

**Openness to Argument: A Philosophical
Examination of Marxism and Freudianism**

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Abstract

No evangelistic erroneous network of ideas can guarantee the satisfaction of these two demands : (1) propagate the network without revision and (2) completely insulate itself against losses in credibility and adherents through criticism. If a network of ideas is false, or inconsistent or fails to solve its intended problem, or unfeasible, or is too costly in terms of necessarily forsaken goals, its acceptability may be undermined given only true assumptions and valid arguments. People prefer to adopt ideologies that (i) are logically consistent, (ii) are more truth-like and of higher information content than their rivals, (iii) are systematically organised, (iv) solve their problems better than their rivals, (v) do not contain unfeasible demands, and (vi) do not contain uneconomic demands. Truth and validity therefore act as Darwinian-like filters on ideologies.

Using Popper's notion of situational analysis and with reference to Darwinian evolution, considered as a special case of the former, and Bartley's theory of comprehensively critical rationalism I argue that a propagandist cannot guarantee his message or his movement from sound criticism. All positions are in a methodological sense open to argument. Moreover, the logic of a propagandist's situation constrains him into making his message and himself open to criticism in order to maximize its chances of being propagated through the population. But he then loses control of the message in two respects. Firstly, his audience are disposed to select from the competing ideas they encounter those that satisfy (i) to (vi) because of man's evolutionary history. Secondly, he cannot guarantee protection from criticism even a privileged section of his message because he cannot predict in a systematic way what logical repercussions each protective reformulation of the ideology will have on other sections of the ideology and what criticism the ideology will encounter. He cannot do the latter because of certain logical properties of theories that endow them with unfathomable depths.

Marxism and Freudianism serve as case studies, especially for the analysis of Popper's notion of the immunizing stratagem, a methodological/logical device that is supposed to save theories from criticism. "Immunizing stratagems" either abandon the ideology they are meant to protect or seriously lower its chances of being reproduced.

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Introduction

1. The Question of Definition.
2. The Problem.
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The central problem of this thesis is openness to criticism. Many works on ideology have been concerned with this question, but the question is not confined to the behaviour of ideologies. The attempt to evade criticism is familiar to us all. "Its like talking to a brick-wall" and "We will have to agree to disagree", are figures of speech that allude to this common experience and the assumption that some people are closed to criticism. If the answer to this question is so broad in its implications, why have I focused on ideologies? Ideologies are especially interesting because they embody some of the more intricate and abstract devices for evading criticism, because they allow us to explore how evasive parts of a doctrine may affect other parts and because we can study how they influence the long term future of the doctrine. Evasive moves in everyday conversations are too fleeting to permit a study of the effectiveness of evasion of criticism in the long term.

1. The Question of Definition.

Most works having a bearing on ideology begin with an attempt to define ideology. My method will differ significantly from this definitional approach, in line with an internal criticism of the work of Karl Popper and W.W.Bartley, III. It is therefore appropriate that I begin with a digression on definition. There are many definitions of the word "ideology" and there are many problems that writers on ideology are interested in solving. Where should one start: with a definition or with a problem? In 1987 Daniel Bell, author of The End of Ideology, gave a talk on ideology at the London School of Economics and Political Science. In his talk Bell ran through a long list of diverse definitions of ideology given by various writers. At the end of the list, almost sighing in despair, Bell asked: "How are we to find our way through this bramble bush?" D J Manning expressed a similar worry, pointing out that there is no consistency in the way the term is employed from writer to writer, and there is no recourse to the conventions of ordinary language. In the absence of the criterion of ordinary language, Manning says, there is a danger in adopting a stipulative definition. (Manning. Post Script to [1980], page. 114.) The answer to Bell's question and to Manning's worry is to look at the problems that the various writers were trying to solve. Even stipulative definitions lose their arbitrariness when tied to the solution of a problem. It may be hard to see what these problems were; for example, a writer may simply be confused and not have a substantial theoretical problem. Nevertheless, this seems to be a feasible path through the bramble bush.

This thesis assumes that problems have prior status to definitions: that is, the problem at issue must first be stated before we tailor our vocabulary to its solution.

