeared when stories were passed serially from one person's ear to another person's ear.

To associationism and behaviorism, language is also based on networks of associations that are practiced until they become habitual (as, for example, when "thank you" elicits "you're welcome"). But Chomsky points out that this purely habitual approach to language is unworkable, given the great complexity, variation and novelty of language. We cannot possibly store all possible English sentences in our memory, yet we easily generate English sentences most of our waking life, and often in novel ways.²⁴ Once again, what's being learned here is clearly not just habitual associations, but also *insights into structures and principles of things* (grammars, in this case). As Kohler put it, we're attaining a "grasp of the structure of the situation."

As we've already seen, symbolic language is instrumental in emancipating thought from perception and forging it into a more abstract, systematic, coordinated form than that found in S-R conditioning. Cassirer (1944) notes that with the rise of humans, *a world of symbolic thought intervened between the stimulus and response*. Similarly, Vygotsky describes how our responses come to be mediated by a symbolic realm of ideas, whose abstract, systematic organizations transcend mere fields of association.²⁵ As our thought becomes more systematic and coordinated, our action becomes more deliberate and planned. On this view, thought has its own autonomous organization. This is incompatible with associationism and behaviorism, which claim that thought and action are determined by passive associations, with one element mechanically

triggering the ensuing one in the chain.

Thus, a basic problem with behaviorism and associationism is that they cannot account for the important class of thought and action which is *deliberately controlled in systematic, structured, insightful ways*. Such thought actually emerged through the gradual emancipation of cognition from perception and conditioning, and the progression of thought onto the ever higher levels of conceptual mobility and inner autonomy. This progression is evident starting from the intuitive thought of mammals, and proceeding to the symbolically articulated (yet animistic) thought of early humans, and the rational thought of civilized humans, respectively.

Critique of Moderate Cultural Determinism

Given the problems of behaviorism, many sociologists have turned to a weaker form of environmental determinism. This weaker version, which aligned with Marx's old view, minimized innate factors and left us free to make ourselves through our socio-economic and cultural history.²⁶ It was still skeptical of biological constraints on our behavior, but didn't go so far as behaviorism in denying all innate factors here. This weaker environmental determinism admitted that we have instincts, but argued that our prolonged infancy and high intelligence means that we're actually under-determined by our instincts, so we're dependent upon culture for our full development. The emotional and intellectual impairment of socially deprived children illustrates this point. The conclusion drawn from such observations was that our high plasticity essentially leaves us free to produce our own nature.

But this weaker form of environmental determinism has met with growing skepticism in recent decades. Studies of identical twins, for example, are now suggesting that there are significant genetic bases to both personality and intellectual abilities in humans. One series of studies (headed by Thomas Bouchard, Jr. since 1981 at the University of Minnesota) were noteworthy for their unprecedented scope. They initially managed to locate 77 identical twins that were separated soon after birth and were subsequently raised in isolation from each other by different families. These twins were then subjected to batteries of standard personality and intelligence tests, and the correlations between their scores on specific traits were compared to correlations between pairs of individuals who weren't identical twins raised separately. These other pairs consisted, for example, of normal siblings or fraternal twins (raised together or apart). It took a long time to accumulate and analyze data in this long-term study. But this study yielded some interesting indications of the relationship between nature and nurture.

These identical twins consistently showed much higher correlations on IQ scores than the other pairs.²⁷ Even when they had very different schooling, these identical twins consistently

showed very close scores on tests of spatial perception, verbal fluency and IQ. Identical twins reared in the same family usually showed about an 86% correlation in IQ scores, while identical twins raised apart showed a 72% correlation. By contrast, regular siblings reared together showed a 47% correlation, while adopted children showed only a 32% correlation with their non-blood siblings. Because the identical twins raised apart are genetically identical despite often widely different educational backgrounds, these findings suggest that 72% of intelligence is genetically inherited, at least in terms of the parameters of intelligence on these tests. One of the many personality tests evaluated for impulsiveness, aggressiveness, need for achievement, traditionalism, stress reaction, sense of well-being, social potency, alienation, harm avoidance, and proneness to imaginative activities.²⁸ Here correlations were lower than with intelligence, but they still ranged between 55-39%, suggesting that the genetic heritabilities of these traits hovers around 50%.

This weaker form of environmental determinism has come under attack from other quarters as well. In recent decades we've expanded our knowledge of different human cultures and animal species, which has given us a broader basis for our comparisons of behaviors between humans, as well as between humans and other species. From this perspective, E.O. Wilson notes that in order to avoid a distorted view of humans, the environmental determinist's preoccupation with our admittedly high degree of plasticity must be balanced with an appreciation of the *deep similarities* between our biological nature and that of many other species.²⁹ These biological similarities are all the more striking when we keep in mind *all the universe of possibilities contained in biological evolution*. While there are great cultural differences between some human populations, consider the vast biological differences between men and sponges, for example.

An example of similarities between humans and other species includes how the basic direction of human evolution may have been fixed when our primate mentality and cultural capacity were adapted to the niche of a bipedal, tool-using pack hunter, thus producing the biological formula of a species destined to quickly master his environment. This put us at the forefront of the vertebrate trend toward higher sociality based on increasingly sophisticated cooperations between increasingly intelligent individuals. But it also fortified our character with traits common to other pack hunters, e.g., persistence, pugnacity, pair bonding, families groupings, and strong group loyalties, cooperations and altruisms. Throughout this long formative period we retained an even broader background of common vertebrate traits, including drives like fear, anger, lust, etc., as well as specifically mammalian traits like maternal love of offspring, polygyny, male-dominated society, etc.

Twin studies and cross-species studies suggest some criteria by which we decide whether behaviors have innate components: (1) pervasiveness of the behavior across human cultures and

related animal species; (2) greater correlation of the behavioral trait between identical twins than between less genetically related individuals. Other criteria would seem to be: (3) resistance of the behavior to cultural modification; (4) lack of a clear cultural explanation for the behavior or presence of a clear biological value to the behavior, as in the seeking of food or sex; (5) mediation of the behavior by physiological and hormonal developments; (6) presence of the behavior in newborns; (7) existence of basic emotions which upwell within us but can't be learned (recall the argument that we may teach people what objects to fear or hate, but not the feeling of fear or hate itself). It would seem that the more of these criteria that apply to a particular behavior, the more confident we tend to feel in saying that it has an innate component.

Several of these criteria would seem to suggest that there are instinctual bases to sex, parental love, altruism, selfishness, aggression and fear, (including xenophobia), to mention but a few examples. They are prevalent across human cultures and species related to humans, and (in the case of some) seem to resist family and cultural curbs placed upon them. They also have clear survival value, are basic emotions which upwell within us but can't be learned, and are mediated by hormonal developments in puberty. It's hard to escape the conclusion that such basic traits as these are, at least in part, instinctual. It's also hard to escape the conclusion that they shape human behavior in *powerful and pervasive* ways, despite the claims above that our cultures have *outgrown or superseded* our instincts.

Turning around this latter claim, that our cultures have outgrown or superseded our instincts, it might be argued that, to the contrary, the effects of innate factors on culture, itself, may actually run quite deep. It is presumably because we're pack hunters that we have such a heritage of cooperation and persistence. It is presumably because we're primates that we possess such a manipulative cunning. It is presumably because we're vertebrates that our sociality is based on intelligent self-interested cooperation, rather than blind altruism. These factors have created the basic instinctual infrastructure in which the most fundamental characters of our societies and cultures seem to have developed.³⁰

Along the same lines, it might be argued that the *development of our social and cultural institutions is in large part geared toward more efficiently meeting our biological needs*. Thus, while Marx claimed that man makes himself through his productive abilities, his technologies and economies might well be seen as being, themselves, driven by his biological needs. Much the same may be true of the cultural motor, itself, which is the very driving force behind cultural evolution. This motor is governed in part by a balance of conservative tempers (springing from the need for security and belonging, obedience to authority, and group loyalty and pride) and rebellious tempers (springing from curiosity, youthful rebelliousness and wanderlust, the struggle for social rank and status, anger at exploitation, and compassion in the face of suffering). Arguably, many of these drives and emotions have some innate bases.

These tempers could contribute in various ways to two contrasting political ethics which have pervaded history. Nietzsche called them the “master” and “slave” moralities (illustrated by barbarian kings and Christian martyrs, respectively). They could just as poetically be called the “masculine” and “feminine” spirit. Essentially, the masculine spirit emphasizes the strong individual working toward a proud society. By contrast, the feminine spirit emphasizes a caring society working for the weak individual. The masculine wants a strong, glorious society; the feminine wants a merciful, compassionate society. The masculine stresses individuals’ responsibility for their society; the feminine stresses society’s responsibility for its individuals. The masculine sees the feminine as weak and indulgent. The feminine sees the masculine as arrogant and chauvinistic. The masculine flourishes in times of turmoil, while the feminine flourishes in comfortable times.

Ethics may be rooted in instinct in other ways too. Ethics usually come with theories of human nature attached to them, which help to reinforce and explain them. In fact ethics is largely vacuous or whimsical without reference to human needs and feelings. Ethics is largely about how to best realize the competing demands of human nature. It presumably arose once humans began to reflect upon their needs and actions. In humans, like in other social vertebrates, there’s a basic conflict between self-preserving instincts and society-preserving instincts. Accordingly, the central, defining conflict of ethics is that between the self and others. All human societies use ethics to check the aggressive, sexual, selfish natures of its members. They do so by mobilizing other emotions such as compassion, guilt, loyalty, fear, etc. The power of ethics to guide is derived from the very powers which they seek to control: ethical conduct amounts to enlightened self-guidance.

The character of religion, like that of morality, may also be shaped by important instinctual motives.³¹ Most definitions of religion even contain a list of characteristically religious emotions as defining characteristics of religion, even though some from this list are shared with, e.g., ethics. The list includes our anxiety at the unknown, our terror in the face of death and chaos, and our emotional need for security and for identifying with something larger than ourselves. In this context, religion has often been seen as a response to insecurities and yearnings not fulfilled in this world. It serves as a metaphysical womb into which we can withdraw. Religion also draws on other instincts like our feelings of love and adoration, our feelings of both curiosity and awe in the face of mysteries, our feelings of respect and loyalty to authority, as well as feelings of guilt, grief, compassion, sexuality, etc. In fact, so powerful are the yearnings for God that belief-systems like Confucianism and Buddhism were popularized only once their founders were properly deified. Even mystical religions like Hinduism were forced to admit Gods as guises of Brahman to keep the faith of the masses.

Again, like ethics, religion works within our cultures and societies to check our

aggressive, sexual and greedy natures. It seeks to do so by reorienting us toward our true, spiritual needs and away from our false, animal needs. But, again, it seeks to do so by mobilizing powerful, characteristically religious emotions. Here religion offers us enlightened self-guidance.

THE SYNERGY OF INSTITUTIONS AND INSTINCTS

As already noted, this chapter parallels previous ones in that it seeks to show that socio-cultural and biological evolutions are independent yet interactive phenomena engaged in a dynamic, evolving synergy together. We've just seen how these cultural and biological evolutions are autonomous of each other. Now let's look more closely at their *synergy*. These will tell us more about the role and capacity of *imagination* because imaginations are imbedded within cultures, which are in turn imbedded within our biologies.

There is a broad and obvious middle ground between the view that we're robotic gene machines or that we're environmentally determined lumps of clay. We can allow a still central role for instincts in human action, given the pervasiveness of certain traits among humans and related species. But we can also allow a central role for culture in human action, given that our great intelligence opens up real alternatives in the cultural realization of our innate nature. Our biology and culture clearly promote each other. Genes have promoted powerful cultural motors (i.e., powerful synergies of imaginations and institutions) just because they promote biological fitness. Culture and biology work together, unlocking potentials in each other that could never exist without their thorough-going synergy. We already traced the emergence of this synergy when discussing how biological evolution promoted greater autonomy in cultural evolution.

There is another way of expressing this synergy of biology and culture. In biological determinism, culture just explores the possibilities already within human nature, like the strategies in chess just spell out the possibilities contained in its basic movement rules. By contrast, in cultural determinism culture supersedes biology, with culture containing its own dynamics which unfold independently of biology. The two can be reconciled by recognizing that culture is rooted in our biological stratum, but has its own emerging dynamics not reducible to biological principles. This reconciliation further recognizes that the two mutually unlock each other's potentials, and that their mutual developments are deeply intertwined, with both promoting and developing the potentials of the other, and often even restraining the other.

Because of the synergistic nature of their relationship, it's thus often said that we shouldn't talk of biology versus culture, but instead of biology via culture. But the fact that biology and culture promote each other, should not blind us to the fact that they are, indeed, sometimes opposed. Genuine synergies are marriages between autonomous entities. It is just

because culture and biology are autonomous that they constrain as well as promote each other. So we should look not only at how biology and culture have promoted each other, but also at how they may keep each other on a leash. We'll find that – precisely because we're not just gene machines, but also imaginative, cultural creatures – these relationships between biology and culture are not strictly objective ones that we can describe in factual terms, but also partly subjective relationships that we can only prescribe in philosophical and ethical terms.

As already emphasized, we're focusing on the synergy of biology with the cultural motor in order to shed light upon the capacity of imagination, which is part of this cultural motor. Our conclusions in this section about how biology constrains culture, together with conclusions in the previous chapter about how culture constrains imagination, serve as sober balances to other passages which describe the swelling powers of imagination. The biological and cultural roots of imagination are rarely considered in other philosophies of imagination, which is unfortunate, for these roots are a key to understanding the true nature and capacity of imagination.

Instinctual Constraints on Culture

Let's look first at how instincts may constrain cultural development, then we can later look at how culture has constrained (domesticated) our instincts on the road to civilization. Biological constraints on culture are sometimes subtle and difficult to spot. But we may make some headway here if we turn, once again, to human history for evidence. We've already seen directly above how there might be biological bases to religion, politics, ethics, etc. This is suggestive. Let's look, then, to the history of such phenomena for evidence of how their ideas might be constrained by biological factors. A good place to begin is with the *world religions*, which produced some of the first ideas that really shaped history in fundamental ways. We can then look at the ideas of *liberty and equality*, which have shaped modern history so profoundly.

Constraints on Religion

As enduring, fulfilling and comprehensive in their appeal as the world religions are to humans, it is nonetheless, often claimed that they are *too spiritualistic and otherworldly, too much out of touch with our natural needs, and too dismissive of much that's required for full human growth*. While those who level such criticisms often overlook some of the real virtues of religion, there may be an element of truth in some of these criticisms.

Let's begin with the mystical religions. *Asceticism*, the denial of the cravings of the flesh,

is most prominent here. For example, deliverance comes to the most ardent Jains by transcending their physical being through meditation, detachment from the pollution of worldly things, and fasting, culminating ideally in death by starvation. Mahavira, himself, died in this saintly fashion in 527 B.C.³²

To the avid mystic, it's the mystical communion that's of overriding importance, and everything else (scriptures, ritual, and even to a degree material and social needs and morality) are secondary. The *Upanisads* are the oldest source of this outlook. Mystics tend to treat the flesh as corrupting of the soul, and as a prison for the soul. They even tend to treat belief in the independent reality of the material world as ignorance and illusion. They see salvation in terms of transcending all such distinctions for communion with the One, undifferentiated reality. In their goal of losing themselves in an impersonal One, mystics differ from theists, who believe in both God and creation, and who feel that we should love God and follow his commandments.

Theistic religions tend to be more socially and morally engaged, and somewhat less contemptuous of the flesh (compare the *Upanisads* and the *Old Testament*). After all, God created the flesh and calls upon us to live morally and socially in accordance to his word. Yet these religions, too, are quite spiritualistic, for salvation is, of course, ultimately a spiritual affair. There is, accordingly, still considerable resistance to becoming wrapped up in fleshly pleasures here. Few of them would wish to endorse, for example, the claims of Romantics like Blake that we should emancipate (rather than control) our animal passions: "As the caterpillar chooses the fairest leaves to lay her eggs on, so the priest lays his curse on the fairest joys."

The spiritual orientation of theistic religions is perhaps most evident in the selflessness of their ethics. Jesus Christ, for example, claimed that in the kingdom of heaven our normal, self-interested, materialistic standards are reversed.

Give to everyone who asks of you. And from him who takes away your goods do not ask them back. And just as you want men to do to you, you also do to them likewise. But if you love those who love you, what credit is that to you? For even sinners love those who love them. And if you do good to those who do good to you, what credit is that to you? For even sinners do the same But love your enemies, do good, and lend, hoping for nothing in return; and your reward will be great, and you will be sons of the Highest. (Lk. 6:31-5. Cf. Mt. 5:43-48.)

It has been said that few religions have expressed such high ideals, or have been further from achieving them. It is perhaps with visionaries like Mahavira and Jesus in mind, that some have claimed that religions are too preoccupied with our spiritual needs at the expense of the expense of our material, animal needs. These complaints reject competing metaphysical claims as irresolvable, and instead focus on the practical, observable effects of religion on our lives and

societies. The main complaint is that, except for a few saintly individuals, there is great backsliding³³ from these spiritual ideals (reception of the deuteronomic code is an early example). Indeed, most religions soon revert to the particular pattern toward which they were initially a protest (conventionalization). World religions that repudiated idolatry, ritualism, magic, polytheism, intolerance and corruptions soon found themselves re-acquiring them. Compare the actual words of Jesus or the Buddha with the institutions that were constructed in their names.

In the most ascetic religion of all, Jainism, few adherents are extreme ascetics, and of those monks that are, even fewer have chosen the saintly way of death (by starvation). Also, it's probably safe to say, for example, that many Christians do not conduct their sex lives in strict accordance with the teachings of their church. Nor would few church-going Christians come even close to adhering to such a selfless maxim as the one just mentioned above: "Give to everyone who asks of you. And from him who takes away your goods do not ask them back."

Even what was perhaps the most pervasive theme of world religions has been received, it appears, with a grain of salt. This was the call to love your fellow man rather than slipping into self-love and greed. This is a call which can be seen as an effort to reclaim the old ethics of brotherhood which we had left behind with our move into money economies and urban societies. "Love your neighbor as yourself," say both the Old and New Testaments (Leviticus 19:18, Mt. 22:37-40, Mk. 12:29-31). "Cut out the love of self as you would an autumn lily with the hand," says the Buddha (*The Dhammapada*, chapter XX). "When all the people in the world love one another, the strong will not overcome the weak, the many will not oppress the few, the rich will not insult the poor," says Mo Tzu (*The Mo Tzu*, chapter 15). "When the superior man has studied the Way, he loves men," says Confucius (the *Analects*, 17:4, cf. 12:22).

This call towards selfless love and away from selfish greed certainly hasn't fallen on deaf ears. Men have, indeed, increasingly learned to treat their fellow men with respect and to honor them as precious beings – and in large part because of great moral leaders who have opened our eyes here. But Muslims, Christians, Jews, etc. have also plundered and slaughtered their fellow men in vast numbers over the centuries. And even in their better moments, their charity towards the less fortunate is often less than generous (Americans presently give only 2.5% of their wealth to charity, according to one almanac, even though they are quite affluent and there is much suffering around them). In fact, humans appear to be strongly egoistic, even when reminded of the role of altruism in their spiritual salvation. It seems safe to say that while we are willing to help others, in general *we are first and foremost concerned with our own needs and the needs of those closest to us*. For the most part, our wealth doesn't flow to the neediest but to those dearest to us. The saintly call to "love your neighbor as yourself" is unlikely to ever be followed very far except in our dreams, and even by those who profess to believe in the prophets and their words.

This line of criticism must admit that world religions have done much to foster healthy, well-balanced psyches capable of pursuing fulfilled lives in mature civilizations. By putting love, hope and spirituality at the center of our being, they've helped in some ways to check the corrosive, disintegrating effects of the alienation, poverty, oppression, fear, and anxiety that all too often haunts urban civilization. These religions have helped in some ways to shape our psyches into the more humane and rational forms suitable to mature civilization.

Some of the more extreme complaints against religion may thus seem inappropriate. Freud's humanistic claim that religion is irrational and infantile³⁴ may have some appeal where religion conflicts with science, but what's *irrational* about seeking spiritual guidance and comfort in the face of the death, disease, loneliness, etc. which haunt our life on earth? Jung is more convincing here to many when he counters that religion is important to our mental health, our inner peace and harmony.³⁵ Some would even go so far here as to add that atheistic attacks upon religion actually help to dissolve our moral fiber, and help to produce decadent, egoistic, materialistic societies consumed by immediate personal gratification, and infested with drugs, divorce, VD, crime, etc. Religions are not the only ethics concerned with social problems, but they do, arguably, open up exalted spiritual dimensions to ethics which are capable of powerfully reforming and fortifying not only our conduct, but our whole personality. Purely secular philosophies are often pale by comparison here, and their power to reach deeply into our psyches is comparatively limited as a result.³⁶

The only point of the original criticism of religion was that its impressive strengths may harbor some shortcomings. While religion may have brought exalted, spiritual dimensions and motivations to our moralities, it is, arguably, the very loftiness and saintliness of these ideals that has sometimes hampered their overall effectiveness in shaping actual conduct among the masses of followers.

Constraints on Marxism

Let's now turn from the world religions, which produced some of the first ideas to really transform history, to the ideas of *liberty* and *equality*, which have shaped modern history so profoundly. It will be argued that the radically egalitarian society envisioned by Marx is not compatible with truly liberal society because it runs counter to human nature and to how people wish to live. But let's begin by briefly noting the social developments which promoted these very different values of liberty and equality.

This modern era was ushered in by a series of far-reaching revolutions in the fifteenth and sixteenth centuries. Politically, feudalism began to yield to modern nation states.

Economically, there was a great expansion of commerce which produced modern capitalism. Culturally, a renaissance of free, secular thought occurred. Religiously, the Reformation broke the religious unity of Christendom. The sixteenth and seventeenth centuries became the era of royal absolutism. These great kings played a crucial role by superseding the old, feudal nobility and forging the modern nation states.³⁷

But the economic and cultural revolutions just mentioned undermined this trend toward royal absolutism, for these revolutions produced a growing middle class and a questioning spirit. It was this powerful combination of factors which came together in the eighteenth century. This Age of Enlightenment promoted the beliefs in individualism, liberty and rational progress which stimulated the American and French revolutions, and helped give birth to liberal democracy.

One of the guiding intellectual outlooks of this whole era was science. From the beginning, the scientific imagination was the very embodiment of the rational, questioning, individualistic spirit of modern times. But this scientific spirit had far-reaching practical implications as well, for it stimulated an explosion in technology, which ushered in the industrial revolution in the eighteenth century. The industrial revolution was marked by the mechanization of industry, the application of new forms of power (like the steam engine) to these machines, and the development of factories financed by capitalism.³⁸

The industrial revolution transformed transportation, communication, energy production, etc., and created, among other things, mass prosperity and a mass consciousness. If it was the growth of the middle class that brought calls for greater *liberty* in the eighteenth century, it was the growing economic position of the masses that brought calls for greater political *equality* in late nineteenth century societies, not just for the common working man, but also for women, slaves and all oppressed peoples. However, this newfound emphasis on equality often didn't sit easily alongside the preexisting emphasis on liberty. This can be seen by looking once again at one the most ardent prophets of egalitarian society, Karl Marx.

Marx's case for a Communist revolution was based on his dialectical materialism,³⁹ a central feature of which is that "The history of all hitherto existing society is the history of class struggles." The culmination of class warfare is communism, which is forged by the class struggle between selfish bourgeoisie capitalists and the exploited proletariat (who grows larger and poorer as capitalism progresses).⁴⁰ This can occur only by revolution, not by democratic evolution, for the entrenched class never relinquishes control of society voluntarily. Accordingly, their 1848 manifesto ends as follows.

The communists . . . openly declare that their ends can be attained only by the forcible overthrow of all existing social conditions. Let the ruling classes tremble at a communistic revolution. The proletarians have nothing to lose but their

chains. They have a world to win. WORKINGMEN OF ALL COUNTRIES, UNITE!