Even then the definitions we shall adopt will not be the solution to our problem, but simply a concise and clear way of formulating a theory, and it is the theory that is regarded as the solution. Robinson adopts a similar approach to definition in the treatment of ideology. In a criticism of John Plamenatz's book Ideology [1971]. Robinson reproaches Plamenatz for his failure to distinguish between investigating the meaning of the term "ideology" and investigating its referent. (T J Robinson. "Ideology and Theoretical Inquiry", in Manning, [1980].) Though helpful, Robinson does not diagnose the philosophical malady that makes the search for definitions so popular. The malady can be traced to the Aristotelian idea that we can intuit the real nature of something through the attempt to give it an essential definition. To understand why this is a futile method one has to examine the relationships between definition, problem and theory. ¹

2. The Problem

Western culture holds in high esteem the give and take of open debate. This seems to have originated with Thales, whom Popper argues was the founder of the Ionian school of philosophy, the first to encourage criticism of the master. Popper argues that before Thales cosmology or philosophy was taught by dogmatic schools. These schools had the function of preserving the doctrine of the founder or first master. New ideas were not admitted, and their inventors were dismissed as heretics. This type of school, Popper argues, is the general rule in all civilizations. However, Popper says, Thales allowed one of his pupils, Anaximander, to criticise his own theory. Moreover, since this went against tradition, it seems likely that Thales must have actively encouraged his pupils to criticise his theories. This would explain why a mere two generations later this critical attitude is explicitly formulated in the fragments of

Xenophanes. (Popper. "The Beginnings of Rationalism". Chapter 5 of [1963].) It may be conjectured that this liberal attitude to criticism was made more popular by the rise of science, which the Ionian tradition, revived in the Renaissance by Galileo Galilei and others, made possible. But western culture also seems to have produced systems of ideas that scorn open debate, ideas that seem impervious to criticism or counterevidence and seem to have gained evangelistic strength through this imperviousness. The classic examples, for Popper at least, are Marxism and Freudianism. Bartley focused his analysis on Christianity. Is this imperviousness to criticism real or merely apparent; is it absolute or a matter of degree? This is the general problem that this thesis addresses.

My answer will be that the imperviousness we see is real but merely a matter of degree. Of course, it may be said that writers have exaggerated for rhetorical effect, not meaning to attribute absolute imperviousness. Some writers undoubtedly fall into this bracket. However, many writers have attributed absolute imperviousness to some ideas and their adherents; and those that have not have often overestimated the degree to which ideas and their adherents can be insulated from criticism. Those attributing absolute imperviousness to certain systems include Bartley, Popper, D J Manning, Leszek Kolakowski, Knox, Eric Hoffer, Gustave Le Bon. ² It must be noted that it is not my intention to point an accusing finger, but rather to investigate what seems to be an interesting problem. A theoretical problem and an associated position on that problem have an autonomous existence and may be interesting even if they cannot be attributed to any one person. Some popular theories are trivial; some straw-men are profoundly interesting. For example, Popper's criticism of historicism was often criticized because it was thought that the theory that Popper examined could not be attributed to

anyone. Nevertheless, the insights that emerged through Popper's criticism of a somewhat contrived theory made the enterprise worthwhile. So perhaps the question is not whether the above writers were exaggerating or not, but rather, taking their statements at face value, to what extent can their statements be regarded as true and helpful in solving the problem of the survival of an ideology in the face of criticism.

It is helpful to think of this problem from the point of view of the propagandist : how can a propagandist preserve his message intact against criticism, and ensure its propagation and the recruitment of new adherents? Can a propagandist protect his message from criticism by relying on clever formulation or psychological/sociological manipulations, and thereby guarantee it against losses in credibility and propagation? Can he do what Leszek Kolakowski supposes possible when he asserts that:

Not only in the "socialist bloc", where the authorities used every means to prevent information seeping in from the outside world, but also in the democratic countries, the Communist parties had created a mentality that was completely immune to all facts and arguments 'from outside', i.e. from 'bourgeois' sources. (Kolakowski. [1978], page 452.)

Or in general, as Hoffer supposes:

...to interpose a fact-proof screen between the faithful and the realities of the world. (Hoffer. [1962], page 75.)

We are then looking at the problem as the strategic problem of the propagandist. I intend to develop a general and a special thesis to answer this question.

This approach is conjectured to be a useful heuristic, and should not be taken as implying that many of the processes by which an ideology is modified under criticism are necessarily a matter of planning or conscious control by the propagandist. Ever since David Hume raised the important problem of the unintended results of intended action, unplanned and unforeseen effects of action have loomed large in the social sciences. Such patterned effects are of considerable importance to this thesis, and indeed they are among the reasons why a propagandist cannot guarantee his message against criticism. I am simply choosing the most difficult case for my thesis: a network of ideas to whose propagation and protection someone is devoted, someone who makes the propagation of these ideas a strategic task.

The general approach of this work is to take for granted two central principles in the philosophies of Popper and Bartley and to use these principles to undermine some of their views on ideologies and criticism. These principles are the logic of the situation and Darwinian evolution, the latter being a special case of the former. I will make use of other parts of their philosophies when and where required. I will also make use of the new theory of memetic evolution developed by Richard Dawkins among others. The theory of memetic evolution applies Darwinian evolutionary principles to the evolution of ideas. The term "meme" was coined by Richard Dawkins, but both Popper and Bartley had made significant contributions to this theory before the publication of Dawkins's book The Selfish Gene, [1976], in which the term was introduced. This work then is partly an internal (or immanent) criticism of the work of Popper and Bartley, and must be read with this in mind. However, the thesis does have wider implications.

Others have dealt with a very similar problem. The problem that Raymond Boudon addresses is very similar to my own. He even begins with the assumption, that I share, that ideologies are rational in important aspects. However, the statement of his problem suggests that ideologies are closed to argument, and that false ideas have a net survival advantage over true ideas:

I repeat that my sole intention is to make a modest contribution to sociological theory on ideologies by confining myself to one question - why do people adhere so readily to false or dubious ideas. (Boudon. [1989], page 11.)

Boudon analyses ideology in terms of Weber's idea of meaningful action:

I have tried to show, firstly, that ideologies are a natural ingredient of social life; secondly, that ideologies start not in spite of, but because of human rationality. This is why I think the principles of Weberian methodology can be applied to this aspect of social life as well as to others. In other words, the received ideas which make up ideologies can be regarded, and probably deserved to be analysed, as meaningful ideas, provided one accepts that the irrational has a residual place in their creation and diffusion. (Ibid. page 11.)

We will see later (section 2.1.2.) that Weber's approach has severe shortcomings, in that it postulates kinds of meaningful action that are by implication closed to the influence of sound argument. Boudon's analysis suffers, like most analyses, from a total neglect of the theories of genetic and memetic evolution. Any serious analysis of a general tendency in humans to adhere to "false or dubious ideas" must check whether this view of man is consistent with his having evolved through Darwinian evolution. It must also take cognizance of the new theory of memetic evolution (how the creation, diffusion and elimination of

ideas can be analysed in terms of non-biological Darwinian-type evolution.) Boudon's approach at least has the merit of attributing a rational element to the creation and diffusion of ideologies. But because of Boudon's neglect of the evolutionary approach to culture he focuses on the creation and diffusion of ideologies without any explicit treatment of their elimination.

3. The General Thesis

No evangelistic erroneous network of ideas can guarantee the satisfaction of these two demands : (1) propagate the network without revision and (2) completely insulate itself against losses in credibility and adherents through sound criticism. If a network of ideas is false, or inconsistent or fails to solve its intended problem, or unfeasible, or is too costly in terms of necessarily forsaken goals, its acceptability may be undermined given only true assumptions and valid arguments. By "acceptability" I mean the disposition of people to adopt and propagate the network of ideas. People prefer to adopt ideologies that (i) are logically consistent, (ii) are more truth-like and of higher information content than their rivals, (iii) systematically organise their content, (iv) solve their problems better than their rivals, (v) do not contain unfeasible demands (vi) do not contain uneconomic demands. Truth and validity therefore act as Darwinian-like filters on ideologies. It is tempting to object and point to all the un-eliminated erroneous doctrines. But such an objection is too superficial, since a Darwinian-like filter does not have to be 100% effective to be effective. People are fallible, hence some ideologies that violate one or more of (i) to (vi) may escape rational elimination. However, this does not mean that having escaped rational elimination, they will continue to do so.