In the Communist society that follows, the means of production becomes communally owned, workers are no longer exploited by capitalists and alienated from their work, society becomes classless and egalitarian, class warfare ends, and everyone works for the common good. Furthermore, after a transitional revolutionary dictatorship of the proletariat, the state withers away, for “political power . . . is merely the organized power of one class for oppressing another.”⁴¹ The vision is thus of an egalitarian, communal society based on a cooperative brotherhood working for the common good. People receive according to their need and give according to their ability, and all exploitation, alienation,⁴² and inequality are banished. Man, thus transformed, would voluntarily seek equality. In this way liberty and equality are rendered compatible.

The novelty of Marx’s thought is best summed up in his predictions that the class war which drives history will culminate in a dictatorship of the proletariat, which will institute a classless society, which will in turn represents the end of history, the end of exploitation, alienation and conflict.

What I did that was new was to prove (1) that the existence of classes is only bound up with particular historic phases in the development of production (2) that the class struggle necessarily leads to the dictatorship of the proletariat (3) that the dictatorship itself only constitutes the transition to the abolition of all classes and to a classless society. [*Communist Manifesto*]

Perhaps it’s not too far from the truth to say that what’s most unique in Marx (these predictions) is what’s now accepted as being most mistaken.⁴³ Marx seemed to be right in claiming that communism could spread only by revolution.⁴⁴ In its history it has spread almost entirely by guns rather than popular ballots. But contrary to Marx’s expectations, where it has been imposed, it has been subsequently been maintained by sheer force rather than a growing popular mandate. In this process, tens of millions have been killed, hundreds of millions have been enslaved, and myriad state economies have been bankrupted.

Marx also incorrectly predicted the rise of an international Communistic order.⁴⁵ The workers of each nation actually competed rather than united, as did different Communist regimes. Further, Marx incorrectly predicted the decline of not only capitalism, but also the state and religion, all of which were seen as instruments of exploitation or oppression. However, all these forces are still very much around, while communism has all but disappeared.

Communism is no longer seriously aspired to in the world today. It has collapsed out of

exhaustion from competition with a far more vigorous economic system. Its legacy, it's now almost universally admitted, is of failed economic systems and totalitarian political systems. By contrast, capitalism has proved to be far more vital and prosperous than Marx ever envisioned. Since his time it has produced vast and unprecedented economic wealth the world over. It has continued to expand the middle class, and has thus paved the way for further expansions of liberal democracy around the world.

Among the earliest indications of communism's failings was in agriculture. Once the Soviet Union forcibly collectivized its agriculture, it was no longer capable of feeding itself (just 3% of its land remained in private hands, but continued to produce most of its food). Similarly, Burma was the rice bowl of Southeast Asia prior to coming under the sway of Marxist economics: afterwards it, too, had to import food. These aren't isolated examples: all Communist economies failed agriculturally from the very beginning.⁴⁶

In 1969, the Chinese became the first to retreat from communal agriculture toward a decentralized system where farmers were allowed to keep their profits. Agricultural production prospered so much that these reforms were quickly transplanted into urban industries. Competition between plants was encouraged, managers were allowed to fire good workers and reward good ones, and profit taking was allowed. It was found that people became more enthusiastic, and worked harder and longer. Total output grew (by 61% from 1969-1983) and the availability of material goods multiplied. Agricultural production grew fifteen fold once collectivization was ended. Apparently, tremendous resources of human energy were being unleashed by modest loosening of rigid socialist strictures on the economy, and modest tolerances of profit incentives, private property and inequalities.⁴⁷

These lessons were further driven home by the dramatic differences in performance that were opened up between the West German and East German economies, as well as the South and North Korean economies. Another lesson learned here was that central control of economies is a grossly ineffective way of making economic decisions. A healthy economy is one which taps multitudes of spontaneous perceptions and innovations, not one in which everyone mindlessly marches to orders from remote bureaucrats. International banks understandably became quite reluctant to lend money to nations with centrally controlled economies.

Marx's most basic failure was perhaps his misunderstanding of the nature of the human motivations which underlie wealth production. He had great sociological insights about the role of dialectical forces, class conflict, and economic forces in history, but his theory of human nature seems to have been tailored to fit his ideological ends, rather than having been based on sound evidence.

Marx's views on human nature aren't even always clear. He felt that we are motivated by *self-interest* (it feeds the class conflict driving history), yet he also felt that we are capable of

working for *other's interests* according to the altruistic maxim "from each according to his ability, to each according to his need." Any attempt to reconcile these views runs into deep problems. Perhaps future society is to be structured so that it's in our self-interest to altruistically promote others' interests as a universal rule. But even if this is coherent (it seems flatly contradictory), does a society that erases classes, private property, etc. *channel* self-interest into promoting others, or instead frustrate self-interest and render the self apathetic? Alternatively, perhaps selfishness and competition, as products of particular socio-economic structures, are to be *replaced* in a classless structure by altruistic drives. But is selfishness (and self interest) a product of social conditioning, or is it innately based? Alternatively, perhaps selfishness and competition are expected to *wither* in an altruistically oriented society, like sex drives in a monastery. But is it realistic to expect selfishness (any more than sex) to just wither away?

In the face of these problems and obscurities, two points should be firmly made: that humans are strongly and innately self-interested, and that communism is incompatible with this fact. We have already found that, according to several leading criteria of innateness, our self-interestedness does, indeed, have an innate basis.⁴⁸ We have also seen the meager success that world religions have had in preaching selfless ethics. While we're willing to sacrifice for others or for society at large (especially to pull together in times of crisis) in general we seem to be firstly and foremostly concerned with our own needs and the needs of those closest to us. For the most part, our wealth doesn't seem to voluntarily flow toward unknown others (as Marx's distribution on the basis of need would require), but instead to those dearest to us. The saintly call to work selflessly for others, even after thousands of years of pricking consciences, remains a very distant aspiration, indeed.

Apparently, human nature is not as malleable and altruistic as communism seems to require. As already noted, human motivations are essentially mammalian: our sociality is based on self-interested cooperations of genuine individuals, just like all mammalian societies. Only insects societies come close to the pervasive levels of altruism required of a truly egalitarian society. But insects are selfless, robotic creatures, while humans have genuine egos. In the end, we appear to be motivated largely by enlightened self-interests, rather than blind self-sacrifice. We tend to seek personal gain more than self-sacrifice, and we resist cultural indoctrination to the contrary. It would seem, then, that just as Marx's dialectical materialism underestimated the role of *ideas* in history, so his political predictions underestimated the role of *instincts* in history (though his views on human nature aren't always clear).

The suggestion is that communism is so unproductive because it pushes against the grain of human nature. It demands selflessness of largely self-interested creatures. In its single-minded pursuit of the equality of the beehive, it stifles the ego, and reduces everyone to wards of a bureaucratic state. This system rewards everyone the same regardless of their effort. In effect, it

penalizes those who contribute most and rewards those who contribute least. It fosters social dependency, and saps economic vitality by stifling incentives to work, invest and compete. In the end, it squanders any society's greatest resource: the talents and aspirations of its citizens.

By contrast, free markets are well founded in our penchant or self-interested cooperations. They excel at tapping into our individual aspirations and talents. The most dynamic and vital societies in history are typically those which have allowed greatest leeway to the individual, economically, culturally and politically. Examples range from Mesopotamia and Greece in the Ancient world, to Great Britain and America in modern times.⁴⁹

These observations about human nature may explain not only why Communist economies have failed, but also why Communist societies are inevitably totalitarian. Liberalism (including democratic approaches to socialism) was never highly regarded by Marx, himself. His *Critique of the Gotha Program* and *Communist Manifesto* treated traditional liberties as a sham for the exploited, alienated proletariat, and proclaimed the need for a dictatorship of the proletariat to usher in the new Communist era. Lenin was the one who actually constructed the one-party state in order to smash bourgeoisie resistance to wholesale Communist restructuring of society.⁵⁰ The Communist party came to control not only the government, but also the economy, education, culture, etc. After ushering in the Communist age where we all worked selflessly for others, the totalitarian government was then supposed to wither away, its aims fulfilled.

Unfortunately, however, totalitarianism became the single most enduring legacy of communism. This is, perhaps, because Lenin saw only institutional resistance to communism (evidenced in the revolutions of 1848, just for example), when it seems that there's also considerable innate resistance to working selflessly for others (as argued above). Only a disciplined governmental apparatus can impose and maintain a state which demands that we dedicate our lives to sacrificing for others and the social good.

The persistence of this governmental elite is also due, no doubt, to the uncompromising radicalism of their doctrines, as well as to the natural tendency of people to hold onto power and privilege once they taste it. Whatever the cause, however, the outcome represents the final, cruel irony for a cadre initially so dedicated to the proposition that we can transcend our selfish ways to work selflessly for the common good. Yet it is perhaps the predictable result of trying to force a way of life upon people which appears to go so much against their grain.⁵¹

Free markets seem to foster free societies, just as communism tends to breed totalitarianism. The combination of free markets with free societies was seen in the ancient world and again in the modern world. This may be because, as suggested above, the spreading of prosperity and economic power throughout society appears to be a condition of the spread of greater political rights in society.

It is often said that despite its shortcomings in the world today, communism is "still a

good idea.” Different interpretations of this claim seem more plausible than others. Let’s begin with the less plausible ones. To begin with, it could be that communism hasn’t really been tried properly yet, and that we must try harder. But given our past long experience with communism, this sounds a lot like asking someone to butt his head against a brick wall continually until it somehow breaks through. The point is that communism has been tried: in over forty nations, and in many different variations, and always with the same dismal outcome.

Alternatively, the claim could be that communism is a good idea however bad the consequences: it’s just plain wrong from some to live better than others. But this claim raises the suspicion that its motivation isn’t a noble ideal, but instead sheer envy. It seems to be saying that no one should live better than another, no matter how many people may suffer as a result.

Another disturbing feature of this second interpretation is its radical divorcing of values from consequences. It seems to go beyond saying, like many deontological theories, that consequences aren’t the only thing that makes actions right or wrong, to saying that such consequences are irrelevant. It’s difficult to reject this radical deontology as wrong: if someone values something, then it has value by this very fact. However, in keeping with the pragmatic approach of this thesis, it can be noted that values rarely arise and sustain themselves in a vacuum, without any regard for their consequences. Generally, our values are responsive to our basic needs. This is why archaic values (e.g., those concerning the role of women) wither as socio-economic circumstances pass them by. In the long run, we tend to evaluate values in large part by how well they contribute to the flourishing of our lives. This isn’t to say that theories of duty must be consequentialist, but just that when we seek moral guidance, we tend to listen to the intimate dialog between our practices and ideals. *We tend to feel that ideals divorced from practicalities are as dangerous as practices divorced from ideals.*

Perhaps a more plausible interpretation of the claim that communism is still a good idea is the one that sees it as a vision of the ideal person and ideal society. This interpretation is basically saying “I like equality.” It treats equality as an aesthetic rather than an ethical or social value. It admits that communism is unachievable and shouldn’t be pursued, but feels it that his vision would be worthwhile if we were somehow better than we really are.

It is hard to argue with a dream. All that might be said here by skeptics is that other dreams might often be more alluring, for example the Christian dream (which Marx was so contemptuous of) or the dream of a benevolent society based on vigorous individualism (with a strong emphasis on self-achievement and self-reliance, but also with strong sense of compassion and charity for others). Nonetheless, there are sincere and intelligent people who hold to this Communist dream, and it certainly deserves respect for this reason. However, Marx himself would probably have rejected this approach especially, given his disdain of utopian socialists.

We’ve been looking at how imagination’s role in society may be constrained by its

biological roots in several areas. Perhaps the single ideal which was focused upon most was that of brotherly love. We saw that communism and Western religions (despite all their varieties and differences) share an altruistic ethics (not to mention other traits, like propheticism, missionary zeal, holy wars, hallowed rituals and priestcrafts). They can be seen as correctives to the alienation, poverty, oppression, fear, and anxiety that all too often haunts urban civilization. To counteract this dispiriting condition, they offer a powerful vision of love, brotherhood and compassion. Their very power to lead stems in large part from sheer force of their visions of selfless love. Yet, ironically, it's the extremity of this corrective vision that also accounts for why there is such a deep disconnect between it and our actual conduct over the ages.

While their call for a selfless, compassionate ethics does arouse and reinforce the altruistic side of our nature, it often seems out of touch with the competitive, suspicious, self-centered part of our nature, which is wary of being taken advantage of by others, and unwilling to take from loved ones to give to unknown others (who may all too often be capable of taking care of themselves if so motivated). There is, arguably, a genuine tension in our society, as in most mammalian societies, between self-interests and social interests. Our sociality is, accordingly, based both on self-interested cooperations and personal loyalties. The latter is altruistic, but not blindly so: we are willing to sacrifice for others, but this willingness most often tends to be proportional to the degree to which these others are close to us.

But as well as these similarities between communism and Western religions, there are profound differences which we've noted. Communism is atheistic, materialistic and essentially irreligious. Unlike the great world religions, communism leaves the spirit cold. It doesn't speak to the deep spiritual needs in humans for a salvation that transcends the terror, death and suffering that plague this world, and which offers an eternal home for the lost, lonely, anguished soul. Religion can bring more exalted, spiritual dimensions and deeper emotions to ethics than those found in a purely secular, humanistic ethics like communism's. This may be another reason (besides the economic and political ones noted above) why Christianity has flourished over the millennia, while communism withered after only decades.

Further Constraints on Visionaries

It is useful to recall from the last chapter another critique of visionaries that faults them for misunderstanding not just human nature but also human institutions. Though this criticism deals more with cultural rather than biological factors, it's still useful to recall it here because it reminds us of further, largely cultural restraints on imagination's role (in addition to the purely biological restraints just mentioned), and thus aids us in keeping a cumulative, ongoing account

of the limitations on imagination's social role.

The classic statement of how imagination is constrained by both instincts and institutions dates back to Edmund Burke. Burke was a British philosopher and politician of the eighteenth century who reacted against the excesses of the French Revolution. This revolution came to resemble under Robespierre (who was a fanatical disciple of Rousseau) aspects of the Communist revolutions of the twentieth century.

Burke contrasted the French revolution unfavorably with the Glorious Revolution in Britain and the American Revolution, because the former was so wholesale and anti-historical, and potentially totalitarian. The latter, on the other hand, set about to reform rather than to destroy institutions. Institutions were important to Burke because they embody the wisdom of the ages.⁵² They serve as the restraining dikes of our anarchic emotions. When we tear them down wholesale radical and emotional Robespierres rush in with their reigns of terror. Burke thus felt that society should evolve gradually and organically, by respecting the traditions it seeks to reform, rather than by tearing them down and starting afresh with bold plans for a new society.

The excesses of the French Revolution badly tarnished the Enlightenment ideal of humans as a good and rational beings capable of perfecting their societies. But the counter-revolution intellectually fathered by Burke and others, and politically instituted at the Congress of Vienna after Napoleon's demise, only tempered the revolutionary ideals of liberty, equality and brotherhood. As already suggested, these ideals were irreversible given the social economic developments of the era. The only question was how to reconcile them. In this sense the ideological war between communism and capitalism in the twentieth century was a battle over how best to reconcile liberty and equality.

It was within this latter historical context of the recent battle between capitalism and communism that thinkers like F.A. Hayek and M. Oakeshott reinvoked the Burkean skepticism at over-reliance on imagination in politics at the expense of respect for custom. They stressed that planning of the type envisioned by socialists and other utopians requires virtual omniscience, which is simply unattainable. They argued that society is complex, intricately adjusted system maintained by forces we can't fully comprehend and can't hope to replace. Our institutions were accumulated gradually from the actions of countless generations who knew which way to put their feet, but had little inkling of their overall destination (e.g., those who first issued money as a medium of exchange had little idea of its profound ramifications for future economies). These customs embody far more wisdom than any utopian planner could hope to possess. Tinkering with them is like tinkering with the innards of a clock: it's much more likely to do harm than good.

It is our traditions that generally have the last word in the ongoing dialog of our innovations and traditions, for in the end all innovations must be assimilated. Given our inability

to comprehend the intricate dynamics of the institutions in which we play such a fleeting part, our innovations are usually of only limited long-term utility, and often are only assimilated partially, and then often obliquely or even contrarily to their original aims. They become building blocks in an overall process whose ultimate design they can only partly fathom and affect. This overall design is partly determined by the system requirements of their societies, as well as by the innate structure of the human motivational systems.

What Hayek and others find most frightening about rationalists like Marx is their utter conviction that reason gives us true knowledge of how to live. This dogmatism is “the road to serfdom.” It leads straight to rigid, closed, intolerant societies (compare the argument above about why Marxist societies are inevitably repressive).

One lesson they draw is that change and experimentation should be piecemeal and careful, rather than wholesale and radical. Compare the way responsible physicians recognize the limitations of their knowledge and are conservative in their treatments to minimize unforeseen complications, while Frankensteins throw caution to the wind and produce monsters. So they don’t deny that history is a dialog of customs and ideals, of new explorations and old tradition. But their model of change is evolutionary rather than revolutionary, like Britain’s bloodless evolution towards democracy, rather than like the terrifying excesses of the French and Russian revolutions.

Another lesson they draw is that, given our ignorance about society’s mechanisms, liberty and dissent are healthy and necessary, rather than misguided and heretical. Freedom is seen here in terms of liberty and spontaneity, rather than single-minded pursuit of the dictates of reason that rationalists construe as freedom. Overall, then, their emphasis is on a *dynamic and open society* which experiments and explores, but at the same time *respects its customs* as embodying the silent wisdom of the ages, and which shows intellectual responsibility by recognizing the limitations as well as the powers of imagination, and by eschewing radicalism and zealotry.

Modern people live in the most dynamic and progressive societies in human history. It is for this very reason that some caution is needed. The point is that we must be wary of hurtling into the unknown in the name of untested ideas. Intelligent reform involves understanding what we are reforming. This means experimentally probing society as we reform it. It means tinkering with society rather than radically restructuring society wholesale on the basis of plans dreamt up by utopian dreamers. In a similar spirit, Boris Yeltsin (who ended communist rule in Russia) lamented that communism was tried wholesale on a vast scale at the outset, rather than having been tried more experimentally at first on a much smaller scale. This perhaps suggests a potential danger for the united states in America and Europe, where there is a growing tendency away from *local experimentation* by individual states, and toward large-scale solutions imposed on all states by *central bureaucracies*. United nations are a good idea, but powerful, monolithic

bureaucracies with rigid five-year plans for hundreds of millions of people are dangerous.

The lessons these thinkers have drawn are serious attempts to learn from the history of radicalism in politics. These are lessons that take seriously the true dilemma that we face: without imagination we petrify, but when we employ imagination too zealously it can backfire into our faces. This amounts to a call to be imaginative, but to recognize the *roots and limitations* of imagination. It offers an analysis of what are healthy operations, and what are pathological imbalances in the creative synergy of imagination, institutions and instincts.

Yet it must be admitted that, in the end, there are no definitive answers to how to reconcile imagination, institutions and instincts, because this is ultimately a subjective, normative matter. All that can be said is that the lessons just noted align well with the *pragmatic* approach taken throughout this thesis. The basic point is that ideals, customs and instincts are all important guides in human life – provided they work together.

This isn't a *conventionalist* ethics which equates duty with what's customary. Nor is it a *naturalistic* ethics which ultimately actually defines "good" and "right" in terms of basic human needs. The view is simply that ideals shouldn't be divorced from customs and needs, as some radical deontologists might suggest. Ideals, customs and needs should work together. Ideals derive their power to lead over the long term from their ability to satisfy our basic needs by successfully arranging our social institutions.

Zealots won't be swayed in the least by any of this. There are Marxists, for example, who would still steadfastly claim that their ideals are well worth pursuing, that we haven't tried hard enough, or that we should be willing to sacrifice more. All that can be replied to such calls is that they ring hollow now just because Marxism has been so persistently tried and has so systematically and disasterously failed to meet our basic needs in the past.

Cultural Constraints on Instincts

Now that we've examined how instincts constrain cultural development, let's examine the contrary: *how culture has constrained (domesticated) our instincts on the road to civilization*. By the end of this discussion, then, we'll have looked at most of the gives and takes involved in this overall synergy, from the growing independence of imagination and culture from their biological roots, to the persisting pull our biology still exercises over culture and imagination, and finally, to the pull culture and imagination exercise over our biology.

We'll begin by returning to the *biological stage* of our evolution, when the instinctual basis of our mentality and sociality was being shaped. We'll then examine the *dangers* that emerged from this biological heritage as civilization approached. Finally, we'll examine how

more disciplined, rational forms of our mentality and sociality emerged to deal with these dangers, by *harnessing* our instincts into more domesticated forms.⁵³

Let's begin our analysis of how culture and imagination have acted back on their biological roots, then, by returning to the biological stage of our evolution, when the instinctual basis of our sociality and culture was being shaped. To begin with, we should note the stark contrast between lower vertebrates, with their low degrees of blood relatedness, altruism and sociality, and the teeming, robotic colonies of insects, with their closely related, blindly altruistic members. Higher vertebrates, especially mammals, regained high degrees of sociality in several ways. Dominance hierarchies and ritual displays apparently helped to inhibit aggression, and altruistic personal bonds emerged to counterbalance aggression.⁵⁴ Also, increasing intelligence yielded self-interested cooperations between individuals. The result in higher mammals is a sociality based on *discriminating personal relationships within cliques and families which are imbued with vital mixtures of love, hate, selfishness and cooperation*. These trends culminated in primates, which exhibit highly manipulative intelligence, complex social strategies, facile cultures, and prolonged, complex socialization.⁵⁵

Adaptation of this primate heritage to the ecological niche of a bipedal, tool-using social carnivore may have helped produce in hominids a social order based on cooperative hunting and food sharing, sexual pair-bonding and closely knit families, and prolonged socialization and deliberate instruction.⁵⁶ This extended the primate emphasis on manipulative intelligence, complex social strategies and facile cultures. But as social hunters, we seem to have moved away from the propensity in many mammalian groups for the physically dominant male to take all, toward more emphasis on social skills like cooperation, articulation and self-control. All this helped develop more potent languages and cultures, more deliberate mentalities, and more resourceful behavior.⁵⁷ With these more powerful mentalities and cultures, and our increasing self-mastery we were starting in earnest down the road to civilization.

However, this path to increasing sociality was fraught from the outset with hazards. In addition to developing cognitive and social skills we also altered the old mammalian mentality on a more emotional level. But the ways we changed the chemistry of our love, hate and selfishness contained potential dangers.⁵⁸ Our language and intellect were bonuses, but they also made us cunning masters of exploiting others. The helplessness of our children enhanced our love, both through closer bonds between parents and child, and between man and woman. But this also introduced potentials for sexual jealousies. As in other social mammals, aggression remained intimately tied to love (defense of friends and loved ones strengthens personal bonds). But aggressive communal defense became dangerously well developed in humans due to our strong social organization, calculating intelligences and deadly weapons.⁵⁹

To further exacerbate all this, we were becoming extraordinarily sensitive emotionally,

due to our high intelligence, advanced sociality and social perceptiveness.⁶⁰ Our developing sociality and mentality thus already seemed, even in the Paleolithic, to be putting various strains upon the natural balance of instincts we'd inherited from our mammalian ancestors.⁶¹

It was our cultural motor as a whole, both our *intelligences* and our social *customs*, that enabled to deal with such challenges. From the outset our intelligence and sociality were mutually reinforcing. The growing demands of our sociality boosted brain growth, sharpened intellectual and verbal skills, and produced individuals with more deliberate control over both their own selves and their cooperations with others. Our intelligence thus grew in part to aid us in managing our emotions by ordering their priorities, reconciling their conflicts and postponing their gratifications. So, as part of our evolving social mentality, an intimate dialog was developing between our growing intelligence and rich heritage of social instincts. In this dialog our intellect was dependent on these instincts for its motive power (for purely cognitive operations lack inherent directions of their own) even as it was striving to guide them in more enlightened and constructive directions, and as it was steadily honing its own powers in the process.⁶²

As just mentioned, social customs were also developed to curb potentially dangerous behavior (though they may often have been elaborations of preexisting, innately based checks). Pervasive social controls developed for aggression, sexuality and selfishness, which defined their appropriate objects and means of gratification in elaborate ways. Widespread taboos developed on bigamy, homosexuality, endogamy, incest, and public displays of sexuality.⁶³ Societies also frowned on pure self-gratification and unbridled selfishness, and seemed to use a sense of fairness and "moral rage" to curb exploitation.⁶⁴ Checks were developed on inter-clan aggression, including strict customs to defuse hostilities (e.g., singing duels and ritualized combats), elaborate manners to lubricate awkward social interactions, and social fissions to avoid feuding and overcrowding.⁶⁵

The next stage in the domestication of humans came with the agricultural revolution and the spiraling socio-economic transformations producing urban civilization. Only in humans and in robotic insect colonies did such intense sociality emerge, complete with full-time divisions of labor, specialists that don't gather food, sophisticated information sharing and communal means of defense.⁶⁶ Such "ultra-sociality" in insects is based on the selfless, blindly altruistic behavior of closely related members. But with our mammalian social heritage, we had comparatively limited kin networks and altruisms, and comparatively pronounced individual conflicts and selfishness. How were these factors, which keep other mammalian societies comparatively small and loose, overcome on the road to human ultra-sociality?

Our answer wasn't to extend altruism in the direction of insect sociality, where altruism overrides intra-colony competitions, and where colony members eagerly sacrifice their very lives

for nestmates. (Our allegiances are often exceedingly fickle and self-interested, even our charity toward fellow men is quite niggardly⁶⁷). Our civilized mentality is, instead, basically *a direct extension of the social mentality of higher mammals*. In this arduous process, we harnessed our selfishness and aggressiveness, turning them from obstacles into instruments of higher sociality. Narrow-minded selfishness inhibits cooperation with others. But with our intelligence, language and technology we constructed vast economic systems based on mutual benefits to all.⁶⁸ We left behind the old kinship societies based on the sharing ethic and moved into urban societies based on self-interested cooperations between comparative strangers. Similarly, we harnessed aggression (which normally prevents high population density) by institutionalizing it into warfare to build empires.⁶⁹ We also harnessed our aggression by channeling it into cultural achievements, where we display great enthusiasm in attacking problems, battling opposing points of view, struggling for social esteem, etc.

But there's no avoiding the fact that this harnessing of aggression and selfishness was a precarious pathway to higher sociality. It insured that these societies would always have strife and tension at their very hearts. This situation was exacerbated as social structures hypertrophied into ever more gigantic forms. These rapid social developments put great stress upon our natural balance of instincts, creating dangerous combinations of crowding, weaponry, greed, rivalry, territoriality, ideology, patriotism, etc.⁷⁰

Balancing Social Controls and Intelligence

Civilizations apparently responded to these challenges much like earlier humans did to similar, though lesser challenges, namely, with both strict social controls and our intelligences. But different civilizations dealt with the challenge in different ways. That is, *civilizations vacillated over the proper balance between social controls and intelligence* in dealing with these potentially dangerous instincts.

The views on this matter in Western political thought are quite familiar. For example, Hobbes' *Leviathan*, which was written in a time of bloody civil war, emphasized the aggressive, egoistic nature of humans. Without an absolute sovereign to maintain order, we live in an anarchic "war of all against all," where life is "solitary, poor, nasty, brutish and short." Similar views and motives can be found in Plato, two millennia earlier. Locke depicted humans in more optimistic terms in his *Two Treatises on Civil Government*, which were written at the time of the bloodless "Glorious Revolution." He argued not for Hobbes' absolute sovereign, but for an enlightened constitutional monarchy which respects individual liberties. Again, similar views can be found in Periclean Athens of the fifth century B.C. Rousseau, the father of Romanticism,

agreed with Locke (and Voltaire and many others) on the goodness and perfectibility of humans. But, unlike Locke, he saw civilization as corrupting us. “Man is born free and everywhere he is in chains.” Man has traded his originally idyllic, harmonious and happy lives for a civilized life of private property, industry, inequality, alienation and conflict.

These three authors are representative of timeless approaches to civilization: the *authoritarian* view that human nature is ferocious and needs disciplining by strict government, the *liberal* view that human nature is benevolent and simply needs educating by enlightened government, and the *anarchic* view that human nature is benevolent but perverted by government and civilization as a whole. (These three theories have interesting correlations, incidentally, with the three theories of knowledge in rationalism, empiricism and romanticism.)

Indian thought was less concerned with such wordly matters, but in China this full range of oppositions are found between the Confucianists, Legalists and Taoists. Confucius, for instance, advocated good government that rules by virtuous example rather than by punishment and force (“Guide the people by law, keep them in line by punishment, and they may shun crime, but they will be shameless. Guide them by morality, keep them in line by courtesy, and they will learn shame and grow good”).

In the same spirit, Mencius held to the cardinal principle that human nature is inherently good (“Charity, righteousness, propriety and moral conscience are not something that is drilled into us; we have got them originally within us.”). His strong idealism is exemplified by the following passage, where he takes a one-sided view of children and turns a blind eye to how willful and defiant they can sometimes be:

Mencius said, “The ability possessed by men without their having acquired it by learning is innate ability, and the knowledge possessed by them without deliberation is innate knowledge. Children all know to respect their elder brothers. To have filial affection for parents is humanity, and to respect elders is righteousness. These feelings are universal in the world, that is all.”⁷¹

In keeping with this optimistic view of human nature, it was felt that proper behavior came not from discipline but from enlightenment, including enlightenment about ourselves. Thus, Mencius said, “Those who follow that part of themselves which is great are great men; those who follow that part which is little are little men.”

But Hsun Tsu, who (like Hobbes) lived in an war-ravaged era, countered Mencius’s optimistic view of human nature as follows:

The sage-kings of antiquity, knowing that the nature of man is evil, and that it is unbalanced, off the track, incorrect, rebellious, disorderly, and undisciplined,

created the rules of propriety and righteousness and instituted laws and systems in order to correct man's feelings, transform them, and direct them so that they all may become disciplined and conform with the Way.⁷²

His pupil Han Fei rejected Confucian idealism for a tough-minded realism which emphasized power and discipline, rather than enlightenment.

The severe household has no fierce slaves, but it is the affectionate mother who has spoiled sons. From this I know that awe-inspiring power can prohibit violence and that virtue and kindness are insufficient to end disorder.⁷³

Both Mencius and Hsun Tsu might be criticized for overlooking the contrary side of our nature, and asserting that we are by nature either basically loving or basically selfish. These criticisms are also relevant to assumptions that the domestication of humans on the road to civilization is purely a matter of either education or disciplining.

The Taoists were romantic in their outlook, believing in virtues like simplicity, spontaneity, tranquility and non-interference. Water is one of Lao Tzu's most vivid symbols for the Tao: "Water is yielding, it takes the shape of whatever container it fills, it seeps through invisible crevices and its mirrorlike surface reflects all nature. Great rivers and seas gain their kingdomship over the lesser streams by being lower so that the streams flow into them." Government should be simple and *laissez-faire*, and life should be innocent, like the golden age before civilization.

The more taboos and prohibitions there are in the world, the poorer the people will be. The more sharp weapons the people have, the more troubled the state will be. The more cunning and skill man possesses, the more vicious things will appear. The more laws and orders are made prominent, the more thieves and robbers there will be. Therefore, the sage says: I take no action and the people of themselves are transformed. I love tranquility and the people of themselves become correct. I engage in no activity and the people of themselves become prosperous. I have no desires and the people of themselves become simple.⁷⁴

In reconciling these three views (authoritarian, liberal and anarchic), it should be noted that they tend to be polarized reactions to each other in both Western and Eastern history. In this form, they thus tend to make more sense synthesized than opposed. Having said this, it should be noted that civilizations have become progressively more liberal and less authoritarian. But still, there remain valid points on all sides in any healthy society. By way of arguing to these conclusions, let's briefly scrutinize the different positions.

To begin with, both overly idealistic and overly pessimistic views of human nature are simplistic (see, for example, Mencius and Hsun Tsu above). As already suggested in our discussion of the ideals of brotherhood and equality above, humans exhibit a complex mixture of pro-social and self-interested motivations, which such one-sided approaches simply overlook. Human sociality is not based on the insect plan of blindly altruistic cooperations between closely related members, but instead on the mammalian plan of intelligent, discriminating personal relationships between genuine individuals, involving complex mixtures of love, hate, selfishness and cooperation. We are intelligent, self-interested, social mammals. Our self-centeredness is tempered by some altruism, but not blind altruism: we are willing to sacrifice for others, but this willingness tends generally to be proportional to the degree to which these others are close to us.

We have also seen how this natural emotional balance was challenged by the emergence of civilization, which brought together hazardous combinations of cunning, emotional sensitivity, crowding, weaponry, territoriality, greed, rivalry, ideology, patriotism, etc. It is especially when these forces render the social fabric (as is all too often) that conservatives like Hobbes and the Legalists stress the need for strict social controls over instincts in order to tame them. This applies also to Plato, who also lived in a time of civil war, decline and pessimism. *The Republic* can be seen as an attempt to save Greek civilization by synthesizing Athenian enlightenment with the Spartan discipline into the form of an authoritarian, yet enlightened philosopher king who rules with absolute power and discipline over the anarchic, passionate elements within society.⁷⁵

In more modern times, something like this view has been argued by Freud. He claims in *Civilization and Its Discontents* and elsewhere that while self-interests predominate over group interests in individual development, social evolution reverses this, placing the individual below the requirements of social unity. Thus an irredeemable conflict arises between self-centered instincts and civilization, and between the id and superego. Our common interests and love bonds aren't enough to counter hatred and hostility; they must be socially curbed through guilt, shame, religion and law (though, as we've seen, he thought we were outgrowing religion).

This rather stern view of how society disciplines instincts needs to be balanced with the more sensitive, liberal view noted above. This view recognizes the natural harmony of our instincts, the natural sociability of humans, and how our intelligence educates and enlightens our instincts so that we can live together in crowded civilizations. Mary Midgley does just this in her provocative book, *Beast and Man*. She emphasizes the affinity of man and beast, the continuity of reason and instinct, and the role of reason in providing instinct with enlightened guidance. Reason and conscience emerged through conflict from the same primal energies they seek to rein. Reason educates our emotions, reconciles their conflicts, integrates our personality, and thus completes the natural balance within our nature.

Thus, reason isn't a coldly detached lion tamer imposing alien rules on instinct from without. It is instead a matter of self-awareness and self-control. Instinct divorced from reason may lead to anarchy, but reason divorced from instinct can be cold, ruthless, even monstrous and inhumane. Reason needs the humane guidance of instinct, just as instinct needs the rational guidance of reason. In pointing out this underlying unity of the controller and the controlled, Midgley adds a very useful counterbalance to positions like Freud's.⁷⁶

However, Midgley goes beyond merely tempering positions like Freud's to attacking their basic contention that reason and instinct are antagonistic. The rules of reason do demand obedience, she says, but just because they are the rules of our own inner nature. It's a matter of our own nature becoming aware of itself and recognizing where its proper conduct lies, not of the imposition of alien rules of conduct by a "colonial governor." The form of our conduct comes from within; it is not imposed from without.⁷⁷

Such strong denials of antagonism between reason and instinct may seem just as implausible as Freud's equally strong assertions of their profound and irredeemable conflict. The two positions may make more sense synthesized than opposed. Reason does, indeed, seem to guide us through enlightened awareness of our own inner nature, and the natural balances of our instincts. Nonetheless, our rationalities emerged in part from the increasing demands of our intensifying systems of sociality. Social evolution does seem to have its own systemic requirements and constraints which it actually imposes upon individuals, at times against their momentary wishes.⁷⁸ Few would argue, for instance, that traffic flow on a modern highway can simply be a matter of the enlightened, free choice of drivers. Rigorous enforcement would seem as necessary here as strenuous education. The same principle seems to apply to civilized life as a whole.

To begin with, civilization emerged as much through the forcible imposition of strong central authority, as it did through general and enlightened acceptance of the mutual benefits it provided. All civilizations then retained this need for efficient, centralized authority. State indoctrination and people's acceptance of the *status quo* weren't always enough to insure social order in these crowded, pressure-ridden societies packed with conflicting interests and rival groups, each with their different ambitions and grievances. All states thus maintained law courts and monopolies on the use of coercive force in order to enforce the order of the realm and prevent civil war, plundering, feuding, etc. We see a similar trend in the economic sphere. Work became more regimented and disciplined with urbanization. The arrival of agriculture had replaced our comparatively easy hunting life with grueling routines and enduring responsibilities. The rise of professions brought long hours of toil by the clock and arduous apprenticeships.⁷⁹

We find this disciplined control not just within society, but also within individuals' minds. The sheer densities of urban life demand mentalities capable of not only diplomacy,

compromise and tolerance, but also strict self-control (note how the crowded and insular Japanese and British have learned the value of politeness and manners). By comparison, a city full of canines would probably be a snarling, xenophobic mob. Our extreme emotional sensitivity requires that urban dwellers cocoon themselves from strong sources of emotion through elaborate codes and rituals to avoid shame, disgust, anger and violence. We train ourselves to suppress flagrant emotional outbursts. "The old primate frankness would not work here, as Midgley says." Urban peoples must act publicly more with their head than with their heart. Our interactions often require that we treat each other with formality and reserve, and more as occupants of roles rather than as individuals. Maintaining competitiveness of urban life generates grinding tensions, frustrations and hostilities that we must control. Conflicting roles and responsibilities often tear at us in different directions, creating frustrations, guilt and neuroses.⁸⁰

The individual mind is the focus for these forces and tensions. Within the individual's mind, then, the controller and the controlled are, indeed, one, as Midgley notes. Yet this is the *dialectical unity* of sometimes *opposing* forces. In reconciling the inevitable conflicts, the individual struggles to balance both the requirements of social discipline and his own inner feelings. Neglecting one or the other risks degenerating into the extremes of repressiveness and loss of individual spontaneity on the one hand, or anarchy and permissive self-indulgence on the other.

Though there were definite hazards and tensions involved in moving into civilization, still, from the outset of human evolution, both our mentality and sociality had emphasized self-control, cooperation and intelligence, and were thus equipped to meet these challenges. Our growing mental powers enabled us to deliberately order our priorities, reconcile our conflicts and control our emotions. Our growing social institutions placed strict controls on our aggression, selfishness and sexuality. Thus, through a combination of both enlightened guidance and disciplined control, we harnessed these potential obstacles to higher sociality and channeled them into the construction of urban economies, political empires and literate cultures. But there's no avoiding the fact that this harnessing of aggression and selfishness was a precarious pathway: it insured that these societies would always have strife and tension at their very hearts.

As noted above, our perspective on the need to control human nature varies with social eras and climates. For example, Plato saw in the Athens of his day social and moral disintegration and decay, so he proposed an authoritarian solution. By contrast, William Blake lived in a stable society, yet one marked by a strong moral tyranny, so he proposed an emancipation of primal spirit. Still, any healthy civilization generally requires a balance of enlightened individualism and social discipline, rather than either alone.

More specifically, it can be said that in balancing social discipline and individualism in modern societies, we are guided by the conviction that individualism and liberty are fountain-

heads of creativity, progress and prosperity. This is why we first and foremost try to solve social problems by educating individuals, by engaging them in free and rational discussion, and by enlisting their voluntary cooperation.

Yet we are often faced in liberal modern society with the limitations of this approach, too. Without social discipline and authority, the fiber of our liberal democracies can oftentimes quickly unravel. The rampant crime, drugs, teen-age pregnancy, and VD that infect the inner cities of post-1960s America illustrate this point. These problems aren't due to unemployment in these cities, for they often exist where unemployment is low. Instead, they're due to the drug culture that has arisen there, even in areas of high employment. Members of these communities are in growing numbers arguing that individuals' rights must be balanced with responsibilities to their communities. They advocate, for example, anti-loitering laws to break up drug-pushing activity, road blocks to keep drug buyers from entering these communities in search for drug pushers, and mandatory service for youths in community service programs or the military.

These "*communitarians*" emphasize (like Plato and Aristotle did) how the good life requires a good and virtuous community. In response to *libertarians* who claim that their measures infringe on personal liberties, they say that liberties must go hand-in-hand with responsibilities. Liberties mean little to a community terrorized by drug gangs and nightly shoot-outs in their streets.⁸¹ Here we have urban communities seeking to spread a sense of social responsibility and self-discipline within their own streets.

The *anarchic* view also requires scrutiny. It is exemplified not only by Rousseau and Lao Tzu, but also Blake's view that we must cast off the "mind-forg'd manacles" of morality, religion and law. We must abandon crowded, repressive cities and return to nature, where self-expression and individuality flourish unhindered. There is much of enduring appeal in these claims to those familiar with urban life. Even to those who don't follow this advice to abandon civilization, it serves as a timely reminder that our communities needn't be oppressive and regimented as they have often become.

But the anarchic view can also be criticized. It rejects the synthesis of liberal and authoritarian views directly above (which emphasizes the need for both social discipline and individual freedom in civilization) as in fact stifling our individuality and self-expression. This rejection raises several important issues: whether such anarchism can avoid chaos (witness the reign of terror in the French Revolution), whether the purported costs of civilization are outweighed by their benefits,⁸² and whether civilization in fact stifles individuality and self-expression. The first question speaks for itself. The second will be addressed later in this chapter. We'll address the third now. But it can be said here and now that in each case there are real grounds for skepticism about the anarchist's claims.

It is doubtful that returning to nature would in fact free humans to higher states of self-

expression and individuality. In fact, individuality and freedom are largely products of civilization. As we've seen, they arose with the rich diversity of opinions, the cosmopolitan perspectives, and the greater spheres of personal freedom in urban life. Traditional life is actually quite dogmatic and conformist.

It seems at least questionable whether these social and cultural artifacts of civilization could survive for long with the breakdown of civilization into the essentially Neolithic social, economic, political and legal systems which seem to characterize the pastoral state of nature that romantics like Blake and Lao Tzu so idolize. Romantics are so preoccupied with our natural and instinctual characters that they're often blinded to how civilization channels them into our most creative and individualistic achievements.

This general point about the role of civilization in the flourishing of creativity and individualism can be made against existentialists like Sartre, too. Sartre often seems to make human freedom a hostage to indeterminism by linking freedom to our possession as beings-in-themselves of consciousness, which he sees as "a hole at the heart of Being."⁸³ This means we are absolutely free to make our own future. Social and biological constraints on our action are strictly incompatible with our freedom.

Alternatively, it might be argued that freedom and necessity aren't opposed. Instead social and biological factors are what produce human freedom, through the evolution of human imagination, culture and autonomy. So social and biological necessities don't preclude freedom, but instead make it possible: they provide us with frameworks of intelligible alternatives and rational choices. In this way there is a dialog of freedom and necessity, rather than a mutual exclusion. We will return to this shortly.

The Development of Universal Ethics

Besides this problem of the most fruitful balance of social controls and intelligence, another problem facing civilization in the domesticating of our instincts is the problem of *balancing old allegiances to family and tribe with the necessity of new allegiances to much larger groups*. This is partly a practical political matter, which is dealt with, for example, by establishing national religions and governments, as we've seen above. But it's also an ethical problem, which all civilizations have to intellectually wrestle with ultimately.

In its ethical form, this problem is one of reclaiming the old *tribal ethic of brotherhood*, but expanding its scope so that it embraces all men in a *universal ethics*. This is an extension of the old problem evident in all higher vertebrate societies of reconciling the needs of the self and the needs of others. But the old formulas, as embodied in our biological and cultural heritages,

are no longer fully adequate in confronting this problem. Bold imagination is required to overcome our natural insularity and self-absorption in order to create these truly universal ethics.⁸⁴ There were, in fact numerous factors standing in the way of such bold changes, as we'll now see.

To begin with, traditional society is, as we've seen, simple, isolated and self-absorbed, as well as static and comparatively closed-minded. Early civilizations only gradually and partially replaced this tribal mentality with more universal perspectives. Despite their impressive practical achievements, these early civilizations never surpassed the level of conventional morality, which is highly intolerant of nonconformity. They lacked the deep-felt senses of universal moral responsibility towards all people of the post-conventional ethics which appeared in mature civilizations, beginning in the first millennium B.C.

One part of the reason for this *lagging moral development* can, again, be seen from looking to *social* factors. At the very outset of civilization, moral well being was probably overshadowed by preoccupations with subsistence needs and material well-being. But subsistence became less of a concern as civilization matured economically. Yet kings and powerful priesthoods still managed for some time to keep the masses in poverty and ignorance. They played on their fears of the capricious gods, the wrath of the divine kings, and the dark secrets of magic ritual.

The strength of these established powers is evident in the apparent fate of Urakagina of Lagash who tried to reform this Mesopotamian city in 2630 B.C. to help the commoner: forces of reaction soon crushed him and his rebellion.⁸⁵ A similar sort of fate awaited Akhenaton's religious reforms in New Kingdom Egypt. They presented ideas that were ahead of their time; or rather, they put forth revolutionary ideas at a time in history when such ideas were still incapable of modifying established power structures. Until changing economic forces and balances of powers between classes could provide more fertile ground for such ideas, they remained mere appendages of staunchly conservative religions which bewitched men by their magic, mystery and authority, and strongly resisted innovation.

But the lack of a sense of universal moral responsibility at this time wasn't due just to these social factors such as the power, dogmatism and ritualism of the entrenched priestly classes (factors which functionalists tend to stress⁸⁶). The *psychological* dynamics of this age was another factor. Here, a mutual reinforcement of intellectual, moral and emotional factors also inhibited religion's moral development relative to society's institutional development. For example, the concreteness and egocentricism of intellects at this time constrained moral development.⁸⁷ Conversely, the strongly conforming pressures of conventional moralities discouraged the intellectual development of critical thought, setting up a vicious cycle here. Also moral development met powerful emotional obstacles like anxiety, intolerance and selfishness.⁸⁸

For such reasons, it is hardly surprising that in our history, our mastery of nature has exceeded our mastery of our own potentials for harmonious social life.

Subsequent moral development in civilization was stimulated by the growing urbanization, literacy, knowledge, prosperity, cosmopolitanism and sophistication of the first millennium B.C. The challenging frontiers of urban life gradually helped to produce bolder societies with broader horizons and greater room for more rational, individualistic points of view. These factors advanced the conditions conducive to postconventional morality, viz., the growth of private spheres disengaged from society, the proliferation of alternative viewpoints, the appearance of large-scale corruption and inequality, and the growth of competing traditions of literature seeking rational principles of proper conduct (such as the golden rule, the doctrine of the mean, utility, etc.).

These postconventional moralities which first emerged in the first millennium B.C. were characterized by a striving for truly *universal* principles, as well as the related features of *tolerance* of nonconformity, and more reflective and *integrated* personalities. Let's look at these developments in the order listed.

To begin with, morality was no longer seen in insular, egocentric terms of responsibility to one's own group, but in terms of responsibility to these rational principles of *universal* application.⁸⁹ This key development of a universal moral outlook wasn't simply an intellectual one. It came from a deeply transformed emotional view of others, from an expanded awareness of the sanctity of all humans (unlike in tribal religions and ethics). It was often tied to powerful religious reorientations of our innermost feelings and deepest beliefs. But, however it came about, it involved an appreciation of other people and other perspectives, as well as a appreciation for principles that can withstand critical scrutiny from all perspectives.

An early example of the new emphasis on universal love and brotherhood can be found in the Hebrew prophets. This began in the eighth century B.C. with calls for greater compassion and equality in Hebrew society, but it soon expanded to a sense of compassion for all men in the second Isaiah, who dates from the time of the Babylonian captivity (cf. Amos 8:4 with Isaiah 49:6). In the end, however, Hebrew religion remained nationalistic in its outlook (and for much the same reasons that Zoroasterism did among what are today called the Parsis). It remained for Christianity to create a truly universal religion that embraced all nations. Christ's message was that he was the son of the almighty God of love, and that he was sent by God to save man by teaching him to repent from sinful love of self and money, and to instead "love the Lord your God with all your heart" and "love your neighbor as yourself" (Mt.22:37-40). The universalism of this ethics of selfless love is particularly evident in the latter of these two commandments, which is in fact one of his formulations of the Golden Rule (cf. Mt.5, Lk.11, Jn.8).