It is easy to conflate two quite different theses: (1) that by sound argument any person can be persuaded to give up any position violating conditions (i) to (vi); and (2) that no person can guarantee that he will maintain such a position despite any sound argument to the contrary. I sympathize with the first thesis, but I will be most concerned to argue the second thesis. The import of these ideas is clarified in sections 4 & 5.

The general thesis follows from three main positions:

(a) Bartley's philosophy of Comprehensively Critical Rationalism. All positions, not just false assumptions and invalid arguments, are criticizable in a methodological/logical sense.

(b) Popper's idea of the logic of the situation. In a situational analysis one takes the aims, knowledge, skills of an agent, plus the constraints he is acting under and explains the intended and unintended consequences that flow from this situation (section 1.3.). A situational analysis of the propagandist using assumptions accepted by Popper shows two things: (i). The successful propagandist cannot ignore criticism, but indeed has an interest in meeting criticism. Ignoring criticism means that (a) the propagandist has less opportunity to improve his ability to convince others of the ideology, (b) reduced chances to consolidate his retention of the ideology, (c) a failure to take account of competing ideas. (Section 1.3.1.) However, in meeting criticism he exposes his message to criticisms he cannot predict. (Sections 1.3.1. & chapter 4, especially 4.4.) (ii) Theories have an infinite number of implications and ramifications, and these logical properties preclude propagandistic efforts to guarantee a systematic exclusion

of dissent and the unintentional evolution of factions.
(Section 4.4.)

(c) That man is a creature of Darwinian evolution. The theory of evolution indicates that organisms do not thrive on error, but are likely to be biased in various ways to adapting to reality. Humans are rational in the following senses: they take account of the opportunity costs and benefits of their actions (section 2.1.); they prefer to abandon what is futile (2.2.) ; explore the unknown (2.3.); and develop beliefs in important issues in accord with fearful and wishful thinking enabling these beliefs to be better tested (2.4.); try to resolve inconsistencies in their beliefs and think in accord with the rules of logic (2.5.); try to make their emotional reactions appropriate to the world (chapter 3.). With certain reservations ³ , Popper and Bartley subscribe to Darwinian theory. But Darwinian theory can be used to argue that humans are rational in the above ways, thus undermining their view (shared by many) that ideologies can be made absolutely impervious to criticism. One might argue, as Popper has, that Darwinian evolution is a specific application of situational logic to the genetic evolution of organisms in general. Nevertheless, it is worth taking these principles one by one.

Because emotion is regarded by many as an absolute barrier to argument I devote the whole of chapter 3 to it. I argue that intense emotion is no absolute barrier to argument, though it may impair the understanding of critical argument. The theory that people adopt ideologies because of thoughtless emotion seems to imply that they are closed to argument, for what would the target of that argument be? But all emotion is under the control of our theory about the world and our place within it, and so even intensely passionate ideologies have a theoretical target for

criticism. It makes evolutionary sense that the emotions we have are under the control of our theory of the world for how else could they be appropriate to fairly complex, subtle, remote or hypothetical circumstances?

To see how responsive people are to criticism, it is important to distinguish (a) the meaningful content of the ideology, (b) the number of adherents at any time, and (c) the rate at which particular members join and leave the movement. A movement may have a large membership but a high turn over rate; or a small membership with a low turnover rate.

Without these distinctions what we see before us are ideological movements apparently perpetuated unchanged down the decades, centuries or milleniums.