In China the best example of the new emphasis on universal love and brotherhood was

Moism, which dominated Chinese thought together with its main rival, Confucianism, from the fifth to third centuries B.C. Moism's ideal was of a world living as a community in harmony, love and brotherhood, all in keeping with the will of Heaven. Mo Tzu assailed all crime, exploitation and oppression as being rooted in selfishness (lack of mutual love). Yet his appeals for universal love lacked the exalted moral and spiritual tone of, for example, those of the Hebrew prophets and Jesus Christ. Mo Tzu says that it is the will of Heaven that we be righteous and loving, but in the end (ch.15) he tends to back this up by reference to the practical consequences of such conduct.

Confucius, by contrast, emphasized love with distinctions, which makes room for his vital principle of filial piety, which he sees as crucial to social harmony. But he, nonetheless, puts great stress on *jen*, i.e., being humane and caring (Analects 4:15). In an often lawless and war-torn era where life was cheap, Confucius taught respect for others: "don't do to others what you would not wish done to yourself" (Analects 12:2).

In India, we find an ethics of selfless love in Buddhism (much like in Christianity and Moism). Instead of pursuing self-centered desires, Buddhist ethics of the *Dhammapada* urge compassion, justice and restraint towards others ("conquest of self is indeed better than the conquest of other persons"). But the compassion the Buddha spoke of isn't to be identified with personal love, which (as a desire of the self) can only bring suffering. Rather, this compassion is a love so comprehensive that it embraced every living being. This love was to be kept on a saintly and impersonal level so as to bring no sorrow. (Compare the Chinese debate, above, between Moists and Confucianists over whether love should be universal or differential.) The same spirit of universalism is apparent in Jainism, which emerged at the same time Buddhism. Jainism is perhaps most interesting in its extension of this universal compassion to all creatures.

Why did this emphasis on universal love emerge together so suddenly in all these civilizations? A basic need that these new, universal ethics met was the need for a compelling ethics for civilized life that embraced everyone. There was a bit of a moral vacuum in early civilization. Having abandoned the age-old brotherhood ethic of primal society when we moved into cities and states, we had yet to find another ethic capable of captivating the imaginations of all civilized peoples, regardless of their diverse and often conflicting interests.

The leaders of the empires in these earlier civilizations had tried to gain the allegiance of their peoples by consolidating their plethora of gods into pantheons whose monarchs were closely associated with these leaders. This was a step towards the monism of the world religions of the future, but the compelling ethical component was still lacking. These elitist societies were filled with masses of poor people, slaves, aliens and (in India) lower castes who were marginalized. There was a need for an exalted ethic to gain the allegiance of all peoples and pull them together in a greater sense of just, harmonious cooperation.

The new moral leaders of mature civilization thus returned to the age-old sentiments of brotherhood, love and compassion that flourished in the old tribal society. Boldly, they beckoned us to expand the scope of these sentiments beyond the family, tribe or nation, so as to include everyone. In effect, they returned us to the ancient tribal ethic of brotherhood, but then asked us to transcend the insularity of this old tribal ethic and treat everyone as family.

The time was ripe for such a move. We were no longer so absorbed by the struggle for subsistence; we were now searching for the good life, for higher moral and spiritual realization. In this search, we turned to sophisticated, urbane outlooks suitable to this time in which great empires were being constructed, international trade was flourishing, and society was outgrowing the old tribal mentality. We were striving for perspectives of more universal validity, based on rational principles that could hold up to conscious, critical scrutiny.

The new moral leaders thus beckoned us out of our old tribal mentality toward more exalted visions of spiritual salvation and moral perfection based on love and compassion for all. They offered new visions of metaphysical unity and moral perfection. Many of them preached that we all are spiritually united and obligated to one another as spiritual brothers. This wasn't simply an intellectual message. They sought to transform our emotional evaluation of each other and to expand our awareness of the sanctity of all human life. This was part of a profound religious transformation of the human personality, which beckoned us away from the fearful gods and xenophobic societies of our past, toward more positive futures based on love, joy and hope.

Another need that these calls for universal brotherhood met was the need for comfort and security in a turbulent and troubled era. Although the maturing of civilization had brought great material prosperity, it also saw great periods of invasion and conquest (both from barbarians outside civilization's borders, and from ambitious kings within its borders) which led to great turmoil and anxiety.⁹⁰ Furthermore, the great empires which emerged through these conquests were built on the ruins of the older and more intimate tribal societies of the past. With the waning of local, tribal society and the swelling of urban society and vast empires, the old, meaningful bonds between people were weakening. A sense of disorientation and *anomie* was setting in.⁹¹ Belief in spiritual salvation and brotherhood for a community of the reborn helped meet this need for belonging, meaning, security and purpose in the larger scale societies emerging at this time.

As noted above, a second trait of postconventional morality that appeared in mature civilizations was a growing *tolerance* of others' viewpoints. This is partly due to the fact (as we'll later see) that morality now stems from autonomous choices and respect for others. Guilt is now the prime motive for conduct, not social shame. This is because reputation, status, wealth and other such external things now matter less than one's inner ideals.

Toleration of individual viewpoints stems partly from the turn to autonomous individuals, rather than to society at large, in the search for moral authority. This emerging respect for the sanctity of individuals (not just the ruling elite) has been an important feature of mature civilizations and is an outgrowth of the breakdown of tribal society, the growth of the personal sphere, and the spreading prosperity and political awareness of the middle class in these civilizations.

Despite their emphasis on the worth of all people in the eyes of God, and despite emphases on good works and charity, world religions weren't always so tolerant (indeed, they have often been more authoritarian and militantly intolerant than the polytheisms which preceded them). The greatest strides in toleration and individualism came in fact from more secular-minded peoples, like the Greeks. Freedom to them was seen less in terms of spiritual salvation, and more in terms of one's opportunities in this life.

As noted above, the third trait of postconventional morality that appeared in mature civilizations was that conflicting roles and emotions were now confronted and reconciled into more *integrated* and differentiated personalities. This was because (as we've seen) thought was now less concrete and more abstract, and thus better able to reflect upon and discern its own operations.

Reflective individuals began to realize their higher intellectual, moral and spiritual needs, and to develop unified directions for their own lives. This contrasted with earlier cultures, where individuality was submerged and there was less self-expression and self-reflection. Now individuals reflected upon their higher yearnings, their inner conflicts, and their self-identity. They began to consciously shape their identities. They began to grow.

The path of this growth was toward well-balanced fulfillment of individual potentials (as in Aristotle's and Confucius's doctrines of the mean, the Buddha's Middle Way, and the Yogic ethics of the *Bhagavad-gita*). This meant confronting the deep, core conflicts between our civilized and animal natures, our higher and lower needs, our self-fulfillment and social obligation, good and evil, etc. The new religions swept across the civilized world so quickly just because they offered us the balance and fulfillment that our new, reflective minds craved. By putting love, hope and spirituality at the center of our being, the new religions helped to restore the old, natural unity and harmony of our lives, and to check their disintegration from the alienation, poverty, oppression, fear, and anxiety that so often haunted urban life. They helped to foster healthy, well-balanced psyches that were shaped to the more humane, rational forms suitable to mature civilization.

So, a prominent theme of this era was the call to love your fellow man rather than slipping into self-love and greed, a call which can be seen as an effort to reclaim the old ethics of brotherhood which we had left behind with our move into money economies and urban societies.

“Love your neighbor as yourself,” say both the *Old Testament* and *New Testament* (Lev. 19:18, Mt. 22:37-40, Mk. 12:29-31). “Cut out the love of self as you would an autumn lily with the hand,” says the Buddha (the *Dhammapada*, chapter xx). “When all the people in the world love one another, the strong will not overcome the weak, the many will not oppress the few, the rich will not insult the poor,” says Mo Tzu (*The Mo Tzu*, chapter 15). “When the superior man has studied the Way, he loves men,” says Confucius (*Analects*, 17:4, cf 12:22).

In this manner, the individual began to reflect upon his higher needs, his self-identity, and inner conflicts like those between his civilized and animal nature. He began to consciously shape his personality with an eye towards well-balanced fulfillment of his individual potentials and feelings. He began to grow into the more humane, rational forms suitable to mature civilization.

In sum, then, these new ethics, and the religions in which they were so often embedded, swept across the civilized world quickly just because they offered us the balance and fulfillment that reflective minds craved. By putting love, hope and spirituality at the center of our being, the new religions helped to restore the old, natural unity and harmony of our minds and societies, and helped to check their disintegration from the alienation, poverty, oppression, fear, and anxiety that so often haunted urban life. They were able to achieve these things by reorienting and integrating the old psyche into a new, spiritual one.

These religions and ethics thus helped to foster healthy, well-balanced psyches suitable to the humane, rational forms of civilization. They gave us enduring answers to the innermost social and biological conflicts and concerns of the human mind. Their great relevance to human life comes from their inclusion of the whole of the human personality with its various needs into a meaningful system. They offer us a loving brotherhood of all people, an eternal salvation that transcends death, a sense of ultimate belonging and purpose in an otherwise empty and lonely universe, and a solid sense of reassurance in the face of our greatest earthly trials and tribulations.

The Rational Reconstruction of the Psyche

So far we’ve looked at how the domestication of humans involved balancing social controls and intelligence, as well as balancing old allegiances to family and tribe with the necessity of new allegiances to much larger groups. We can end this discussion of our domestication by tying it into the larger theme running throughout this work concerning the *rational reconstruction of humans* through the forging of civilization and reason.

In the previous chapter, we looked at this rational reconstruction primarily from a *sociological* perspective. Now we’ll look more closely at this topic from the more purely

psychological perspective. We'll look at how the social reconstruction of imagination into a rational form (as outlined in the previous chapter) was linked to a psychological reconfiguration of the entire economy of the mind, including motivation and will. Here, our primal animal mind, dominated by emotion and intuition, was domesticated and reconfigured into a rational, civilized form through the emergence of the *rational will*.

In this process, imagination became increasingly rational and autonomous of its roots in intuition and conditioning (as we saw in previous discussions), and the will became increasingly rational and autonomous of its roots in our vying emotions and impulses (as we are about to see). These are two facets of the same process, involving the disciplined, coordinated control of our *emotions* on the one hand, and of our *intuitive thought* processes on the other. The result of this process was a qualitative transformation of the human psyche, a shift from the "savage" to the civilized mentality, with the emergence of new powers for rational deliberation, self-awareness, self-mastery, and free will. In essence, then, this whole process we'll be looking at below represents *the emergence of the rational, autonomous self*. Again, this is the psychological counterpart to our sociological finding above, that civilization produced the rational, autonomous individual.

Now, the nature of the *self* is a longstanding problem in philosophy. Generally speaking, the self is seen as the most enduring and essential aspect of our being. What will be argued below is that: (1) most traditional accounts of the *self* are problematic; (2) the autonomous self may be identified with the *rational will*, given the central and pervasive role of the latter in defining what we are; (3) the autonomy of the rational will is the basis of our *free will*; (4) our *self-identity* is a synthesis of social and biological roots through the enlightened agency of our rational, autonomous will.

So let's begin with how most traditional accounts of the *self* are problematic. Mystics, for example, often wholly reject the reality of time, change, and the independent self. Such tendencies are found in Brahmanist thought in India, Taoist thought in China, Eleatic thought in Greece, as well as in modern philosophers such as Blake, Heidegger, etc., to mention but a few. The grandfather of these ideas is the *Upanisads'* basic intuition that the individual soul (Atman) is in reality merely an aspect of the great world soul (Brahman).

When a person here sleeps . . . he has reached Being, he has gone to his own
Now, when one is sound asleep; composed, serene, and knows no dream – that is
the Self (Atman) That is the immortal, the fearless. That is Brahman.

Mystical traditions have long wrestled with the problem of whether the self is unreal or just parasitic upon true reality. The obvious problem with actually treating the self as unreal is

the fact of our self-awareness, as pointed out by Descartes and Augustine (see below).⁹² In the *Vedanta*, Samkara gives a typical hard-line reply, namely, that the world of individual things and selves is an illusory product of language and ignorance, which try to divide what is in reality one and indivisible. Ramanajuna's reply, later in the *Vedanta*, is simply to ask how ignorance could ever arise from Brahman. Monistic idealism has vacillated in this manner throughout history and across most cultures: it's unwilling to accept the temporal world of individual things as real, yet unable to fully explain it away.

Other rejections of the self are also problematic. The Buddha atomized experience into an impermanent aggregate of dharmas (physical-psychical elements) and found that the self lacks any independent reality over and above such elements.

. . . the word "chariot" is but a mode of expression for axle, wheels . . . placed in a certain relation to each other, but when we come to examine the members one by one, we discover that in the absolute sense there is no chariot . . . in exactly the same way . . . we discover that in the absolute sense there is no living entity there to form a basis for such figments as "I am" . . .⁹³

Similarly, Hume atomized experience into sensory impressions, and could find no persisting impression corresponding to the self.

When I enter most intimately into what I call myself, I always stumble on some particular perception or other . . . I never can catch myself at any time without a perception, and never can observe anything but the perception . . . [we] are nothing but a bundle of collection of different perceptions . . .⁹⁴

One problem with both of these accounts is that they omit what makes experience *mine*. It makes no sense, for example, to wonder whose headache I'm experiencing, as if headaches were items lying in a lost and found awaiting their owners. If I'm aware of a headache, it's by this very fact mine.

There is in fact a unity to our inner experience which these two atomistic approaches overlook. It comes not from looking to the *content* of experience, like the Buddha and Hume did, but from looking to the *form* of experience. As Kant pointed out, we're aware of the inner self by contrast to the outer world of physical objects. Only when there's perception *of* a world of objects, can there be perception *by* a subject: "subject" and "object" are pointless apart from one another.⁹⁵ Experience of a unified, interconnected world⁹⁶ allows experience of an unified, interconnected self. Infants are incapable of either, but as they interact⁹⁷ with the world and become aware of its systematic interconnectedness, they then become aware of themselves as

subjects within this world with their own perspectives upon it.

Yet there were other aspects of the self which Kant didn't cover, one of which is the relationship between the will and the self. The self is an agent, at the core of which is our will. Our wills operate as autonomous controlling centers of our personalities. Unlike beasts, humans don't react impulsively to the strongest stimuli. We are capable of rational thought, of analyzing alternatives and consequences of actions, of planning our lives, and of controlling and postponing our passions in order to achieve these plans.

If the self is defined as our enduring, essential being, then *the self best identified with the rational will*, given the central, pervasive role of the latter in defining our personality. In this capacity, the will is both deliberative and governing: it is what directs the course of goal-oriented thought and action, and it maintains the discipline required to stay this course.⁹⁸

The will arose when animals began to think in deliberate, goal-directed ways, and especially once thought fused with symbolic language and began to systematically reflect upon its own processes and control its own course. The will derives its power to control our personality as a whole from its foresight, which enables it to reconcile our competing instincts and to reorient them in enlightened ways which bring greater levels of fulfillment to all. In this authoritative manner, the will is able to draw its controlling power, as Lorenz noted, from the primal powers it controls, much like power steering.⁹⁹

Thus, the will reflects, utilizes and integrates all parts of our being into a unified whole. But it isn't something over and above our reasoning, values, emotions, memory, etc. It is just those facets of memory, reasoning, etc. which mobilize and organize together for action when decisions are called for (and counter to Hume, these are observable activities). In this manner, they can do more when acting together than when acting separately. The will can thus be seen as an emergent, autonomous level of organization in the evolution of minds.

The evolution of the will represents the culmination of the evolutionary progression toward more *centralized control* of nervous systems. It's evolution is thus akin to the political evolution of centralized governments which transformed anarchic, competing tribes into coordinated, centrally controlled states. Similarly, the emergence of the will transformed the impulsive, anarchic animal mind into the more rational, centrally controlled form we find in the human mind. (And similarly again, the emergence of reason transformed the dreamy intuitive mind into a more a disciplined and organized form.) Both evolutions yielded more rational and deliberate forms of political authority, and more unified and integrated forms of political organization. Both are in fact examples of the overall evolutionary trend toward the growing differentiation and hierarchical reintegration within life systems.

Our will controls our lives so effectively because it reflects our basic feelings, and contains the principles and priorities that constitute the core of our being. *Conscience* would thus

seem to be an aspect of the will. Conscience gives us our ability to reflect morally upon our conduct so as to see our obligations, and then to govern our conduct on the basis of these obligations. Conscience, viewed as the capacity for moral self-reflection and self-control, can be seen as that aspect of the will concerned with morality. But the will is more than just a controlling center to moral thought: it's the controlling center of all thought, and indeed of personality in general. The will is the self-reflective and self-controlling capacity of thought and personality.¹⁰⁰

Another crucial aspect of the will consists of memory, or at least those parts of our memory (of skills, facts, attitudes, intentions) which are foremost in our daily thought and action. This is where the plans, agendas and projects so central to the will are stored. It is this active part of our memory which is so crucial to knitting our experience into a unified whole, and thus to maintaining our personal identity despite regular changes in our goals, outlooks and intentions.

However, if the continuity of our identities rested on memory alone, then the ubiquitous gaps which afflict our memories would create gaps in our self-identities (forgotten parts of our lives would cease to belong to us). Fortunately, our plans and projects help to close these gaps: even when we don't recall each and every detail of these plans, we can call them ours.¹⁰¹ In this way, the projects constructed and maintained by our wills help to knit our identities into unified wholes, even when we can't recall every detail. This observation is in keeping with our identification, above, of the self with the will.

Having thus identified the self with the will, and having also looked at the organization of the will, let's now look more closely at the *freedom and autonomy of the will*. Though individuals are born and raised within their own biological and social backgrounds, as they grow up their wills eventually become autonomous, that is, capable of operating independently of the direct control of these roots. This doesn't mean that they're emancipated from these roots, but just that what they do and what they are no longer is directly and immediately shaped by instinctual impulses or environmental conditioning. Our action is no longer impulsive, but thoughtful, insightful and planned. We can manipulate situations in thought, see novel connections, and act in creative ways that we were never conditioned to act in.

Our genes and cultures provide the underlying drives and frameworks to launch our creativities, but once launched, the human imagination soars into boundless realms of ideas and possibilities. These ideas, with their own autonomous logics and dynamics (see above), begin to shape human lives. In sum, then, *the will becomes independent because it gains distance from its social and biological roots by entering into the autonomous world of ideas.*¹⁰²

These points are directly relevant to the perennial question of the freedom of the will. There are different ways of escaping the conclusion that our will is not free. Indeterminism does so by rejecting determinism, while compatibilism does so by embracing determinism. Indeter-

minists describe free will in mysterious terms as an emancipation of our thought from the deterministic causation which governs physical bodies.¹⁰³ But these accounts are obscure and problematic.¹⁰⁴ This has led compatibilists to argue for the freedom of the will not by mysteriously emancipating thought from determinism, but rather by referring to the autonomous, self-regulating nature of human beings.¹⁰⁵

Compatibilism is also called soft determinism, because it accepts determinism, yet softens its impact upon freedom. Hard determinists see this reconciliation of freedom and determinism as a verbal slight of hand: if we are deterministic mechanisms which can't do otherwise, then it's simply wishful thinking to think that we can be any freer than other mechanisms. The soft determinist can reply that in rejecting that even autonomous behavior can be free, the hard determinist is ignoring significant differences between various kinds of deterministic causation. The causal terrain of the world isn't uniform: there are significant differences between human and non-human behavior which justify calling only the former free. These unique features of human behavior are captured in the customary concept of freedom.

The customary concept of freedom arose in political and legal spheres in the guise of liberty, which means being unconstrained in one's actions. But this concept of freedom also involves rationality (which involves being able to grasp the alternatives and consequences of actions). For example, a severely retarded man could hardly be said to be free to vote even if such a right was granted him by law. Rationality is in fact a precondition of political and legal rights. Therefore, *freedom essentially is a matter of having options, both internally in thought, and externally in putting thought into action within society: it's a matter of autonomy, of controlling our actions, rather than our actions being controlled externally.*¹⁰⁶

Thus, compatibilism sees freedom not in terms of a mysterious emancipation from necessity, but as knowledge of necessity, as awareness of options, both externally and internally. We're free to the extent that our action is autonomous, rather than dictated by external forces and inner impulses springing from our social and biological heritages. [My later writings develop replies to standard criticisms of compatibilism based on my theory of consciousness.]

As promised, let's end this account of the emergence of the rational will by leaving the topic of free will and returning to the topic of *the self and its identity*. The account of free will above implies that our identity is shaped by not just our genes and societies, but that it's also partly *self-chosen*. There is little doubting of the deep and pervasive influence of our biological and social heritages upon our identities. But our identities are also shaped by the inner agency of our wills, our ideas and creative imaginations.

Here our wills aren't emancipated from these biological and social heritages: rather they seek to reconcile them and to find enlightened ways of pursuing them. Rather than blindly reacting to social conditioning or instinctual impulses, like other species, we reflect upon our

societies and reform them, and we reflect upon our instincts and domesticate them. In so doing we consciously shape our personalities and freely choose our identities. But again, this freedom isn't emancipation from necessity, but instead, knowledge of necessity.¹⁰⁷

Thus, a true dialog has developed between our instincts, our institutions and the inner agency of our will or self in which their identities are mutually shaped.¹⁰⁸ This dialog is internalized within our minds in the form of the *tripartite psyche*, which Freud saw as consisting of the id, superego and ego, respectively, and Plato saw as consisting of appetite, spirit and reason, respectively. The role of the latter component is to reflectively reconcile and synthesize our competing biological and social needs. But again, this dialog is between autonomous entities, as has been argued immediately above, as well as in the beginnings of these past two chapters, where the autonomy of mental, social and biological factors was discussed.

It was through this rational reconstruction of the mind that individuals were able to more consciously control their instincts, reform their societies, and shape their own personalities. In this way a true dialog developed between our institutions, our instincts and our inner selves, in which their identities are mutually shaped. This dialog is internalized, as just noted, in the form of the tripartite psyche. It is part of the rational reconfiguration of our ancient animal mind, dominated by emotion and intuition into a more rational, disciplined and civilized form. This is the internalized form of the synergy noted above between mental, social and biological forces, i.e., between ideas, institutions and instincts.

This can be seen as a reconciliation of *existentialist* and what we might call "*essentialist*" views of our identity. The existentialist feels that self-identity is an open question, a pure matter of personal choice. The essentialist replies that our identity is determined by our biological and social heritage. The reconciliation is the thesis that the self is shaped by our biological and social heritage as it matures, but that the rational, creative self eventually becomes an autonomous agent capable of formulating its own identity by reflectively integrating biological and social forces.

In sum, then, we have found that the rational reorganization of the mind involved the reconfiguration of our ancient animal mind, dominated by emotion and intuition into a more rational, disciplined and civilized form. With the emergence of the rational will, came disciplined, coordinated control of our emotions on the one hand, and of our intuitive thought processes on the other. In this way, rational wills, rational imaginations and rational personalities arose together. Thought and action became less impulsive, and more planned and autonomous. This is the basis of growing human freedom. It is also became the basis of our transformed self-identities, for these identities were now consciously shaped by our rational wills reflecting upon and integrating our social and biological heritages into enlightened directions.

PROGRESS IN THE SYNERGY OF INSTITUTIONS AND INSTINCTS

Paralleling the previous chapter, we'll now end our analysis of the synergy of instincts, institutions and imaginations by looking at its progressive nature. We'll find some grounds for concluding that their synergy represents real progress, especially as it reaches its culmination, with the emergence of civilization in humans, where cultural and mental evolution play such a role. We will use a similar approach to the one used in the previous chapter, which argued that civilization and reason represent progress within human evolution. The main difference is that here the argument is that they represent progress within evolutionary history as a whole.

Evolutionary progress as a whole can be evaluated in terms of the *functional* value of survival,¹⁰⁹ or the *inherent* values of life¹¹⁰ and of certain mental states like happiness and pleasure.¹¹¹ Success in achieving the first two of these three kinds of value can be said to represent progress in *biological* evolution, while success in achieving the third can be said to represent progress in *mental* evolution.

Progress in Biological Evolution

When citing the functional value of survival in talking of biological progress, one can be referring to either actual success in surviving (which is measured in terms of abundance), or to being simply designed for such success (which is measured in terms of fitness). With this in mind, the functional value of survival and the inherent value of life yield the following three criteria of biological progress. (1) Progress is growing success at the ultimate function of survival. (2) Progress is growing fitness (being better designed) for the ultimate function of survival. (3) Progress is the proliferation of life (i.e., increasing variety of species), which is inherently valuable. These criteria say, in effect, that biological progress comes from growing abundance, variety, and fitness, though they differ on which are important and why.

To begin with, it can be noted that there's ambiguity in the first criteria. In talking of *abundance*, we may be talking about numbers of genes, cells or individuals. Still, by most any such measure it does seem that life as a whole has generally progressed. With a few temporary setbacks, life has grown steadily in numbers (as well as variety) from its early history. This is only to be expected, given the way it has invaded whole new realms, and has steadily fed upon and grown upon itself, thereby creating more and more adaptive niches for further exploitation (see previous chapter notes). We can also say that the biggest advances here by far have been among certain insects and microorganisms. Indeed, there are more ants than all existing land vertebrates combined.

Again, there's ambiguity in what we mean by proliferation in *variety*: it may mean increasing numbers of species or increasing disparity in body plans. The former, like increase in numbers of individuals, is generally, but not invariably true of evolution as a whole. Again, insects excel here: they make up three-quarters of living animal species, and one-half if we include plants.

Our final criteria says that progress is improved *fitness* for survival (that is, becoming better designed for the function of survival). Arguably progress has come from abandoning the simplicity and profusion of the invertebrates, for the growing complexity, flexibility and intelligence of successive groups of vertebrates, especially humans. However, this latter trend isn't so clearly progressive as some seem to think, and it's dwarfed by the progress of certain invertebrates. For example, despite the obvious fitness of humans, these invertebrates have been around far longer and in far greater numbers than we have; and they'll most likely endure in greater numbers in the future.

These criteria, then, generally tend to the conclusion that though life has progressed as a whole, it hasn't done so everywhere or always in the same degree or fashion. By most any measure, the most progress has occurred in certain insects and microorganisms. Perhaps the safest claim is that certain microorganisms and insects, and possibly certain vertebrates such as humans, are bound to appear on most any list of the highpoints of biological progress.

Progress in Mental Evolution

When speaking of progress in evolution, we must consider not only blind biological imperatives of survival, but also what's *consciously* desired by organisms. Here we are entering the realm of *mental evolution and progress*. What represents progress here? One view here is hedonism. It's the thesis that pleasure is the only thing which is inherently valuable or desirable, and that only displeasure is inherently undesirable. Here historical success in these directions would constitute progress in mental evolution. A similar phenomena prominent in such accounts is that of happiness. It is based on an overall sense of fulfillment, and is often seen as being less fleeting and sensuous than pleasures.¹¹² It requires sophisticated abilities for conceptualizing the world and one's situation in it, and for recognizing one's individuality, and for forming goals.

Admittedly, it's often felt that hedonism gets things backwards. We often we desire things without thinking of the pleasure or happiness they will bring. For example, we can desire to put our children through college, and our happiness comes only afterwards when we achieve what we really desire. So what is really desired here isn't happiness but goals such as putting our children through college. But hedonists can reply that without feelings of happiness and pleasure

we wouldn't desire anything at all. Parents wouldn't desire college for their children if no one ever got any happiness or pleasure from it at all. Arguably, in a universe devoid of any feelings of pleasure and happiness (or pain and suffering), there would be nothing of moral value whatsoever. So we'll operate with a hedonist account of progress in mental evolution below.

C.J. Herrick (1956:122ff.) gives an interesting argument for progress in mental evolution. "Progressive evolution," he claims, "is successive enrichments of the intrinsic values of life and refinements of their quality." He rejects survival as the mark of progress by saying that "quality is more important than quantity." He says, "The conclusion is that in the higher animals the life of the individual is enriched The individual lives a fuller life, that is, he makes a better living as measured by satisfactions achieved." Unfortunately, Herrick supports these contentious claims with weak arguments based rather inappropriately on biological analogies.¹¹³

M. Midgley (1979:145-64) gives the most insightful arguments from the other side of the debate. She agrees with Herrick that biological emphases on sheer survival are not enough: what's important is "what each of them *does* while it survives."¹¹⁴ But she then takes a relativistic approach to progress that's wholly at odds with Herrick's. Each species has its own characteristic sort of fulfillment, she says. We may look to society for happiness, but polar bears look to solitude. There's no single, objective scale to grade all species on, any more than there is to grade, e.g., personalities or professions on. Intelligence alone (which Herrick points to) is an inadequate scale here, for it can magnify destructive as well as constructive traits when it becomes too cold and calculating and gets too much out of contact with our more tender feelings.¹¹⁵

"The truth is," she concludes, "there can be no evolutionary ladder. Creatures diverge, each to its own way of life, each finding its own characteristic sort of fulfillment." Thus, we oughtn't say that species progress up an evolutionary tree with a dominant direction of growth. Instead, she suggests, they just spread outward from a common stock in multitudes of interconnected directions, like a bush.

Midgley is right to stress how each species diverges to its own way of life and characteristic sorts of fulfillments: some are social, others are solitary; some pair-bond, others do not; some hunt, some graze; some are sedentary, others prefer to roam. Combinations of these help to differentiate species from one another. But do such characteristic sorts of fulfillments wholly rule out comparisons of progress between species?¹¹⁶

Our earlier discussion of progress from traditional to civilized life above suggests a way to justify Herrick's claim that enriched lives are superior: they're superior to the extent that they *incorporate and extend* more primitive lives without incurring significant new costs, for in such conditions the enriched lifestyle differs from the primitive one primarily by improving it. For example, we might say that the lives of house flies are impoverished relative to those of humans,

due to our possession of most kinds of rudimentary pleasures presumably possessed by flies¹¹⁷ (feeding, warmth, etc.), as well as our possession of vast ranges of other experiences (as embodied in our rich ensembles of emotions and values, our rewarding personal relationships, our culturally enriched imaginations, our spirited self-expression, etc.). It should be noted that the increased level of enjoyment in enriched lives that is being referred to here is in quantity only, not in quality.¹¹⁸

On this approach, it was the evolution of intelligence, culture and sociality that enriched mental life.¹¹⁹ Especially important here was the great expansion of intelligence in higher vertebrates, for it brought conceptualized dimensions to emotional life and personalized dimensions to social life. It also brought the added capacity for actually experiencing happiness, which, as noted above, presupposes real intelligence. The highly developed imagination and culture of humans have taken them farthest along this overall path. We have the ability to plan our lives so that they may be more fulfilling and enjoyable. We can construct our material cultures so that we may spend more time enjoying our lives and less time toiling and suffering. We can also construct our lives in order to reconcile conflicting needs and maximize long-term enjoyments (e.g., family planning).

Our imaginations don't just serve in these ways as means for maximizing our enjoyment of life, they are also inherent aspects of our enjoyment. Imagination opens up new dimensions to enjoyment, itself. Humans can take great pleasures in their own imaginations, thus opening up whole new areas of enjoyment, like literature, music, religion, etc. But it also greatly enhances the basic pleasures we share with other animals, like eating and sex. For example, we don't just devour a carcass upon the ground: we can prepare it in delicious ways, and then enjoy it with wine, music and the conversation of friends. Here, our lively imaginations allow us not only to enjoy new dimensions of enjoyment, but also to anticipate, prolong and revel in them.

Thus, when Midgley claims that solitary and social lifestyles are just plain different, but not superior or inferior to each other, a reply might be that social life can, with some objectivity, be called superior in that the most rewarding lives occur in societies and cultures. Solitary life misses out on these culturally enriched experiences and richly fulfilling personal experiences which social life affords. Of course, social life has costs, such as increased stress, but arguably, these are differences in degree from solitary life, and sometimes not very large degrees.¹²⁰

An obvious reply is that solitary animals would weigh up these pros and cons differently. They wouldn't be happy in societies. But is this really grounds for relativism, or is it just grounds for saying that solitary creatures are afflicted by an inability to enjoy enriched lives? The argument is that the substantially greater range of pleasures in social life make it superior to solitary life: even though some animals are happy without these rewards, their lives are nonetheless relatively impoverished.¹²¹

Another possible criticism about citing sociality and intelligence as means to progress is that intelligence and social sensitivity can actually risk great emotional suffering and unhappiness. Though humans do, admittedly, have an increased capacity to suffer emotionally, they have still been quite successful in alleviating many other prominent sources of suffering, especially hunger, temperature extremes, disease, and physical pain (imagine living a winter through with little shelter, warmth, food or medicine). Because, emotional suffering comes from frustration of basic needs, it would presumably be statistically most prevalent in intelligent species which are not flourishing and are locked in a true struggle for existence. But we are a flourishing species in almost every way (at least so far). It would be curious if such a flourishing species actually found life on the whole unfulfilling, frustrating and depressing.

So it is, arguably, among the more enriched lives of the higher vertebrates that conscious values such as pleasure and happiness are best realized. This conclusion stands in marked contrast to the conclusions about biological progress. There we concluded that vertebrate complexity and intelligence was a prominent path to biological progress, but that it was dwarfed by the invertebrate path of simplicity and profusion. Here, however, the conclusion has been much the opposite. Despite the real diversity of species, each with its own characteristic sort of fulfillment, there is still, arguably, a dominant trend to mental and social progress in the form of increasing complexity and intelligence. Here our civilization and reason represent direct extensions of ancient evolutionary trends toward greater differentiation, and greater hierarchical integration of functions.

Whether a species seeks its characteristic fulfillments as a hunter or grazer, or as a sea-dweller or land-dweller, the more complex and intelligent mentalities are still, arguably, in better positions to enjoy richer mental lives. This occurs where mental, social and cultural evolutions are most interactive and mutually enriching. It comes from factors like intelligence, cultural elaboration of experience, and intimate social relationships – all areas in which humans excel. Most important of all here is our civilized, rational imagination. It emerges from the analyses above as not only that which most distinguishes us from all other species, but also as the basis of our mastery of both ourselves and our world, and of our highly enriched lives.

In sum, then, we've found different pathways and highpoints to evolutionary progress. In biological progress, which was seen in terms of growing survival or fitness, the dominant path was invertebrate simplicity and profusion, with vertebrate intelligence and complexity playing a lesser role. However, mental progress was seen as being autonomous from biological progress. It was described in terms of enrichment of pleasures, especially via intelligence, society and culture. Here invertebrates were found to be impoverished compared to humans and the higher vertebrates.¹²² The safest conclusion of all is that there are genuine pinnacles in evolution, that humans are one of them, and that he may well share this status with other species, such as certain

higher vertebrates, certain insects, and certain microorganisms.

This conclusion represents a reconciliation of the two emotionally charged assumptions that are most commonly proposed about the on the evolutionary tree of our species. Anthropocentrism, the traditional assumption, sees evolution as a tree, with us at its top (see, e.g., J.S. Huxley and G.S. Simpson). Relativism is skeptical: after all, is there really any species which would not put itself at the top of the evolutionary tree? Relativism sees each species as striving to flourish and advance in its own unique way. Thus, the evolutionary tree is pruned into a bush, which has a common stock, but no real advancement up or down (see, e.g., S.J. Gould and M. Midgley). The conclusion above reject these tidy extremes for a less tidy, yet perhaps more secure, middle ground.

SUMMARY

This chapter parallels the others, firstly, in defending the *independence* of institutions and instincts against attempts to deny their independence, and secondly, in studying their *synergy* and how it has shaped imagination.

We thus began by examining attempts by biological and cultural determinists to deny the *autonomous* roles of institutions and instincts in human action. *Biological determinism*, which denies independent cultural influences on behavior, was criticized for overlooking various facts: the existence of cultural diversity, the impairment of development without social and cultural contacts, and the fact that cultures evolve according to their own dynamics which aren't reducible to biological principles (here we noted how the history of economies, mathematics, etc. can't be derived solely from biological facts).

The autonomy of culture from biology was further defended by tracing their evolving relationships. It was argued that cultural evolutions advanced with the biological development of intelligence and sociality. Similarly, there are decreasing roles in social evolution for innate factors of instinct and kinship, and increasing evidence of intelligent, voluntary cooperations of individuals. This is evident when we compare insect colonies to higher vertebrate societies, then to primal human societies, and finally to civilization. Biological determinism thus seemed more applicable to blindly instinctual invertebrates whose behavior is stereotyped and preprogrammed, than to the higher vertebrates whose behavior is voluntary, flexible and insightful.

We also criticized *cultural determinism*, which claims that culture has usurped biology in shaping of behavior. In its extreme, behaviorist form, the claim is that we're wholly malleable and environmentally conditioned. But this fails to credibly explain, for example, why children so persistently defy the training of their parents. It is also implausible as an evolutionary strategy

compared to directed-learning, where time-tested innate drives motivate us to learn what's vital to our survival. Also, there's much evidence that rather than being passively shaped by our environment, our learning and action is in fact often deliberately controlled in systematic, structured, insightful ways.

A weaker form of cultural determinism doesn't deny instincts, but argues that our prolonged infancy and high intelligence renders them unimportant. But twin studies suggest otherwise, as do the deep and pervasive similarities in behaviors across human cultures and related animal species. Criteria of innateness such as pervasiveness across cultures and species, resistance to cultural curbs, and mediation by hormonal factors in development, suggest innate bases to sex, parental love, altruism, selfishness, aggression, fear, etc. This suggests that rather than culture having superseded instincts, there are instead pervasive innate influences upon behavior. Indeed, central aspects of culture, itself, including political tempers, and religious and moral conduct, show apparent signs of innate influences.

After having scrutinized these lopsided determinisms of biology and culture, we then looked at their synergy. Here we found a broad and obvious middle ground between the views that we are robotic gene machines or environmentally determined lumps of clay. This reconciliation recognizes that instincts do influence behavior pervasively, but that intelligence opens up real alternatives in the cultural realization of our innate nature. Biology and culture mutually promote each other, thereby unlocking potentials in each other that could never exist without their thorough-going synergy. But biology and culture also mutually constrain each other. We looked firstly at how biology constrains culture, then at how culture constrains biology.

We found evidence of *biological constraints on culture* in backsliding from cultural ideals. Despite their differences, world religions and Marxism share a strong commitment to altruism. But this ideal may be too lofty for humans. Though our society is based somewhat on altruism, it isn't blindly altruistic, like insect society. Our society is strongly based on self-interested cooperations, like all mammalian societies where blood-relatedness is low. This seems especially true in civilizations, where so many people are mutual strangers. While we willingly labor for our own self interests, we sacrifice for others mostly to the degree that they're close to us.

Another critique of visionaries from the previous chapter was also recalled here. It faults visionaries for underestimating not just *human nature* but also our *institutions*. Institutions embody the wisdom of the ages. They're complex, intricately adjusted system maintained by forces we can't fully comprehend and can't hope to replace. Ideas thus become building blocks in an overall process whose ultimate design they can only partly fathom and affect. This overall design is fixed as much by the system requirements of society as by conscious designs. So our

ideal should be a dynamic and open society which experiments and explores, but at the same time respects its customs as embodying the silent wisdom of the ages, and which shows intellectual responsibility by recognizing the limitations as well as the powers of imagination, and by eschewing radicalism and zealotry. This amounts to a call to be imaginative, but to recognize the *roots and limitations* of imagination.

These various observations served as a sober balance to earlier chapters which described the swelling powers of imagination. These limitations are rarely considered in philosophies of imagination, which is unfortunate, for the relationship of imagination to its natural and social heritages is crucial to understanding its true nature and capacity. This, once again, drives home the fundamentally *historical* nature of imagination. To fully understand the nature, powers and limits of imagination is to see its dynamic, underlying synergies in motion in their historical development. We can't really know what a thing can and cannot do until we "see it in motion" in its natural setting.

Concerning *cultural constraints on biology*, we found that the civilizing process involved the cultural domestication of our instincts. Our rapid social growth put stress on our natural balance of instincts, creating dangerous combinations of crowding, weaponry, territoriality, greed, rivalry, ideology, patriotism, etc. We have responded to these challenges with both strict social controls and intelligences, but have vacillated over the proper balance between these two.

Here we noted three traditional positions: the "*authoritarian*" view that human nature is ferocious and needs disciplining by strict government, the "*liberal*" view that human nature is benevolent and simply needs educating by enlightened government, and the "*anarchic*" view that human nature is benevolent but perverted by government and civilization as a whole. Today, we recognize that individualism and liberty are fountainheads of progress, so we try to solve social problems by educating individuals and seeking their voluntary cooperation, as the liberal view stresses. Still, urban societies couldn't operate without considerable discipline and strong mechanisms enforcing law and order, as the authoritarian view stresses. The anarchic view rejects this synthesis of liberty and authority, but this runs the real danger of anarchy in the full, violent sense of the word.

Another problem in the domesticating of our instincts was that of balancing old allegiances to family and tribe with the necessity of new allegiances to much larger groups. This problem was one of reclaiming the old tribal ethic of brotherhood, but expanding its scope to embrace everyone in a *universal ethic*. Such ethics emphasized universal principles, tolerance of nonconformity, and more reflective and integrated personalities. They were often embodied in world religions, which put love, hope and spirituality at the center of our being. This helped to restore the old, natural unity and harmony within our minds and societies. It helped to check their disintegration from the alienation, poverty, oppression, fear, and anxiety that have long haunted

urban life.

A final aspect of our domestication was the *rational reconstruction of the mind* in civilization. This involved the reconfiguration of our ancient animal mind, dominated by emotion and intuition into a more rational, disciplined and civilized form. With the emergence of the *rational will*, came disciplined, coordinated control of our emotions on the one hand, and of our intuitive thought processes on the other. In this way, rational wills, rational imaginations and rational personalities arose together. Thought and action became less impulsive, and more planned and autonomous. This is the basis of growing human freedom, for the rational will gained distance from its social and biological roots through the world of ideas. It is also become the basis of our transformed self-identities, for these identities were now consciously shaped by our rational wills reflecting upon, and integrating our social and biological heritages into enlightened directions. This dialog between our instincts, our institutions and the inner agency of our will (or self) is internalized within our minds in the form of the tripartite psyche.

Paralleling the previous chapter, we ended our analysis of the synergy of culture and biology by looking at its *progressive* nature. It was argued that we are a pinnacle of evolution, and that we may well share this status with other species. This conclusion reconciles relativism and anthropocentrism, which are the two emotionally charged assumptions most often proposed in such discussions of our place on the evolutionary tree. We have succeeded here largely due to our imagination, which gives us the power and autonomy to control our destiny.

Part two thus reaches the conclusion that there has been a progressive liberation of imagination in evolutionary history, first from biological determinism, then from cultural determinism. This represents a progressive unlocking of the mutual potentials of biological, social and mental evolutions, as well as a shifting center of gravity between them (the heydays of instinct, traditions, and imagination, respectively). However, despite this growing autonomy of imagination from its biological and cultural roots, it isn't emancipated from these roots, for it still flourishes best in close dialog with them.

These conclusions are based upon the *integrated psychological, sociological and biological approach* of this work. Using this approach, accounts stressing the socio-economic or biological determinants of imagination were synthesized with defenses of the autonomy of imagination.¹²³ Similarly, the rational reconstruction of the mind was explained psychologically in chapter three as a synergy of symbolism and imagery, sociologically in chapter four as an integral part of the evolution of civilization, and biologically in chapter five as part of the domestication of human nature.¹²⁴

So to fully understand imagination's nature, powers and limits, we must study in these ways the dynamic synergies of the psychological and sociobiological forces underlying imagination's historical transformations. That is, we must take seriously the fundamentally

historical nature of imagination. This is a major shortcoming of current accounts of imagination.

CHAPTER 5 NOTES

1. This chapter will act as a conclusion to part two, just as the last chapter in part one acted as a conclusion to part one. So, just as chapter three gave an overall perspective on the synergy of intuition, images and symbols, so this chapter will give an overall perspective on the synergy of imagination, institutions and instincts.

2. “Limitations of imagination” doesn’t refer in this work to limits on what imagination can dream up, but to what it can actually achieve in the world.

3. For example, Warnock’s romantic approach extols the powers of imagination, but overlooks its limitations. Brann mentions such matters in her discussion of poetry and philosophy, for example, but doesn’t develop a systematic framework for evaluating the proper formulation of creativity (in terms of the proper balance of reason and imagery, or imagination, customs or instincts). This prevents a systematic understanding of the nature and capacity of creativity.

4. R. Dawkins and E.O. Wilson have at times made such immoderate claims (e.g., Wilson 1975:209, Dawkins 1976:21).

5. Less convincing evidence of the role of culture as well as genes in development comes from studies of the thirty or so children that have been found living in the wild (having been raised by bears or wolves). All were linguistically and intellectually stunted (Brown 1958). However, this doesn’t prove that behavior is culturally as well as genetically determined, for these children may have been born retarded (and subsequently abandoned in the wild), or may have been retarded by improper diet in the wild. More support for cultural roles in determining behavior comes from the deprivation experiments with monkeys, noted in the text.

6. Nothing mystical is meant by claiming that evolutions can have their inner “logics”. The point is just that the formal requirements of mental, social and biological systems represent special *organizations* of ordinary (mechanistic) causal processes. For example, each step in the evolution of the heart may be explicable mechanistically in terms of trial-and-error mutations of chromosomes: yet for hearts to have evolved at all, these trial and error mutations must have involved developments of valves, pumping muscles and chambers, for these are requirements for this particular component of circulatory systems. System requirements thus act as *formal* causes in the sense of determining which mutations are functional and which are dysfunctional to the operations of their systems.

These formal causes don’t mean evolutionary history is inevitable. There is, arguably, a role for both chance and necessity in evolution. However, not everyone agrees. Huxley says that the evolution of man and conceptual thought was inevitable (1942:569ff., 1953:140f.). Gould (1989:317ff.) replies that these are improbable, not inevitable: they require combinations of improbable events like the extinction of reptiles and the survival of our particular Homo line over others. There’s room for sensible compromise here. Whether or not man *per se* was inevitable, the evolution of intelligence (just as the evolution of society, communication, etc.) is a prominent historical trend with strong adaptive values. It seems *quite probable* that a highly intelligent social species of some sort would eventually have evolved to the point of employing symbolism in language and thought. Chance may be a basic part of evolution, and accidents

may have profound, cascading results in history, as Gould notes. Yet evolution can explore broad opportunities on different occasions in different ways, thus attenuating this lottery effect. Gould underestimates the necessity in evolution in denying the probability of a human-like thought. Huxley, by contrast, perhaps overstates this necessity in saying that the evolution of man was inevitable.

7. These formal system requirements are explored in different ways in evolutionary history. Insect colonies have formal system requirements (for maintaining cooperations, dividing labor, communicating information, sharing resources, etc.) which their *genes* had to *blindly conform* to for such societies to emerge. Thus their social systems are strictly governed by their social instincts and reflexes. In higher vertebrate society, especially civilization, no such rigidly genetic control exists over the unfolding operations of society in all its extreme complexities. Instead, the dialog of imaginations and institutions (the cultural motor) is the central driving force of our socio-cultural development. Here *imaginings actively explore* the possibilities of our social existence.

8. In its *dualist* form, epiphenomenalism owes us an explanation of how such radically different entities as bodies and minds (only one of which is spatial) can have *any* causal relationships in *any* direction whatsoever. In its *materialist* form, epiphenomenalism posits a form of energy-matter which doesn't interact in any way with other forms of energy-matter spatially contiguous with it. This is strange enough when viewed simply from the perspective of physics alone. But it is doubly strange when viewed from the perspective of biological evolution, for a remarkable features of this evolution is the highly creative use it makes of all of the tools it's supplied with. There could be *neutral monist* forms of epiphenomenalism, but the only way of rendering them compatible with biological determinism is by treating the *physical* aspect (including the biological and neurological) as a *semi-autonomous* part of the single underlying substance (biological determinism demands this), with the *mental* aspect as a *purely epiphenomenal* part of the single underlying substance (epiphenomenalism demands this). But this lands us right back with the problem of dualism which was noted above: how can the brain (which is spatial) causally affect the mind (which is nonspatial)?