But what do we mean by the perpetuation or change of a movement or a network of ideas? When we talk of a movement we refer nebulously to a mass of people and an associated doctrine. It is important to distinguish these aspects so that we can explore the relationship between them. One of the major elements of the general thesis is that there is a trade-off between the strength of belief in the movement - roughly indicated by number and turnover of adherents - and doctrinal integrity. The two principles, Darwinian evolution and situational logic, together explain the trade-off between the perpetuation of the movement and the integrity of the message. When a doctrine suffers from criticism, adherents are often lost if the doctrine is not changed because of (i) to (vi). The general consequence is that the intellectual leaders of the movement make marginal revisions in the doctrine in order to keep up the numbers of propagandists while keeping as much of the original network intact.⁴ This may occur as a planned process, but may also occur as a result of a filtering Darwinian-like process

whereby variants (themselves designed or accidental) of the original doctrine are subject to criticism, the strongest surviving and being reproduced. Contrary to C R Hallpike [1988], both conscious and "blind" selection processes may occur. ⁵ I am arguing that "strength" here be defined specifically in terms of the above rational filters (i) to (vi). Because of the insuperable problem of achieving conformity in the interpretation and defence of an ideology, different propagandists will be disposed to employ different presentations of the ideology (sections 1.3, 4.3, & 4.4.). Some of these will be better at passing the rational filters than others, and this will be the case independently of whether the variants are deliberately constructed to evade criticism by hoodwinking the critic or constitute misinterpretations of the original position. The important point here is that an accumulation of marginal revisions can make a large difference, just as in biological evolution an accumulation of numerous successive slight variations can make the difference between a virus-like entity and a human being. But though these changes are taking place, they may be masked by the more conspicuous trappings of the movement: the name and slogans etc., remain the same, and the absolute number of adherents may even increase.

Closer investigation of apparently unchanging ideological movements reveals that their membership is in great flux, with people joining and others leaving the movement. Eileen Barker reports that in her study of the Unification Church she found that at least 61% of those who joined the movement during a four month period in 1978 had left within two and a half years. (Barker, [1988], page 167.) Others have found very similar voluntary defection rates.⁶

This data leaves room for a proportion of life-long adherents, who simply do not change their point of view in the face of the counter-arguments or other forces at work

that might be pressuring them to leave. We must also note that those who left the movements may have left for reasons unconnected with arguments against the relevant doctrine. I point to these facts to clear the way for a recognition of the great flexibility of what are normally taken as rigid ideological movements.

In Popper's work Darwinian evolution and situational logic play central roles. Using these principles to answer our propagandist's problem we are led to view man as a rational animal in ways which undermine the idea that he can be completely insulated against criticism.

The principle of situational logic implies that the propagandist cannot ignore counter-argument but must cultivate an interest in it; and he cannot control the evolution of the ideology because of certain logical properties of theories and the necessarily inventive process of defending a doctrine against criticism.. The principle of Darwinian evolution implies that having encountered counter-argument the propagandist cannot insulate himself from it psychologically. (Often the propagandist will think he has successfully insulated himself and the doctrine from criticism through what is called an immunizing stratagem, but it will be shown in a later chapter that this is often an illusion.)

The principle of Darwinian evolution can be used to reinforce the view that man is rational in respect to truth in important ways, (i) - (vi), that can be seen in the standards of scientific, commonsensical, religious and political explanations. The same fundamental standards of truth which explain the rise of science also partly explain the rise and demise of other systems of ideas. (Section 1.1.)

4. Psychology, Sociology and Logic

The concept of openness to criticism admits of psychological, sociological and logical/methodological interpretations. There may be distinctly psychological, sociological and logical barriers to criticism. One may also distinguish methodological or epistemological guarantees from criticism.

For example, wishful thinking, universally thought to be a barrier to criticism, is clearly a psychological barrier; group hostility to criticism and rules and traditions against dissent are obviously sociological. One may try to reject the legitimacy or relevance of logic, which would - if successful - be a barrier to criticism. Using immunizing stratagems is a methodological barrier.