9. What follows is a brief passage of natural history. It's integral to the philosophical argument above for the autonomy of culture from biology. What's new about it is its use of the growing evolutionary role of intelligence, sociality and symbolism to show *just why* biological determinism is plausible at some evolutionary levels, but not others. Yet the argument itself simply synthesizes well accepted views (e.g., insect society is based on blind altruism while vertebrate society is based more on intelligent self-interest; language boosted sociality in various ways). As noted at the end of the previous chapter's introduction, space limitations make it impractical to cover the evidence for all the views below which are well accepted, so the reader will instead be referred to studies where such evidence is found. However, where less widely accepted views appear either the evidence will be cited or the speculative nature of the view will be admitted.

10. Insect behavior, for example, is mostly stereotyped and preprogrammed. Learning is narrow in scope, limited to narrow ranges of stimuli, and learned along strict channels in brief sensitive periods. Recognition is limited to relatively isolated sensations rather than fully integrated objects (thus their minimal grasp of individuality). Their compound eyes pick up motion well, but are poor at discerning forms. Their olfaction detects caste and nestmates, but not individuals. Although symbolic, bee language is still limited, rigid and specific. Insects in fact have few basic signals, each connected with limited responses. Insect communication is largely in the limited chemical mode, with its slow transmission and negligible information modality, and the tactile mode, with its gross limits on transfer.

Many insects are mere automatons, running through short life cycles in rigid programs that "unfold swiftly and unerringly from birth to final act of oviposition." Insect behavior may be complicated

and may mimic vertebrate's, but insects are still stimulus-bound and reflex-dominated. Their's is probably the farthest development possible in reflex behavior. Higher learning probably requires greater neural multiplicity, complexity and integration. Insects are here defeated by their small size. (Evidence and examples for the two paragraphs above are covered in Dethier 1964:42-4,91, Wilson 1975:544, Barnes 1980, Barnett 1981, Filloux 1975, Jerison 1973, Tinbergen 1967, Lorenz 1977.)

Lower vertebrates resumed invertebrate trends of expansion, centralization and encephalization of nervous control. The sensori-motor arc was extended up spinal cords and further elaborated in projection, association and integration areas. But cognition remained primitive. Vision remained keyed to movement and isolated stimuli. Learning remained simple and narrow, with behavior slavishly restricted by habit and instinct. (Evidence for this paragraph is in Dethier 1964:91, Gleitman 1981:37, Jerison 1973:18,262.)

Cognition in birds is sophisticated compared to that in lower vertebrates, and is surpassed only by mammalian cognition. Birds exhibit superior visual discrimination of individuals, topographies and even stellar constellations, but respond only to narrow aspects of what they see. Examples are the simple stimuli triggering food begging and egg tending in gulls. Birds show advanced learning in certain narrow areas like migrating and singing, but only against a strongly instinctual background. Most behavior is rigidly bound by habit and instinct. In fact, the basic trend in avian mental development is toward perfection of *instinctual* behavior, and only casually and secondarily toward more flexible and *intelligent* behavior. Size and weight factors in flight may have been instrumental here by limiting skull and brain growth. Again, their society is comparable to that of insects, with extended parenting, advanced communication, repeated foraging, and cooperative breeding. Yet, despite this sophistication, bird societies lack the degree of complexity and cooperation of both insect and higher mammalian societies. (Evidence for this paragraph is in Jerison 1973:156f.,177f., Wilson 1975:156f., Tonsley 1966.)

11. Behavior became less rigidly programmed and more voluntary once isolated perceptual images were integrated into genuine conceptualizations. Lorenz (1977) argues that this was underpinned by constancy mechanisms in perception (to maintain forms through variations in distance, lighting, orientation, etc.), by an inner conceptualization of space (the framework for representing interacting objects persisting through change, relocations and disappearance), and by larger association areas in brains (to encompass changing facets and interrelations of objects). This expanded comprehension of particulars in social and natural surroundings, and broadened grasps of the histories of incidents and relations between these particulars. This enhanced not only volition and insight, but also cultural abilities, social cooperation and communication. Intelligence, language and culture became mutually enriching, as Wilson (1975) notes. The culmination of this came with the more intelligent and social mammals and birds, and with man's symbolically elaborated thought and action.

With the rise of modern mammals, some fifty million years ago, there was a dramatic expansion in brains, creating flexured, fizzured organs with growing cortical projection and association areas. Rigid, stimulus-bound instincts were increasingly modified and overshadowed by learning of increased scope and potency. This more generalized learning fostered more open instincts (drives), more conceptualized behavior, and more voluntary control over emotions and motor sequences. (Evidence for these points is in Jerison 1973 and Dethier 1964:74f,91ff. especially, but also Maier 1973, Barnett 1981.)

This comprehension was intuitive. It wasn't step-by-step, but direct and immediate apprehension, like the recognition of individual physiognomies and moods so crucial to social activity, or the gut feelings for spatial and motor parameters vital to physical activity. Higher intuitions consisted of hunches about physical and social situations, manipulations of these situations in the inner space of consciousness, and the segregation of means and ends underlying deliberate, intentional action. Examples are the uncanny accuracy of baboons in digging for water in dry stream beds, the sophisticated hunting strategies of wolves, and the social manipulations of rhesus monkeys (Wilson 1975, Lorenz 1977). Such intuition is often quite inventive and creative, but it's also pre-symbolic and tied to immediate practicalities of animal survival. Its emergence from conditioning (Lorenz 1977) presents us with *imagination* in its most

primitive and practical form.

12. This trend is clearest in the evolution of civilization, as we'll soon see. Cooperation is elaborate in blindly altruistic insect societies, but members of these selfless, robotic colonies are so closely related as to be readily expendable from the genome's view. In vertebrates relatedness dropped, and it became more individuals than societies that promoted the genome. Sociality declined in higher vertebrates until rising intelligence (which enriched communication, understanding and cooperation) replaced the role altruism plays in insect cooperations. Birds, for example, with their increased recognition of each other and more personalized relations, are able to cooperate in families and cooperative breeding. (The thesis above is argued extensively in Wilson 1975:379ff.)

The highest mammals, with their superior intelligences, perfected these personal relations and self-interested cooperations. They're capable of quick assessments of situations, of the individuals involved, and of where their personal interests lie. "By deftly picking their way through conflicts and hierarchies with minimal personal sacrifice, they cash in on society's benefits at low investment." Their sociability is an intelligent and self-interested one. They don't ignore each other like lower vertebrates. They need each other. They form attachments, but they're discriminating, not blind like insects'. Their relationships are complex mixtures of love and hate, friendship and hostility. Their feelings are shaped by intelligent perceptions of individual identities, kinship lines, histories of incidents and self-interests. These bond individuals into cliques and families, the building blocks of higher mammalian society. (Evidence for this paragraph is in Eibl-Eibesfeldt 1971, Wilson 1975, Jolly 1972.)

13. Cultures are seen here as bodies of information populations transmit behaviorally (by imitation or teaching) rather than genetically. They flourish with intelligence, socialization and sociality. They encompass social roles, tool use, diets, hunting strategies, predator avoidance, language dialects, fidelity to migration and mating locales, etc. Most learning is actually mediated by cultures rather than individuals alone in higher vertebrates.

Culture is so powerfully adaptive because it's cumulative and easily modified by new experience, because it spreads so quickly and can be initiated by single individuals, and because of the synergy of innately based forces conserving it (e.g., imitation drives and loyalty bonds) and modifying it (e.g., wanderlust, rebelliousness, exploration, play). It's also adaptive in adjusting behavior to both the known and unknown. Though the building blocks of cultures are individual perceptions and imaginations, they're assembled more in response to unforeseen social needs and unknown ecological forces. Thus, the origin, purpose and even existence of these emergent phenomena can go unrecognized, even as they powerfully adapt behavior. (Evidence for the two paragraphs above is in Lorenz 1977:195f., Wilson 1975:168. Bonner's *The Evolution of Culture in Animals* defines culture as information inherited by learning, and gives much detailed evidence of it in a wide range of species.)

14. This paragraph is fairly speculative. Discussion of early humans and higher vertebrates is based on Wilson 1975, Morris 1967, Desmond 1979, Howell 1973, Jolly 1972, Kummer 1971, McFarland 1979, Tonsley 1966, Lorenz 1966, etc. A good account of emerging areas of consensus about early human evolution is Pilbeam's review in *Scientific American*, March 1984.

15. Primates exhibit inventive, opportunistic mentalities, highly personalized relationships, richly expressive languages, pliable social structures, complex social strategies, facile cultures, and prolonged socialization of young. So intense is the interplay of biological, social and mental evolutions here, that (as we've seen) individuals are sometimes unable to develop fully outside of society, to the extent of being emotionally stunted and incapable of mating. (Evidence for this paragraph is in Jolly 1972, Kummer 1971.)

16. Though behaviorism rejects empiricism's introspective method, both deemphasize innate structures and emphasize the initial blankness and plasticity of cognition. Also, both see learning purely in terms of building up associations between sensory inputs. Finally, both deny our autonomy by reducing cognition to passive associations of perceptual materials, which lack active independence from perception, and are essentially just products of the external, perceptual environment.

17. See the note below on introspection.

18. Lorenz 1977:ch.4-6 argues this extensively.

19. For example, in *Biographia Literaria* and elsewhere, Coleridge tried to distinguish between "fancy" and "imagination" proper. Fancy acts on Humean principles to mechanically recombine experiences into fictional forms not already experienced. It is "no other than a mode of Memory emancipated from the order of time and place." True art, however, springs from the imagination, which organically assimilates and transforms experience into new, synthetic wholes which exhibit emergent relationships and identities. (Consider, for example, how characters lifted out life and put together in a fictional work can be wholly transformed in their new relationship.) Imagination is that "synthetic and magical power" which extracts essential and universal features from disparate experiences.

This imagination is also what enables the poet to see deep symbolism within things, and to bestow them with profound feeling and awe. It differs from mere fancy in that true imagination is the source of real poetic insight, while fancy deals only with similes, allegories and other such (primarily mechanical) associations. The true poetic genius thus exhibits,

the union of deep feeling with profound thought; the fine balance of truth in observing with the imaginative faculty of modifying the objects observed; and above all the original gift of spreading the tone, the atmosphere, and with it the depth and height of the ideal world . . . (*Biographia Literaria*, chap. 4)

Criticisms of associationism also came at much the same time from within the British philosophical tradition itself. For example, J.S. Mill criticized his father's associationism (see above) by arguing that complex ideas can assume properties that can't be predicted from knowledge of its components. He says that "the laws of the phenomena of mind are sometimes analogous to mechanical, but sometimes also to chemical laws" (*A System of Logic*, vol. II, bk. VI, chap. 4). In the latter cases, "it is proper to say that the simple ideas generate, rather than that they compose the complex ones." In these cases, we can no more predict the properties of complexes without benefit of experience, than "knowledge of the properties of oxygen and sulphur enables us to deduce those of sulphuric acid without specific observation and experiment."

20. W. Kohler: *The Mentality of Apes* 1925. The quotation is from "*Intelligenzprüfungen an Anthropoiden*," *Abhandlungen der königlich preussischen Akademie der Wissenschaften* 1917 no. 1, pp. 149-174. Translation by Boring.

21. This finding reopened the door to introspection in psychology. Subjective reports about consciousness have proved quite useful to psychology, even before Ebbinghaus's famous 1885 work on memory. Care must be taken, however, to insure that the introspective remains objective (this was lost sight of earlier in this century). If the demand for objectivity was behaviorism's greatest heritage, its dogmatic banishment of consciousness and introspection from psychology is perhaps one of the most damaging aspects of its legacy.

22. Compare how the perception of a melody transcends (is transferable beyond) its embodiment in any

particular instrument. More evidence for how cognitions were transferable beyond the original stimulus situations in which they were learned came from Tolman's experiments with rats (1932, 1948). He showed that they could swim through mazes they had earlier walked through or had been pulled through on trolleys. Tolman also points out that the whole behaviorist notion of a *reward* is a subjective and relative notion which is dependent upon the unobservable phenomenon of *expectancies*.

23. F.C. Bartlett: *Remembering* 1932. Bartlett deeply influenced Neisser.

24. N. Chomsky: *Language*, 35, 1959, p.30.

25. 1978:39f., 52, 58ff., 122ff.

26. Marx's view of human nature dominated sociology until sociobiology appeared in the 1970s. For example, *The Social Construction of Reality* says,

Humanness is socio-culturally variable. In other words, there is no human nature in the sense of a biologically fixed substratum determining the variability of socio-cultural formations While it is possible to say that man has a nature, it is more significant to say that man constructs his own nature, or more simply, that man produces himself. [p.49]

27. Also, these twins showed similar physical and mental disorders, including identical phobias and anxieties. There are also suggestions that homosexuality may be partly heritable in males, though less so among females.

28. The Harvard psychologist, Jerome Kagan, notes that the estimated 20% of children who genetically inherit *extreme shyness* differ in interesting ways from those who develop shyness out of disagreeable experiences. To begin with, the former are more likely to have thin faces, slender builds and blue eyes. As babies they fuss at almost any surprises, and sleep poorly at night. They later cling to their mothers around strangers and are uneasy around anything abnormal. Still later they are abnormally reserved around other children.

29. See Wilson 1978:ch.2.

30. Nonetheless, societies and cultures also have their own *inherent* dynamics, as argued above.

31. Religions are shaped by social factors as well. The motives underlying it are expressed in different ways, depending on evolving social conditions. See discussion of the development of religion, above.

32. This entire account of world religions is based on their scriptures and (1) standard histories of religion: Ling 1968, Noss 1949, Burt 1957, Chan 1973, Radhakrishnan 1954, Bouquet 1967, Clark 1900, Hopkins 1928 (2) psychologies of religion: Coe 1916, Fuller 1986, Josey 1927, Leuba 1969, Scobie 1975, Spinks 1963, Strunk 1962, Thouless 1971.

33. Though religious ideals like brotherly love are often seen as ultimate aims rather than immediately attainable, we still can be said to "backslide" from them in that we *profess* each week to believe in them as aims, and we often even *do* believe in them as aims (even if in rather split-minded, tenuous ways), but nonetheless *we resist moving steadily toward these avowed aims*.

34. Freud agrees with the points made immediately above, when he says in *Civilization and its Discontents* (pp.41-44) that religion promotes social development by repressing potentially dangerous emotions (contrast Blake's complaint above). However, the present point is that Freud went on to dismiss religion as an *irrational neurosis* which is created by this repression. Here he meant that religion represses ideas into the unconscious where they are outside further rational control and create neuroses which influence behavior in irrational ways as unconscious motives. Thus, sexuality can be sublimated into worship, and irrational hostilities arise in the face of ideas threatening to this worship. Ritualism, too, can be seen as a form of obsessional neurosis, tolerated in the church, but seen as a mental illness in individuals (see *The Future of an Illusion* and *Character and Culture*). He also thought that it is "infantile" in its fixation upon a father figure, that it is something that weakens the intellect, and that it is something we should outgrow and leave behind for more rational outlooks (*The Future of an Illusion* pp.23,77-8).

35. See his discussion on neurosis and religion in his *Psychology and Religion*.

36. The great relevance of religion to human life comes from their inclusion of the whole of the human personality with its various needs into a meaningful system. They offer us a loving brotherhood of men, an eternal salvation that transcends death, a sense of ultimate belonging and purpose in an otherwise empty and lonely universe, and solid sense of reassurance in the face of our greatest earthly trials and tribulations. Philosophies, because they tend to be more detached and intellectualistic, usually prove less able to engage and hold the human imagination. Religion can bring more exalted, spiritual dimensions and deeper emotions to ethics than those found in purely secular, humanistic ethics. This may help explain why Christianity has flourished over the centuries, while Marxism withered after only decades. It may also explain why Taoism and Buddhism evolved from esoteric philosophies devoid of deities into a full-fledged popular religions full of deities.

37. Discussion of the events in these paragraphs can be found in, e.g., Hayes 1941, Harrison and Sullivan 1969, Braudel 1967, Brinton 1959, Daumas 1969.

38. On the industrial revolution, see Hayes 1941, Harrison and Sullivan 1969, Braudel 1967, Daumas 1969.

39. History is dialectical in that in any stage the relationships of the productive forces develop until their inner contradictions destroy social relationships (as when the feudal stage was undermined by the rise of exploration, trade and capitalism). A new synthesis of these productive forces then ushers in a new stage of history (in this case, capitalist).

40. Workers are exploited because their products are sold by capitalists for more than the labor costs that went into them. Concerning the rich getting richer and the poorer getting poorer, Marx claims that "while there's a progressive diminution in the numbers of capitalist magnates, there is of course a corresponding increase in the mass of poverty, enslavement, degeneration and exploitation, but at the same time a steady intensification of the role of the working class." Elsewhere in *Das Capital* he says, "the centralization of the means of production and the socialization of labor reach a point where they prove incompatible with their capitalist husk. This bursts asunder. The knell of private property sounds. The expropriators are expropriated."

41. At each stage of history a new dominant class emerges to control the new means of production. This dominant class uses ideology, social and cultural institutions, including government to impose its will on the other classes.

42. Marx adopted the theme of alienation which was so prevalent since the Enlightenment, but cast it primarily in economic terms. Private property epitomizes man's alienation from his fellow man, to Marx. Alienation also results from capitalism and the factory system, which alienate man from human nature itself (by robbing him of his creative nature), from nature (by removing him from nature and putting him in urban slums), from his fellow man (by subjecting him to dehumanizing factory work, where individuals are treated as objects), and from himself (by forcing him to work for others rather than for himself).

43. Much of Marx was borrowed. The dialectic was from Hegel and the materialism from Feuerbach. The class struggle in history was from Vico and Saint-Simon. The labor theory of value was based on John Locke's, and much of the rest of his economic theory was from Ricardo. His originality was the powerful system he synthesized from these sources.

44. See his critique of the Gotha Program. The contrast is between those who felt the classless, egalitarian society could be achieved in an evolutionary way which was compatible with democracy, and those, like Marx, who felt that a revolutionary path was necessary.

45. He also incorrectly predicted that communism would emerge in advanced capitalist countries, due to the contradictions of capitalism. Instead, communism has been more popular in the third world, due to gross inequalities there, and an anti-Western feeling inherited from colonial days. But communism is fading quickly even here, because international banks won't fund state-controlled economies any more. Also, the U.S.S.R.'s invasion of Afghanistan finally showed to sympathizers in the third world that communism isn't any more immune from colonial imperialism than capitalism.

46. Marxists complained that communism hasn't succeeded because of antagonism and competition from capitalism, and that it would do better if there were no capitalists to get in the way. Yet the dramatic failures of communism states in their *own* agricultural sectors raise serious doubts about whether they could even *feed* themselves without capitalist farmers and grain merchants.

47. These trends accelerated in China under subsequent reformers. Today, *capitalism* is growing faster in China than virtually anywhere else in the world.

48. The criteria for innateness discussed above seemed to apply to selfishness. It's prevalent across human cultures and species related to humans, and seems to resist cultural curbs placed upon it. While we're obviously altruistic (in parenting, defense of the group, etc.), individuals in all cultures generally exhibit high degrees of self-interestedness. Our allegiances are often quite fickle and self-interested, and our charity toward our fellow men is often quite niggardly. We find the same traits in other higher vertebrates (note how pigeons compete for handouts in the park). The sharp contrast here between these higher vertebrates and the social insects also suggests *differential innate programming for balances of altruism and selfishness* in species.

49. It would thus seem to be democratic rather than communist societies that hold the greatest promise for combining equality and liberty. One approach here is the *democratic, evolutionary socialism* Marx dismissed as unrealistic. Adherence to this path has also receded. Even in places like Scandinavia, taxes are now being cut, services are being pared, and industries are being privatized. Social Democratic parties today seem to have become parties of welfarism rather than of true socialism. That is, they recognize the free market as the true engine of prosperity, but ask how to harness it to help the needy.

A final approach to combining equality and liberty is that of vigorously seeking to provide *equal*

opportunity to all within a free and vigorous economy. This eschews equal income for all as economically destructive, and instead tries to level the playing field for all, by removing discrimination in education, hiring, etc. But this still leaves considerable economic disparities within societies.

In the end, then, it would seem that liberty and equality are only partly reconcilable, at best. But the most popular and viable solution seems to be a synthesis of liberty in the social and economic sphere with greater economic equality in the form of welfarism and equal opportunity.

50. Just recently hundreds of pages of secret documents from Lenin's era were bequeathed to the Librarian of Congress in Washington. He reports (USNWR 24 Aug 92) that the "The archival materials make it clearer than ever before that the totalitarianism of the Soviet system began with Lenin, not Stalin. Three documents in particular reveal, respectively, direct lying, the pedagogic use of terror and a murderous anticlericalism – all in the very early years of Soviet power. We see Lenin's telegram in English to a Danish newspaper, denouncing as capitalist lies rumors about harm to the czar's family – at a time when the telephone orders to kill them all must already have been given; his order to round up at least 100 'bloodsucking' prosperous peasants and publicly hang them as a lesson to the noncooperating peasantry, and a similar order to murder priests as an object lesson to a village that resisted the forced closing of its churches."

He then adds, "Most dramatic of all, perhaps, were the minutes of a Politburo meeting in August 1979 from the hitherto ultrasecret Presidential Archive in the Kremlin. It indicated that the intervention in Afghanistan was planned more deliberately and deceitfully and much earlier than many had assumed – and that the reasons were more ideological and less geopolitical than many in the West had thought. The vast communist system appears in its last years to have been both more out of touch with reality and more inclined to believe its own ideological categories than we have been inclined to believe. And if this helps explain why communism collapsed so fast, so too does the rich evidence the archives provide of the recurring opposition of the Russian people to Soviet rule."

51. An implication of this argument would seem to be that communism could *only* have existed in the forms witnessed by its history. It could only spread and persist by being imposed upon the people by revolutionary vanguards committed to it with a revolutionary fervor. It's not surprising that recently published documents show that the zeal for murder and terror was part of Soviet communism from the outset with Lenin, and that large amounts of money were sent to revolutionary groups abroad from the outset, even while Soviet peoples were starving. It's for these various reasons that liberal democracy's confrontation with communism was probably *inevitable*, and not an historical blunder by the West, as some have suggested.

52. This is perhaps his best point. Institutions are useful because they provide us with time-tested, pre-packaged lifestyles which embody vast wisdom about fruitful ways of pursuing our lives together. They landscape men's minds and furnish them with their purposes, challenges and conceptual tools. They enable us to channel energies in economic ways, focus attentions, and narrow choices. They thus eliminate the burden of reconstructing historical decisions ever anew and open up the cultural foreground for conscious deliberation and innovation, thereby providing arenas for the steady refinement of our imaginative powers. But their purposes often remain largely hidden.

53. Though such debates on the nature of humans and their society have always been speculative, philosophers have been drawn to them for millennia as if by magnets because of their vital political relevance. The text tries to bring recent scientific theories to bear on these ancient debates, but there's no denying the still speculative and controversial nature of such views.

54. For evidence see Breger 1974:61, Lorenz 1966:74,208f., Eibl-Eibesfeldt 1971:62,93,106,126. The

latter suggests that the motivational root of love is parental cherishing of their young, and that sex and aggression (against outsiders) reinforce love.

55. For evidence see Eibl-Eibesfeldt 1971, Wilson 1975, Jolly 1972, Kummer 1971.

56. This paragraph aligns with Pilbeam's review of hominid evolution (*Scientific American* March 1984, pp.60-69), which summarizes emerging points of consensus in this area. But this is still fairly speculative. The text is based on Howell 1973, Gowlett 1984, Jerison 1973, Jolly 1976, Wilson 1975, Washburn 1968, Bonner 1980, Rhodes 1976, Issac 1976, Desmond 1979.

57. See Fox 282f. and Midgley 1978:250f.. These values and skills probably arose through both cultural and natural selection.

58. See Breger 1974:77-81. Comments on aggression are from Lorenz 1966:230,234, Eibl-Eibesfeldt 1971:98-102.

59. Rousseau viewed our aggression as primarily a corruption of our nature by civilization. Though civilization perhaps intensified and institutionalized our aggression, there's evidence that all human societies are prone to aggression in one form or another, especially when family violence and clan feuds are considered. Even comparatively pacific tribes today are likely to have had bloody pasts. Man seems innately aggressive in that it's easy to teach him to kill, and difficult to culturally inhibit him from killing after he's started doing so. We seem innately predisposed to xenophobically divide people into friends and enemies, to fear the actions of strangers, and to slide into deep hostility through escalating threats and retaliations. (Eibl-Eibesfeldt 1971:72-4, Wilson 1978:99-120, Breger 1974:90-2.)

60. Hebb 1966:239-46.

61. Lorenz 1966:231-4.

62. Lorenz 1966:239-40.

63. Breger 1974:77-79, Mair 1972:85, Wilson 1978:126,142-3. Man's clothing presumably aids his control of public displays of sexuality outside tribal societies.

64. Breger 1974:97, Trivers 1983:43-60. Writing in the same volume as Trivers, Campbell usefully notes *cultural* factors in human altruism, while Trivers usefully notes *genetic* factors. Where Campbell seems to go too far (to me) is in claiming that human altruism is cultural rather than innate. There are good reasons for saying that it has innate bases (see discussion of innateness above). It would seem that in the evolution of civilization, culture *shapes, channels and reinforces our pre-existing altruistic feelings* (just like aggressive feelings) in ways that are useful to society at large.

65. Breger 1974:28,98, Eibl-Eibesfeldt 1971:80, Lorenz 1966:71-4, Carneiro 1978:205-19, Malinowski 1961.

66. Campbell *Op cit.* 11-41.

67. Wilson 1978:147-167.

68. Wilson 1978:156. Cf. discussion above on the move from status to contract.

69. Wilson 1978:116, Lorenz 1966:266f., Eibl-Eibesfeldt 1971:1-5.

70. Eibl-Eibesfeldt 1971:98-102, Lorenz 1966:230,234, Breger 1974:84f.. This seems to be true from the very outset of settled life. Large numbers of broken human skulls were found in the first-known Neolithic town, Catal Huyuk (Trump 1980:34f.). Still, aggression aided development of higher social feelings (loyalty, love, etc.).

71. *Book of Mencius* 7A:15

72. From the chapter entitled "The Nature of Man Is Evil" in the *Hsun Tsu*. As a Legalist, Hsun Tsu had a practical and authoritarian political attitude which emphasized man's selfishness and ferociousness, and the need for strict control of instinct by law, reason and training.

73. From the *Han Fei Tzu*, section on the synthesis of legalistic doctrines.

74. The *Lao Tzu*, chapter 15.

75. Book 9 of *The Republic* represents the three parts of the soul as a many-headed hydra (symbolizing the competing emotions), a lion (symbolizing the spirit, for it is known for its courage), and a man (symbolizing reason, for he is a rational animal). The unjust individual starves the man in him and lets the hydra and lion fight for control (he's obsessed with proving his courage and gratifying his appetites at the expense of reason). The result is the anarchy of the hydra or the tyranny of the lion. The individual would benefit by containing the hydra and enlisting the aid of the lion (in a rationally disciplined life, with spirit, appetites and reason working together for their common good).

Plato sees tyranny as a subversion of this natural harmony: it's akin to madness. Justice is the proper and healthy division of labor in both the psyche and society (whose three classes correspond to the three parts of the psyche), while anarchy and tyranny are pathological subversions of this natural harmony. In these views, Plato is much like Hobbes, Freud, and other modern thinkers who stress the need for strictly disciplining man's instincts to make social life possible.

76. See pp.253-8,260-1,274,280. She traces such views back to Butler's sermons, but they also resemble those in the *Book of Mencius*.

77. See pp.268,274,282.

78. Midgley's book is a sophisticated one, and I don't want to portray it simplistically. She maintains on pp.301-5 that many widespread institutions are "natural" in that they are well founded in our central needs. She adds that such institutions are often difficult to live with, and thus may require binding commitments from us. The point being made in the text is just that such commitments may not always simply be a matter of enlightened, free choice, or a matter of obedience to rules just because they are the rules of our own inner nature. Social systems have their own dynamics and requirements, and may have to sometimes impose these by actively disciplining individuals and enforcing rules. Civilization can often be a difficult girdle to wear.

79. See, for example, Muller 47-61, Mumford 38, Adams 1960:190.

80. See, for example, Hebb 29-46, Wilson 1975 (final chapter), Martindale 39-41, Eibl-Eibesfeldt 235-36. The quotation is from Wilson.

81. Some communitarians even claim that's the glorification of the isolated self by libertarians that has helped *cause* social problems: it has atomized society by dissolving social responsibility and promoting permissiveness.

82. Romantics actually seem to be claiming here that human history has moved inexorably *against* what's in the overall interest of mankind.

83. Actually, Sartre spoke in different ways about freedom. In *Being and Nothingness* he speaks of freedom in terms of indeterminism ("the essential point is contingency. I mean that by definition existence is not necessity. To exist is simply to be there."). Here he also bases our freedom upon the distance which our consciousness puts between ourselves and our world: man is not totally and mechanically determined by the world. It's in this book that he speaks of man being absolutely free, as explained in the text. Later in his biography of Flaubert and *Critique of Dialectical Reason* he recanted the absoluteness of our freedom. But he still claimed that whatever forces may shape and constrain us, we can still choose what to make of ourselves. Even a prison inmate is free to, e.g., choose to study law, to collect birds, etc.

84. This development is, incidentally, concerned not only with the present topic of the domestication of man, but also the recurring topic of the rational reconstruction of man.

85. Linton 1958:104. Also noteworthy here is the Osiris worship of Egypt's Middle Kingdom (which introduced the idea that good conduct rather than social position determined men's worth, and which extended afterlife from the pharaoh to everyone on this basis), and Babylonian literature of the second millennium B.C. which sought justification from the gods for death and suffering of the righteous (Breasted 1975, Frankfort 1949).

86. Functionalists like Durkheim explain early religion in terms of social functions ("social facts shall only be derived from social facts."), while developmental psychologists like Hallpike explain it as a mere "spinoff" of preoperational thought. But surely, both social and psychological factors have a role: it's more fruitful to see how they *interact*. Only in this way can we fully explain the character of early civilized religion in all its complexity. Much of early civilized religion's character (especially its entrancement with magic, mystery and authority) derives from the self-absorbed mentality of early man. Though mental development follows its own track, this development also requires social stimuli, the lack of which can inhibit it. In this sense, then, social stimuli may serve as driving forces behind mental development. But, as we've seen, the contrary began to occur as well, once the dialog of mental and social development reached a critical threshold in the first millennium B.C. It was then that prophetic imaginations and great ideas burst dramatically onto the world scene, wholly superseding early civilized religions, even as they were reaching their institutional zeniths.

87. The development of reflective moral thought is strongly hindered by the sheer intangibility of the objects of moral thought (intentions, obligations, feelings, etc.) compared to the concrete objects of thought in the physical world. This constraint on reflective moral thought fosters egocentricism and hinders empathetic awareness of others' viewpoints (especially in times of emotional conflict). Still, moral development isn't inhibited solely by intellectual factors (after all, some of the great prophets were illiterate). See Breger 1974, Hallpike 1979.

88. See Breger 1974:279-294.

89. This new emphasis on universal love was accompanied by more exalted conceptions of God and by clearer distinctions between good and evil.

90. This was a time in China of the “Warring States,” in India of the pre-Mauryan conflicts, and in the Middle East of the great Indo-European invasions. Similarly, Christianity flourished during a time of turmoil and breakdown in the Roman Empire.

91. See Ling 1968. We see similar factors at work in such diverse phenomena as the flourishing of mystery cults in fifth century B.C. Greece, the rise of Christianity in the social unrest of the late Roman Empire, and the cargo cults of the Pacific which promised the end of the white man and return of a bright future to natives whose old ways had disintegrated with the coming of the white man. Redfield 54-83 sums up this trend by saying that in maturing civilizations “The great idea moving among many traditions in troubled minds reshapes the moral order.”

92. Descartes’ point that, “I think, therefore I am,” shows futility of trying to deny the existence of one’s own consciousness. For this reason, it represents (among other things) a theistic reply to Eastern mysticism. Hume treats this self as illusory, but for replies see below and Whiteley (1973).

93. Quoted from the *Milindapanha*. The *Madhyamika-Sastra* argues from the Buddhist doctrine of relativity to the same conclusion: “if entities are relative they have no real existence.” In modern terms, the point would be that the functional relations which comprise individuals are wholly relative constructions. Yet it could be replied that even though claims about functional relationships are value statements, they can still be quite objective, once we understand how the relevant systems actually operate.

94. *Treatise* I,4,vi. See Lesser 1979 on Buddhist and Humean “no-self” theories.

95. Kant argues, for example, that, “There can be in us no connection or unifying of one bit of knowledge with another, unless there is a unified consciousness which *precedes* all the data of perception.”

96. It is this brute, systematic *coherence* of perception that also highlights, once again, the difficulties in attempts by mystics to dismiss the phenomenal world and self. Kant’s insights here are useful replies to various forms of skepticism from various cultures and eras over the reality of the self.

97. Heidegger saw this relationship between manipulation of the world and perception via subject-object poles, but he wrongly treated this polarity as a habit of the manipulative Western mind: it’s a condition of volition, itself, and requires considerable effort (as Hume noted) to abandon even momentarily.

98. When I say that “the will” defines our personality, I don’t mean to personify it. It is, in reality, a set of skills, beliefs and attitudes which are mobilized to evaluate, prioritize and execute courses of thought and action. It’s like the executive routines in computers, which (as noted by Neisser 1967) direct operations and farm out tasks, but which aren’t subject, themselves, to higher routines.

99. This represents a genuine synthesis of reason and emotion, rather than an enslavement of one by the other. The rational will guides our emotions on the basis of its intellectual authority, but it gains its power to enforce from the very forces it seeks to control. It must be admitted, though, that often the will is weak in the face of emotions, or is simply used to rationalize what some particular emotions dictates (yet, when our emotions deadlock, we are still forced to reason). Conversely, the rational will sometimes can strangle our emotional life, as when we embark on bouts of emotional denial for the sake of ideals of reason. But,

even though there is oftentimes a struggle between the rational will and our emotions, their proper and fruitful relationship is that of a cooperation towards our long term fulfillment. This includes a role for reason in the development of the rational, autonomous self, and the shift from subsistence needs to “higher” needs of creativity and self-expression. See discussion of liberal and authoritarian tempers, above.

100. Directed, deliberate thought is a manifestation of will. The will is what directs thought and defines its goals: it is our self-reflective thought directing our thought processes in general. Though deliberate thoughts are always acts of will, acts of the will can be rather thoughtless and impulsive at times. Rational imagination emerged as an integral part of the political organization of our minds and societies into more hierarchical, coordinated forms, but this doesn't mean that these minds or societies always operate in these systematic, goal directed ways that reason dictates. Still, an *effective* will (like an effective government) is *typically* a rational one, for an obstinate, irrational will (or government) is all too prone to crumble into the confusion and anarchy from which it emerged. The point is that a stable, effective will is one that embodies not just a disciplined spirit (its emotional aspect), but also a certain degree of enlightenment (its rational side).

The will is behind our personality as well as our directed thought and creative imagination. The will is the controlling center of both imagination and personality: it is imagination and personality becoming self-aware and self-controlling. In this way, our imaginations are intimately tied up with our individuality and personality. Imagination aids in the creative expression and growth of personality, while each personality brings to imagination its own, distinctive mix of feelings, motives, prejudices, etc., thus influencing cognitive style. We have already seen how personality influences imagination in the contrasting examples of Beethoven, who was systematic and deliberate, and Mozart, who was more impulsive and inspired. (Similarly, the styles and interests of imagination in adventurous and timid personalities would thus tend to vary, as would those in combative and gentle personalities, or decisive and indecisive ones, or excitable and tranquil ones, or narrow-minded and open-minded ones.) Creative people tend to share certain personality traits, too, such as discipline, boldness, ambition, skepticism, intelligence, unconventionalism, child-like curiosity and wonder, gullibility towards novelty, etc.

101. See Whitely 1973:98ff.

102. Compare Sartre's views on freedom, above. Here, as elsewhere in this essay, our claim isn't that ideas and thought are emancipated from instincts and social conditioning (for the flow of our ideas is shaped by our instincts and social conditioning), but just that ideas and thought have their inner dynamics which aren't wholly reducible to the dynamics of these other forces. Social and biological necessities fix basic parameters of problems, but ideas offer open numerous possibilities for solutions. Freedom isn't emancipation from necessity, but knowledge of necessity (mediated by ideas).

103. That is, if time were temporarily reversed, our thought could somehow take a different path forward again than it did before, whereas all physical bodies necessarily would follow the same path.

104. Indeterminists could mean here that our thought is literally uncaused. Yet this not only makes our thought accidental (when in fact it seems systematically interconnected), but it also robs us of our responsibility for our actions (we can hardly be responsible for what we didn't cause to happen). Alternatively, the indeterminist could mean that our thoughts don't determine each other, but merely influence each other. But this seems to say that if the clock were turned back, we could actually choose otherwise than we originally did even though our reasons were *precisely the same* as before, which is a curious assumption. Surely, we'd only choose otherwise than we originally did if we had *different reasons* than we originally did. Problems such as these have led many philosophers to look for human

freedom elsewhere.

(Incidentally, indeterminists might avoid the complaint that indeterminism robs us of responsibility for our actions by simply claiming that while our creative, intuitive thought is chaotic and indeterministic, so that we can't be responsible for it, this primordial level of thought is supervised by rational, controlled thought, which is under our control, and which we can thus be held responsible for.)

105. Such autonomy is quite compatible with the pathways of thought still being *remotely* controlled by instinctual drives and cultural frameworks. To say that our will is autonomous is simply to say that its complex internal operations are integral parts of the overall direction our lives take. Our behavior is mediated by the inner agency of our wills, by the universe of ideas, by our creative imaginations. This autonomy of the will is also quite compatible with the internal operations of the will, itself, being deterministic, like in an artificially intelligent computer. This is because all that's being claimed is that human action is self-governed (autonomous) rather than *directly and immediately* controlled by our genes or environments.

106. When compatibilists refer to free will, they're referring to the concept of rationality noted above (that is, being able to grasp alternatives and consequences of actions, being capable of rational self-determination rather than acting blindly according to impulse or habit). Again, such freedom isn't emancipation from necessity (as in indeterminism), it's knowledge of necessity, knowledge of alternatives. Though we couldn't have chosen otherwise, we still base our choices on wide ranges of alternatives unavailable to less rational minds. We live in a universe of ideas whose endless possibilities are the source of our freedom. So, there's a dialog of freedom and necessity: we're like puppets gazing up at the strings moving us; blind necessity becomes recognized, action becomes more conscious, freer (as Berger 1963 puts it).

Free will is knowledge not only of the external world, but also the internal world. It means recognizing inner limitations, inhibitions, neuroses and emotional problems for what they are and exploring solutions (as noted by S. Hampshire in *Thought and Action*). We are free to the extent that what we do is intentional, rather than being the result of external or unconscious internal forces beyond our control. True freedom thus involves knowing oneself as well as knowing one's world. Freedom is conscious mastery of our self-potentials as well as the potentials of the external world. As the existentialist would put it, although our action is shaped by external social forces and internal instinctual forces, we should seek our freedom by not blindly following such forces, but by always expanding our conscious scrutiny of them, and of all the alternatives they admit of.

107. Admittedly, the ideas which now govern behavior have their own inner dynamics and logics. But still, the flow of ideas, too, remained strongly rooted in social and biological contingencies. Also it must be admitted that the will must sometimes put itself above our biological urges (as in controlling sexual urges or anger) or our social needs (as with asceticism, or more mundanely with work deadlines). But typically, the rational will gets its power to control from these very impulses and needs that seeks to guide. The will is in this way, as Lorenz observed, like power steering. It is the controlling center of our personalities just because it offers us *enlightened self-guidance*. It derives its power to guide from its ability to satisfy our competing needs and urges in an integrated, farsighted way.

108. *Our identity is a product of our biological heritage (our genes) and our social heritage (through the processes of socialization), as reflectively integrated by our autonomous wills.* The identities of the self and the world develop together in a dialog. On aspect of this was noted by Piaget: awareness begins at the margin of the self and the world, and works inward to both via their dialog. Thus, our awareness of the world and the ourselves progress together hand-in-hand. Language is a tool especially well suited to this task mastering our psychological and social potentials together.

Another aspect of how the identities of self and world develop together is that society shapes our self-identity. All societies shape individuals' character by channeling expressions of their instinctual nature in various ways. As part of this socialization process, our self-images are formed in large part from society's appraisals of us. But as individuals mature, they then turn back on their world and creatively reconstruct it. This interaction is even true to a degree of our relationship with the natural world. Our genes and natural environments shape our identity, but we have increasingly turned back upon both with our technologies, medicine and genetic engineering, and have creatively reconstructed them to varying degrees.

109. The functional value of an entity is its utility in a hierarchically organized system of means and ends. These means and ends converge hierarchically upon an ultimate value, namely, the continuing existence of the system as a whole. As noted at the start of the chapter, life emerged when spontaneous chemical reactions were organized into functional hierarchies built up of purposive systems, all of which served the characteristic life functions of self-maintenance and self-replication, and all of which converged on the overarching function of self-perpetuation. Self-perpetuation is so functionally valuable in biological evolution because of natural selection. It is this selection process that is the source of value within biological evolution. In the theory of natural selection, those best adapted to their environments are predicted to survive best, thus spreading their adaptations to their progeny. The ultimate selection value of these adaptations is their survival value, their utility in self-perpetuation. Success at this is thus said to constitute biological progress.

110. Some may feel that life and its flourishing are of inherent value, and that its stunting is inherently bad, so much so that even simple, insentient life is better than no life at all. For example, even if a forest somehow remained absolutely devoid of all sentient life, it might still be seen as inherently precious, and its arbitrary destruction might still be seen as wrong.

111. Happiness and pleasure are the phenomena most often cited as being inherently desirable in the theory of value. They will serve below as bases for a theory of progress in mental evolution.

112. At least in man, happiness comes from the fullest realization of our basic natures in the most harmonious way, and in accordance with our life ideals. This requires balancing social duties, animal passions and creative aspirations. A crucial part of this is taking pleasure in life (it is difficult to be happy if we have little enjoyment in our lives), but this is not the whole of it (we can divert ourselves with pleasures, but still be unhappy if we feel our lives are an overall failure). Progress here would mean increasing happiness and decreasing unhappiness.

113. Herrick uses a biological method to justify the value of mental and social life. Much like Huxley and Thoday, he defines progressive evolution as "change in the direction of increase in the range, variety and efficiency of adjustment of the organism to its environment, resulting in more efficient control of behavior and of surrounding conditions." He maintains that this involves greater complexity, flexibility and intelligence. This is the basis of his conclusion above.

114. Midgley isn't concerned explicitly about the importance of mental life *per se*, but rather about the importance of fulfilling one's characteristic potentials or nature. Still, when dealing with species with flourishing mental lives, her approach would probably tend to converge upon analyses of what they consciously find to be fulfilling, i.e., upon analyses of their mental lives. Her approach seems to resemble the approaches outlined above on inherent value. The latter say that what's really important in evolution are the inherent values of life or pleasure. These are plausible views, but some would reply that functional values can also have real value independently of these inherent values.

115. Midgley illustrates this with the *War of the Worlds*, in which H.G. Wells depicted Martians as superintelligent, but brutally calculating beings without compassion. They sought to cold-bloodedly exterminating mankind. Of course, humans have themselves used the same cold-blooded calculations upon other species, as well as upon himself in the name of ideology, profit, etc.

116. Midgley actually mentions criteria, like efficiency at survival, which do cut across species in the realm of biological progress. But she ignores them in her relativistic conclusion because what's really important in her mind is "what each of them does while it survives."

117. Some may well question the attribution of pleasures or mental lives to insects. I have no quarrel with this. But they might ask themselves on what basis they attribute experience to other humans, and on what basis they deny it to certain animals. The trick is to avoid slipping from skepticism about experiences in other animals to skepticism about experiences in other humans.

118. This approach seeks to evaluate levels of enjoyment simply in terms of their quantity, not their quality. The point being made is that imagination and culture enrich life in terms of the amounts, not the qualities, of pleasures made available. J.S. Mill tried to argue that quality of pleasure is more important than quantity, on the grounds that the pleasures of the intellect, imagination and feeling are superior to basic, animal pleasures. But few have found this convincing (for example, is an opera really superior to an orgy, even when they may yield equal amounts of pleasure overall?). By contrast, the argument above points out that human enjoyment incorporates animal pleasures, but also extends and enriches them through culture and imagination, thus enhancing the overall amount of enjoyment that can be had from life.

Mill's argument here inadvertently moved beyond hedonism (for he grades pleasures by an external standard) toward a more Aristotelian position which makes fulfillment of our specifically human faculties the standard of good:

few human creatures would consent to be changed into any of the lower animals, for a promise of the fullest allowance of a beast's pleasure; no intelligent being would consent to be a fool, no instructed person would be an ignoramus, no person of feeling and conscience would be selfish and base, *even though* they should be persuaded that the fool, the dunce, or the rascal is better satisfied with his lot than they are with theirs.

119. In citing intelligence as a route to progress, we must, once again, reckon with Midgley's keen insights and criticisms. As noted above, she is wary of intelligence, at least on its own, as a mark of advancement. She rightfully notes that high intelligence can grow woefully out of touch with emotional needs, and it can become coldly calculating. Thus, we should focus not just on intelligence, but on mentalities as wholes in judging progress. Enriched mentalities have both enriched emotional lives and greater intelligences for managing and fulfilling them. Intelligence and emotion are in fact interdependent: e.g., man's mind is inhumane without sensitivity to emotional needs, and anarchic without intelligent control.

120. For example, crowding brings higher stress, yet solitary animals still compete for mates and territory, often just as violently as social creatures. Also, society reduces both independence and privacy, yet even solitary creatures are often bound by some interpersonal ties and needs that encroach on their independence and privacy, and societies do allow for individual privacy and independence. The differences are matters of degree.

121. Even if solitary lifestyles are held to be just as rewarding as social ones, we can still objectively

compare, e.g., solitary reptiles and solitary mammals in terms of the richness of their experience and feelings. Again, species-characteristic fulfillments needn't entail relativism.

122. Whatever our putative advances may be, they oughtn't be seen as an excuse to denigrate or exploit other, less advanced creatures. Whether or not we accept relativism's suggestions about progress, one of its truly valuable messages is that humans should come to realize the deep-rooted brotherhood of life, and learn to *respect* other species as sensitive, precious beings. Through the insights of provocative thinkers such as Midgley, we're hopefully starting to see that with our superior powers to master our world go real obligations to respect and safeguard it: not just for our own good, but for the good of all. On this, the most important point of all, relativism is well taken. Axiological inquiries into what's valuable in evolution can perhaps be of help here, too, by inviting us to think about what makes species precious.

123. This integrated psychological, sociological and biological approach was especially useful in our analysis of imagination. Here we tried to synthesize emphases on the socio-economic determinants of ideas (as emphasized by, e.g., Marx's dialectical materialism) with emphases on its biological determinants (as emphasized by, e.g., E.O. Wilson), with emphases on the autonomy of ideas. Concerning the latter, we saw, for example, how ideas give purpose and meaning to our lives, ignite our imaginations, and structure broad areas of human activity, including economic areas. We also saw how that while ideas are rooted in instincts and institutions, they develop according to their own dynamics and logics (like viruses), and thereby take on lives of their own. Finally, we saw how imagination gains distance from its social and biological roots through the creative mediation of the autonomous world of ideas, thereby making human action less impulsive, more planned and autonomous, and thus freer. In these ways, the human mind realizes the highest potentials of the mental, social and biological evolutions which its tripartite structure embodies.