I fully accept that one can specify rules which if scrupulously followed would make an ideology unresponsive to argument. One could simply stipulate that criticism be ignored: if one encounters criticism, maintain one's position. One must also note that there are ways or methods of dealing with criticism which exclude taking account of criticism not as a conscious aim but as an unintended logical consequence. The evasion of criticism in such a case would not count as a stratagem, but as a systematic consequence of the way or method of responding to criticism. If a Christian invariably responds to criticism simply by maintaining that one cannot understand God until one believes in his existence, then the Christian's position would appear to be secure against criticism. After all, if the critic becomes a believer he is no longer a critic. Similarly, if an extreme follower of Georg Lukacs always insists that his critics cannot understand the proletarian point of view until one joins their struggle, then

(providing this is all he does) his position is secure against criticism (section 2.4.3.). The question, however, is whether a propagandist with the goal of propagating his doctrine and subject to certain evolutionary and current situational constraints could maintain such methods in the face of all potential criticism, and still have a good chance of satisfying his goals. My thesis is that this is not possible. Evasion of criticism is not so easy. Even if the atheist is converted, new puzzles and questions may arise about the nature of God; for example, how is it possible for God to consist of three persons as seems to be implied in the notion of the Trinity? Believers who have only just embraced one another as belonging to the same flock may be shocked to find their common ground disappear before them. Hence the frequency with which Church councils have been convened to settle points of doctrine, to determine what constitutes real belief. Similarly, Lukacs' epigone may be embarrassed to find newly converted members of the proletarian movement quarrelling among themselves, or that he is alone in his own interpretation of the class struggle. I was told by an ex-member of the Socialist Party of Great Britain that one of his fellow members would occasionally express his concern that "the members do not understand the case". (Section 4.4.)

An extreme version of this sort of criticism-deflecting stance would be the theory that all argument is illusory, that the notions of validity and logical truth etc are unreal. However, one might ask, if this position is very effective in protecting an ideology, why is it not simply incorporated by every aspiring ideology? My answer is that the potential converts of an ideology are subject to (i) to (vi). Such a mystical adjunct to an ideology would deprive it of its power to explain new circumstances and also of its power to defend itself against competing ideologies that happen to address themselves to (i) to (vi). Even such

mystical ideologies as astrology and tarot pay some respect to logic in their systematic nature. Moreover, an ideology that rejects or belittles logic runs the risk of not being able to police heresy and prevent the strains of internal dissension, for it will not be able to say systematically what is and what is not part of the doctrine. Indeed, without some respect for logic it is impossible to learn a language, let alone a particular doctrine. For these reasons the rejection of logic is often mere bluff or confusion.

Obviously, a doctrine whose descriptive elements are true and solves all the problems for which it was produced better than its rivals is guaranteed against sound criticism in a logical sense. A true and practically optimum doctrine cannot be refuted or shown to be futile. However, epistemologically, no one could guarantee either (a) that a doctrine is flawless or (b) that the methodological rules that explicitly or implicitly exclude taking account of sound criticism will be followed. This point is in accord with an internal criticism of Popper and Bartley, since they argue that all positions are conjectural and cannot be given any kind of justification let alone a guaranteed foundation.

In the light of these distinctions the statement that all false positions are criticizable admits then of at least two interpretations: (a) Any person can be persuaded to give up any position failing (i) to (vi) using only true assumptions and valid inferences; and (b) Any position failing (i) to (vi) can be tested. (a) presupposes (b), but (b) does not presuppose (a). Given that my general thesis implies (b) I need to examine this purely logical/methodological thesis. This enquiry will bring us into the debate over comprehensively critical rationalism, a doctrine developed by Bartley (section 1.2.). We will see that (b) is easily satisfied since in fact all positions (true, false or neither) can be criticized in a methodological sense.

I am arguing that if humans are rational then there will be limits on the spread of ideologies failing (i) to (vi). But even if all humans were very intelligent rational beings, there are limits on how quickly they could eliminate error. It is possible for everyone to be rational in sense (a) and yet for irrational ideologies to persist for centuries or longer? Remember, large movements may have a high turn-over rate. If a movement gains new members at least as fast as it loses them to sound argument, the movements' doctrine may persist for thousands of years even though no one was ever convinced for more than a year. I have already remarked that the Church of Scientology has a 100% per 5 years turn-over rate. Perhaps the many long-lived false, or futile, or uneconomic, or inconsistent ideologies put forward in support of the theory that humans are closed to argument are like the Church of Scientology. Tarot, astrology, ufology, may be systems of ideas that people adopt for a while, partly out of playfulness and curiosity, partly out of belief, only to abandon several years later. Even if people chose infallibly between correct and erroneous doctrines given several years to decide, we would still expect to see a great number of erroneous doctrines being perpetuated.