124. The same can be said for our account of civilization: its emergence can only be fully understood by looking at the integrated evolutions of our intellect, institutions and instincts (but no existing account of civilization does this, unfortunately). Other examples of this integrated approach were in our account of the nature of science (as both institutionally open and psychologically rational in nature) and explanations for why moral development lags behind intellectual development (due to social, intellectual and emotional factors).

OVERALL SUMMARY AND CONCLUSION

BETWEEN BEASTS AND GODS

CHAPTER 6

OVERALL SUMMARY AND CONCLUSION: OUR IMAGINATION PUTS BETWEEN BEASTS AND GODS

In conclusion, let's draw together the main points covered above. The aim of this work has been *to gain a more comprehensive understanding of imagination by looking into the evolving synergies between its roots, from which its structures, powers and limitations derive*. This comprehensive framework for understanding imagination has synthesized previously separate psychological, biological, sociological, cross-cultural and historical perspectives. This framework was developed by systematically exploring the history of evolving synergies between imagination's *psychological roots* (images, intuitions and symbols) and *sociobiological roots* (instincts and institutions), for again it's from these that the structures and dynamics of imagination arise.¹

THE PSYCHOLOGICAL ROOTS OF IMAGINATION

Part one argued that the psychological roots of imagination are *independent* phenomena engaged together in a dynamic, evolving *synergy* that can be fully understood only in light of its evolutionary *history*, and that constitutes *imagination* in its core sense of creativity.

So the first argument was that these psychological roots are *independent* phenomena. Again, these roots are *images, intuition and symbols*. We began with their independence so as to prepare the way for later arguments that their relationship is synergistic (for a synergy consists of genuinely independent elements joining together to do what they can't do apart).

We started with the independence of images and intuition (non-inferential thought) from each other. There was little need to defend the independence of intuition, and thought in general,² from images. For not only is much thought imageless, but also the more deliberate forms of imagery are invoked by thought and get their meaning and direction from thought.

By contrast, the independence of images from thought was defended at length against the common view that images are mere objects of thought or language – not observable objects existing independently of thought or language as describable mental pictures. This defense considered everyday experiences of entertaining and even examining images in our minds, as

well as experimental evidence of our ability to actually rotate, scan and describe mental pictures. We also saw how attempts to reduce images into purely abstract, verbal, digital terms prove to be cumbersome, inefficient ways of processing pictorial representations. Some mental tasks just seem inherently better suited to imagery than words (e.g., mentally counting the windows in your house), while others seem better suited to words than images (e.g., arguing about budgets).

Next, the independence of symbolism and thought was defended on the grounds that their roots are at least partly separate. Infants and beasts exhibit a preintellectual form of language, and a prelinguistic form of thought. Also, thought and language can be impaired independently of one another. Furthermore, languages are at least in part elaborate cultural artifacts which thought must struggle to internalize, and struggle to express itself through. Thought isn't a series of words – it is in fact often difficult to put into words.

This independence of thought and language was defended not only at the level of their early roots, but also at the level of their mature relationship. Here Piaget neglects the full role of language upon thought, and often seems to treat language as a mere outgrowth of, and mere vehicle for thought. In fact, language transforms thought profoundly at its highest stages. At the other extreme, Whorf claims that different languages compel different kinds of thought. But research shows that language influences different kinds of thought in different ways and degrees. Furthermore, thought is far too dynamic and creative to be imprisoned by thought. Language is neither a passive vehicle nor an imprisoning cage for thought. Their relationship isn't as one-way as these lopsided determinisms suggest.

Having thus defended the independence these roots, the second topic in part one was then addressed, namely, how these roots are engaged in a creative *synergy* which transforms them and gives them powers they lack apart. We saw how images and symbols assume an intermediate role between the senses and thought by re-presenting the sensory world in its absence to thought. We can conjure up images and words for absent things, so as to manipulate them in thought.

Yet the mediating roles of symbols and images differ. Symbols are abstract and general, and represent things by mere convention, while images are concrete and particular, and represent things by vivid pictorial resemblance. Images thus excel at representing detailed spatial, pictorial scenes, which is a cumbersome task for language. Symbols excel in precisely and flexibly communicating generalized information, abstract reasoning, and narrations of events, which are cumbersome tasks for images due to their inherent ambiguities and lack of effective syntax.

In this synergy, thought gives meaning and direction to symbols and images (which are inert on their own), while symbols and images act back on thought in their own special ways. Here images bring concreteness and spatiality to thought. But imagistic thought is limited by its concrete, self-absorbed, precritical nature. Thus, the need for symbolism, which frees thought from concrete images by fostering more abstract, systematic and coordinated outlooks. But

highly symbolic thought can be too abstract and remote from experience, and thus relies on concrete images to help it rehearse actions, assess feelings, etc. in clarified, concrete ways.

In this way, this synergy of thought, images and symbols produces imagistic thought, which is concrete and intuitive, and symbolic thought, which is abstract and systematic. These two often take the form of imagery and reason, respectively. We saw how their synergy represents the very pinnacle of creativity. Just as imagery alone tends towards reverie, so reason alone tends toward formal sterility. But the richness and vitality of imagery can be synthesized with the rigor and discipline of reason to produce guided flights of imagination, which can soar into whole new realms of possibility. However, the proper formulation of this synergy is a matter of ideological debate. Romantics and rationalists can be reconciled here by recognizing that reason is a source of rigor, while simple intuitive thought is at the core of creative insight. Still, on its own, intuition is subjective, and stands in need of reason and the senses for its objectivity.

The third argument in part one was that it is this synergy of intuition, images and symbols that constitutes *imagination* in its core sense of creativity. Attempts to define imagination in terms other than creativity have focused on, e.g., images and intuition. But while images and intuition serve as roots of imagination (as just noted), on their own they simply don't do justice to all that's typically meant by "imagination." The only way of actually embracing within a single, coherent concept all that's typically meant by "imagination" is by equating imagination with creativity and then treating imaging, intuition, etc. as components of imagination on the grounds that they are psychological roots of creativity. This treats imaging, intuition, etc. as narrow senses of imagination, and creativity as the broadest and most comprehensive sense.

The fourth argument in part one was that this creative imagination can be fully understood only in light of its evolutionary *history*. The arguments above imply that imagination is a multi-faceted complex of dynamic, evolving synergies. It has no fixed, ultimate nature. Instead it's an evolving set of variably interrelated phenomena which can be fully understood only in light of their histories. The powers and dynamics of imagination are open-ended, not just in their past and present, but also undoubtedly in their future. Indeed, the creative nature of imagination comes from its ability to constantly build upon itself, constantly examine and transform its existing structures and methods, and continually master its inner potentials.

Any adequate account of creative imagination must therefore ultimately treat it as an emerging, historical phenomena, whose powers, conceptual reach and inner dynamics are constantly expanding. This is a shortcoming of current theories of imagination. They stem primarily from phenomenology and analytical philosophy, whose approaches are non-historical – being based as they are upon introspection and linguistic analysis, respectively. They speak misleadingly of "the" nature and relations of imagination, thought, images, language, etc. in static, invariable terms. They seem to assume, like the traditional epistemologies, that thought is

fundamentally the same everywhere. Yet thought has shifted to increasingly expansive levels of organization, each with greater conceptual power and mobility, thus leading humans to greater powers for self-awareness, self-mastery, and free will.

THE SOCIOBIOLOGICAL ROOTS OF IMAGINATION

Since part one ended with the conclusion that imagination must be understood historically, part two focused on *imagination's unfolding history*. It turned from examining purely psychological factors, to examining the potent *sociobiological* forces that drive imagination's history and forge the psychological developments noted in part one. These sociobiological roots of imagination are instinctual and institutional. They are the external roots of imagination, for they powerfully shape imagination from the outside rather than constituting it from inside (as its psychological roots do). In general, then, part two studied our social, biological and mental evolutions, so as to delineate the evolving nature and role of imagination within them.

Paralleling part one, part two tried to show that these sociobiological roots are *independent* yet interactive phenomena engaged in dynamic, evolving *synergies* together. This involved trying to reconcile the stubborn territoriality and competing ideologies within biology, sociology and psychology.

Concerning the *independence* of these roots, it was argued that neither social, biological nor mental evolutions are epiphenomena of each other, as lopsided determinisms suggest. Instead each has its own autonomous dynamics. They flourish together by helping to unlock each others' inner dynamics. In this way, they mutually realize their fullest evolutionary potentials. Outside their synergy, their horizons are limited.

We began with the independence of social and mental phenomena from each other.³ Psychological reductionism, which assimilates social to mental phenomena, was criticized for failing to see that societies are vast historical edifices whose origins, purposes and dynamics are quite obscure to individual minds. Sociological (or "social") determinism, which denies the autonomy of mental from social phenomena, was criticized for treating individuals as extraneous puppets that merely release the potentials of vast, impersonal institutional forces. In fact, these potentials aren't functions of institutions alone, instead they're functions of the synergy of institutions and individuals. Without individuals, institutions are empty, petrified shells; without institutions, individuals are blind and stray.

Sociological determinism was also criticized for neglecting the role of ideas in history. Ideas aren't just epiphenomena of socio-economic forces, for they tap into deep instinctual drives, ignite our imaginations, give meaning and purpose to our lives, and structure broad areas

of human life, including economic areas. Furthermore, while ideas are partly rooted in institutions, they nonetheless develop according to their own dynamics and logics (like viruses), and thereby take on lives of their own. The history of mathematics is an obvious example. The autonomy of minds from institutions was also defended by looking at the mutual evolution of minds and societies. Here culture, intelligence and individuality together became ever bolder and richer in civilization, thus producing autonomous, rational individuals.

We then turned from the sociological to biological. Biological determinism, which stresses biological over social factors in shaping behavior, was criticized for overlooking various facts: the existence of cultural diversity, the impairment of individual development in the absence of socio-cultural contacts, and the fact that cultures evolve via their own dynamics which aren't reducible to biological principles (the history of economies, mathematics, etc. can't be ascertained solely from biological facts). The autonomy of culture from biology was also defended by tracing their evolving relationships. Here biological determinism is more applicable to the blindly instinctual invertebrates, whose behavior is stereotyped and preprogrammed, than the higher vertebrates, whose behavior is voluntary, flexible and insightful.

We also examined the antithesis of biological determinism, namely, cultural determinism. It claims that culture has usurped biology in the shaping of our behavior. Twin studies suggest otherwise, as do deep and pervasive similarities in behaviors across human cultures and related animal species. Criteria of innateness such as pervasiveness across cultures and species, resistance to cultural curbs, and (sometimes) mediation by hormonal factors in development, suggest innate bases to sex, parental love, altruism, selfishness, aggression, fear, etc. This suggests that rather than culture having superseded instincts, there are instead pervasive innate influences on behavior. Indeed, central aspects of culture, itself, including political tempers and religious and moral conduct, show signs of innate influences.

Having thus argued for the autonomy of mental, social and biological phenomena, it was then argued that their true relationship is *synergistic*, in that it consists of genuinely independent elements joining together to do what they cannot do apart. In the synergy of biology and culture, biology promotes culture by promoting intelligence and sociality, while intelligence then opens up real alternatives in the cultural realization of our innate nature.

Similarly, in the synergy of imagination and culture, institutions landscape and stock our minds, while our minds then work back upon institutions, adapting and maintaining them. As minds and cultures steadily built upon each other, both became richer and more diversified in their contents, more hierarchically integrated in their structures, broader and more ambitious in their horizons, and more systematically coordinated in their operations. In this process, we traded sluggish dialogs between traditional cultures and drowsy imaginations for dynamic, progressive dialogs between more civilized cultures and rational imaginations.

This intensifying interaction between the three evolutions resulted in a *shifting center of gravity* between them, from biological, to social, and finally to mental evolution. These are the heydays of instinct, tradition, and imagination, which are divided by the advent of settled life and civilization respectively. In this way a more equitable relationship gradually emerged between these forces. This represents a progressive liberation of the mind in evolutionary history, first from biological determinism, and then from cultural determinism. Humans were lifting themselves from their submergence in nature and tradition, and were beginning to imaginatively reconstruct their natural and social worlds according to more conscious designs. They were emerging from the world of blind necessity into a world with wide-open horizons of possibility.

It was further argued in part two that the civilized, rational life that we created in this process may represent real *progress* in human history, as well as in evolution as a whole. This is because reason and civilization give us more organized and efficient means of achieving basic needs, greater power over our destinies, and more enriched ways of enjoying life.

The metaphor suggested by all this is that of mental evolution being nurtured and nested within our social evolution, and in turn, our social evolution being nurtured and nested within our biological evolution. As they flourished, our societies and then our minds left these nests and embarked upon autonomous lives of their own. Yet the mutual developments of all three remained deeply intertwined and interdependent. Indeed, the civilized mind represents the most intense interactions of mental, social and biological evolutions in all of history, due to the profound ways in which these evolutions mutually restructure each other here.

Human biological and cultural evolution thus eventually produced an imagination powerful enough to actually reconstruct its natural, social and mental worlds so as to best realize the potentials of all three. The rational, civilized mind, with its tri-partite structure, not only embodies its mental, social and biological heritages, but it also realizes the mutual potentials of all three evolutions most fully. Our increasingly autonomous imaginations have come in this way to act as pathfinders, exploring the possibilities of human mentality, sociality and biology.

We also saw, however, that this shifting center of gravity between mental, social and biological evolutions didn't wholly emancipate the mind from its socio-biological roots. As in any synergy or marriage, these elements *constrain* each other as well as promoting each other.

To begin with, imagination's employment is constrained by *institutions*. Society is a complex, intricately adjusted system maintained by forces we can't fully comprehend and can't hope to replace. Individual's ideas thus tend to become building blocks in an overall process whose ultimate design they can only partly fathom and affect. This overall design is determined as much by the system requirements of societies as by our conscious designs. This suggests that the best civilization is a dynamic and open one, which experiments and explores, but at the same time respects its customs as embodying the silent wisdom of the ages, and which shows intellect-

ual responsibility by recognizing the limitations as well as the powers of imagination, and by eschewing radicalism and zealotry.

Imagination's use also seems to be constrained by our *biology*. Despite their differences, world religions and Marxism share a strong commitment to altruism. But such an ideal seems too lofty for human nature. Though our society is based somewhat on altruism, it isn't blindly altruistic, like insect societies. Our society is strongly and innately based on self-interested cooperations, like all mammalian societies (where blood-relatedness is low). This seems especially true in civilizations, where so many people are mutual strangers. While we readily labor for our own interests, we tend to sacrifice for others to the degree that they're close to us.

The road to civilization also involved the *domestication* of our biology. Our rapid social growth put great stress upon our natural balance of instincts, creating dangerous combinations of crowding, weaponry, territoriality, greed, rivalry, ideology, patriotism, etc. We responded to these challenges with both strict social controls and our intelligences. But we've vacillated over the proper balance between these two. Here, the "authoritarian" view is that human nature is ferocious and needs disciplining by strict government. The "liberal" view is that human nature is benevolent and simply needs educating by enlightened government. The "anarchic" view is that human nature is benevolent but perverted by government and civilization as a whole.

Today, we recognize that individualism and liberty are fountainheads of progress, so we try to solve social problems by educating individuals and seeking their voluntary cooperation, as the liberal view stresses. This approach seeks to transcend the old tribalism with a new, civilized ethics which emphasizes universal moral responsibilities, tolerance of nonconformity, and more reflective, integrated personalities. Still, urban societies couldn't operate without considerable social discipline with strong mechanisms enforcing law and order, as the authoritarian view stresses. In this spirit, "communitarians" attempt to balance individual liberties with community responsibilities and self-discipline. The anarchic view rejects this synthesis of liberty and authority, but this runs the real danger of anarchy in the full, violent sense of the word.

This domestication of humans also involved the *rational reconstruction of the mind*. It involved the reconfiguration of our ancient animal mind, dominated by emotion and intuition, into a more rational, disciplined and civilized form. This disciplined, coordinated control of both our emotions and our intuitive thought processes created rational wills and rational imaginations. Thought and action became less impulsive, and more planned and autonomous. This is the basis of growing human freedom (as self-determination), for we gained distance from our social and biological roots by entering the human world of ideas, which has its own autonomous logics. This also helped to transform our self-identities, for these identities were now consciously shaped by our rational wills reflecting upon, and integrating, our social and biological heritages into enlightened directions. This dialog between our instincts, our institutions, and the inner

agency of our will (or self) is internalized within our minds in the form of the tripartite psyche.

IMAGINATION IS WHAT MAKES HUMANS SO UNIQUE

In the end, this is the story not just of our unfolding imagination, but also of our growing uniqueness. Human nature extends and reorganizes pre-existing biological traits, but in powerful ways that have advanced greater intelligence, cooperations and culture. On this basis, our mental and social evolutions produced more powerfully organized and systematically coordinated minds and societies, culminating in the emergence of reason and civilization. The latter distinguish us from beasts, but these traits evolved, as just noted, through extensions and reorganizations of pre-existing traits. Numerous other animals are intelligent, social and cultural to varying degrees.

But there's one crucial step on the road to civilization and reason that isn't just a matter of extending and reorganizing pre-existing traits: *symbolism*. Symbolic language is perhaps our single most unique trait, in that our use of words has only slight precedent and our grammar has virtually no precedent at all.⁴ Symbolic language is the bridge that leads from the confined world of beasts into the wide-open world of ideas and possibilities. Only we have crossed over it.

Symbolism profoundly transformed our social and mental evolutions. It provided a more abstract, systematic medium for thought. It made action more reflective, voluntary and planned. It also brought minds and societies closer together than ever before, by externalizing thought and internalizing culture. It helped to produce more organized, resourceful and enriched minds and societies, culminating in civilization and reason. Symbolism is a unique tool in that it's turned inward to master ourselves (our inner potentials) as well as our outer world. It allowed us to reconstruct our mental, social and natural worlds so as to best realize the potentials of all three.

Yet, as we've seen, symbols on their own are dead and inert: thought is required to give them life, meaning and direction. This is why, in the end, it can be said that our *symbolic imagination* is what makes us so unique. Animal thought consists of concrete images and intuitive associations suffused with emotion. Our symbolic imagination retains the richness and vitality of thought, but introduces abstraction, organization and coordination, thus emancipating thought from the concrete world and launching it into the world of ideas and possibilities.

So, in the end, this work has outlined not just the unfolding history of our imagination, but also the unfolding story of our distinctiveness. What makes us so distinctive is that our social and biological heritages (as described in part two) have forged a mentality which synthesizes images, intuition and symbols into a symbolic, rational imagination (as described in part one). Our unique history is the story of the efflorescence and triumph of our creative imagination, which has allowed us to master both ourselves and our world.

But our imagination is not just the source of our distinctive powers, but also of our distinctive limitations. We have lifted our eyes from the limited perceptual horizons of beasts and gazed out into a conceptual universe of ideas, whose infinite possibilities are the source of not just our free will, but also of our peculiar *predicament*. The human predicament is (to take liberties with thinkers like Kant and Aristotle) that due to the nature of our imaginations we lack both the sure instinctual guidance of beasts and the omniscience of gods, and are thus left in between in a world of eternal conflict, intractable dilemma and bewildering possibilities.

Perhaps the greatest predicament of all opened up by our possession of imagination is that *we alone can choose who and what we are*. We alone are faced with the perplexing question of how to choose what we want to be – of how to best realize our potentials and how to best fulfill our nature. In large part this is a matter of how to balance the contrasting parts of human nature. Ethically it is a predicament of how to balance our egoism and altruism. Religiously, it is the predicament of how to balance our spiritual and animal needs. Epistemologically, it is the predicament of how to balance our senses, intuition and reason.

“Man sails a boundless and bottomless sea; there is neither harbour for shelter, nor floor for anchor, neither starting-place nor appointed destination.”⁵ It is through imagination that we consciously attempt to chart our course on this voyage. But the guidance of imagination alone on this boundless, bottomless sea is at best tentative and partial. Institutions embody the wisdom of the ages, and are vital guides because of this. But institutions on their own are blindly backward-looking. Instinct embodies millions of years of adaptations, and gives basic purpose and direction to our life. It can be ignored only at our peril. But its guidance is often conflicting and inadequate for the complexities of the human journey. It has been the contention of this thesis that guidance can not come from either alone, but rather from the genuine dialog of all three.

So even in this age of burgeoning faith in our imagination, it alone cannot be our beacon. We must look instead to the overall dialog within which imagination has developed and operated. Today’s rationalists extol social planning and collective purpose, and say we must reason our way forward to a bold, new future. But as just noted, knowledge is elusive and comes, arguably, not from imagination alone, but from the subtle dialog of ideas, customs, and instincts.

Romantics and existentialists extol individual freedom and say we must choose alone for ourselves. But freedom, too, may arise not from imagination alone, but also from this dialog with institutions and instincts. For it is from this dialog that human autonomy has grown and is nourished. Arguably, imagination guides from within, not outside this dialog, and by the harmony, not the blind opposition of individual spontaneity and institutional purposes.

If any one motto sums up the modern mentality, it is the call, “dare to use your own imagination!” The question is how much faith to put in the visions of our imaginations, and how much to rely on time-tested wisdom. Liberals tend to put more faith in our enlightenment and

imagination when faced with the questions above about how to best control ourselves and where to turn for guidance in navigating our lives. Conservatives trust more in the deeply rooted authority of custom here. Both have a point.

One way of reconciling them, as we've seen, is with a dynamic and open society which experiments and explores, but at the same time respects its customs as embodying the silent wisdom of the ages. Such a society shows intellectual responsibility by recognizing the limitations as well as the powers of imagination. It seeks to experiment, but on a small scale initially, and it eschews both central planning and zealotry. Such a society also emphasizes the necessity for controlling ourselves primarily by education, enlightenment and voluntary cooperation. But it also recognizes the need for vital mechanisms to enforce law and order, as well as a disciplined balance between individual liberties and community responsibilities.

But whichever one's views are here, in daring to use our imaginations fully, it is surely wisest to realize the limitations as well as the powers of our imaginations. This is why this work has focused so heavily on the *natural history of imagination*. It is in motion within their natural surroundings that complex phenomena like imagination best reveal their true natures and dynamics. We have studied the various evolving synergies which constitute, promote and constrain imagination in order to reveal the ways in which imagination has actually operated in our history, and what its true powers and limitations are, as well as how it can most fruitfully be used in the future. As noted throughout this work, this is, unfortunately, a perspective largely neglected in other philosophies of imagination, for they overlook *the roots of imagination*.

CHAPTER 6 NOTES

1. This more comprehensive approach was developed to promote a broader understanding of imagination in general. But it is also usefully applied above to specific problems. It was useful in reconciling idealism, dialectical materialism and biological determinism, by showing how mental, social and biological forces mutually determine our history. This comprehensive approach was also useful in explaining the rational reconstruction of the mind: it was explained psychologically in chapter three as a synergy of symbolism and imagery, sociologically in chapter four as an integral part of the evolution of civilization, and biologically in chapter five as part of the domestication of human nature. This comprehensive approach was also used to explain the emergence of civilization (as a product of the mutual evolutions of our intellect, institutions and instincts), and the nature of science (as both institutionally open and psychologically rational in nature) as well as the lagging of moral development behind intellectual development (due to social, intellectual and emotional factors).

2. We focused on *intuition* because it's one of the roots of imagination. But as we saw, as intuition

interacts with symbols and images, it is transformed into other forms of thought. Thus we also looked beyond the relationship of symbols and images with intuition, to their relationship with *thought in general*.

3. We saw how the fact that one position is a determinism and the other is a reductionism doesn't mean that there aren't real points of conflict between them that can be examined. Their competing claims can actually be reconciled by pointing to properties (i.e., powers for self-determination) unique to both minds and societies which rule out both a lopsided determinism and lopsided reductionism here.

4. While our syntax is indeed unique, in some theories it arose purely from our higher intelligence, which just differs in degree from that of beasts. Nonetheless it still represents a unique discovery of our intelligence alone which has transformed our minds and societies into a unique rational, civilized form.

5.Oakeshott 1962:127.

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