5. Testability of the General Thesis

My general thesis is metaphysical in Popper's sense, in that it is not open to direct empirical refutation. But in this respect it is no worse than my opponents' position: that there are systems of ideas that are completely insulated from criticism. No matter how many systems of ideas are shown to be open to criticism, it is always possible for my opponents to reassert the existence of some, perhaps as yet undiscovered, system of ideas that is completely insulated from criticism. I am forced by my opponents to examine each of their supposed examples of absolutely reinforced

dogmatism and criticise their reasons for taking them as such.

In discussing openness to criticism it is easy to confuse two positions:

(1) that the reproduction of no system of ideas failing any of (i) to (vi) can be guaranteed from sound criticism, and

(2) that the reproduction of any system of ideas failing any of (i) to (vi) will eventually be undermined by sound criticism.

(1), my general thesis, follows from (2) but is not equivalent. Hence my thesis is not disturbed by the perpetuation of error over thousands of years.

Popper, as well as Watkins and Agassi among others, have argued that even metaphysical theories are rationally arguable and criticizable despite their not being open to direct refutation by the falsification of their empirical implications (since by definition they do not have any that can contradict a basic statement - a statement describing an event at a spatio-temporally restricted location). One can argue, for instance, that they fail to solve the problem they were supposed to solve, or that they are inconsistent with another theory of higher informative content, or one that is regarded as unproblematic at the time. (cf. Popper. Chapter 8 of [1963]. I have more to say on this problem in chapter 4 on the immunizing stratagem.) This I believe is the case with my opponents' position: it is inconsistent with Darwinian theory and with an analysis of the situational logic of the propagandist.

My argument will be subject to any criticism that shows that Darwinian evolution can be expected to develop organisms

that thrive on error. I shall have more to say on this problem in the introduction to chapter 2, where I propound the argument from Darwinian evolution.

6. The Special Thesis

The special thesis will concern itself with two propagandistic systems of ideas: Marxism and Freudianism. If I am to argue my case properly, I must show that Popper's examples of immunized theories are not examples of theories that have been saved from criticism. As argued in section 5 I am obliged by the nature of the positions involved to examine each of Popper's and Bartley's examples of ideologies.

I do not think any one would take issue with the assumption that Marxism is propagandistic, that its adherents wish its ideas to propagate through the population. At first sight, it may seem that unlike Marxism Freudianism is not propagandistic, but simply a scholarly and therapeutic occupation. But Freud was explicit in his desire that psychoanalysis become a successful "movement", and wrote a book called On the History of the Psychoanalytic Movement, in which he describes how the spread of his ideas was carefully planned. At the second Congress of Psychoanalysts in Nuremberg, March 1910, the International Psychoanalytic Association was founded. Its declared aim was:

To foster and further the science of psychoanalysis founded by Freud, both as pure psychology and in its application to medicine and the mental sciences; and to promote mutual support among members in all endeavours to acquire and spread psychoanalytic knowledge. (Freud, [1914], pages 50-51.)

Freud was aware early on of the difficulties of keeping the adherents of a doctrine from straying from the true path.

The I.A.P. was intended to give new members a "guarantee" of proper understanding and to monitor publications for heresy:

There should be some headquarters whose business would be to declare: "All this nonsense is nothing to do with psychoanalysis; this is not psychoanalysis." (Freud, [1914], page 50.)

Adler, representing the Vienna group, feared that "censorship and restriction of scientific freedom" were intended. (Quoted by Freud, [1914], page 51.)

Gellner ([1985], page 8.) has pointed out that Freud justified Jung's rapid elevation within the movement against the anger of Freud's older followers by arguing that favouring Gentile entrants was politically essential for the successful expansion of the movement.

Freud, therefore, was interested in the propagation of his ideas and, at least initially, under the impression that this could be guaranteed by proper planning and instruction etc. Freudianism is thus certainly within the scope of this thesis.

I suspect that not just the adherents of any scholarly or therapeutic system of ideas, but most people desire greater public knowledge and acceptance of their ideas. This quite harmless fact is obscured by our habit of putting the academic and the propagandistic into exclusive categories. Of course, there are more or less scientific, more or less civilized, more or less violent, and more or less devious ways of propagating one's ideas; but this should not blind us to the fact that everyone is disposed to spread his word.

The special thesis will focus on Popper's notion of the immunising stratagem as a supposed way in which a propagandistic network of ideas may guarantee or insulate itself against criticism and spread. Chapter 4 is intended to reinforce my special thesis on immunising stratagems by examining in detail whether they have served to perpetuate Freudianism and Marxism either in a logical or sociological sense.

7. A Tentative Definition of Ideology

Having stated the problem we may now adopt a provisional definition of the word "Ideology" for the purposes of this work. The main guide here is to define our terms so as to make the theory as testable as possible. We may say that the word "Ideology" is used as shorthand for the much more cumbersome expression: "an erroneous, propagandistic network of assumptions embodied in both books and subjective beliefs".

In the use of the notion of falsity and truth I take for granted Alfred Tarski's definition of truth [1943-4]. Tarski's account is a development and correction of the old Aristotelian conception of truth defined in the following way: to say of what is that it is, or of what is not that it is not is to speak the truth; to say of what is that it is not, or of what is not that it is, is to speak falsely. Thus truth is understood as correspondence with reality.

If I am to argue that truth gives a network of ideas an advantage in competition with other ideas and in reproducing and spreading, it makes sense to pit truth against what is false. However, we must bear in mind that classifying theories as simply either true or false overlooks the fact that a false theory may contain some truth. (Newton's theory of gravitational attraction is false, but nonetheless has

many true non tautological implications.) This is why Boudon's approach is too crude for he begins with the question:

...why do people adhere so readily to false or dubious ideas. (Boudon. [1989], page 11.)

Boudon thus prejudices the issue in favour of the irrationalist thesis. In any case, if Boudon is comparing scientific with nonscientific beliefs, then he is going to be embarrassed by the, by now, common observation that nearly all scientific theories are false. In the competition between ideas, what may be important is the relative truthlikeness (verisimilitude) and information content of the ideas. For example, it may be true that the human population of Bolton is exactly 300,000. But this idea has less promotional value than Galileo's false, but more informative and truthlike theory that the acceleration due to gravity is a constant, g , independent of the mass of the falling body, where $g = 9.8$ meters per second squared. (Since Newton the force and hence the acceleration between any two massive bodies has been taken to be proportional to the masses.)

My assertion that people prefer to adopt theories that are closer to the truth is a psychological version of Popper's methodological requirement that scientists search for theories that are ever closer to the truth, and his conjecture that the history of science is a history of increasingly truthlike theories. There is, however, a problem with the definition of verisimilitude even for scientific theories. Popper argues that definitions are only useful if they clarify a theory or increase its strength. It was with the hope of strengthening his theory of science that Popper originally defined verisimilitude, but no adequate definition has yet been constructed.

Popper first defines truth-content and falsity-content. The truth-content of a statement A is the class of all the true logical consequences of A; the falsity-content of A is the class of all and only the false consequences of A. Popper then says that a theory Y has greater verisimilitude than a theory X if and only if either

- (1) the truth-content but not the falsity-content of Y exceeds that of X; or
- (2) the falsity-content but not the truth content of X exceeds that of Y. (Popper, [1963], page 233.)

Important criticisms of this original formulation are due to Miller and Tichy. They show that false theories cannot be compared for verisimilitude by this proposal; one of the theories has to be true. Nevertheless, the idea of verisimilitude is no more undermined by this failure to develop a formal definition than the notion of a natural number was undermined by Frege's failure to develop a formally correct definition. It still makes sense to say, for example, that the theory that the Earth is flat is further from the truth than the false theory that the Earth is a perfect sphere. ⁷

By "propagandistic" I mean a network of ideas that someone has a passionate interest in propagating, someone who may even resort to deception and force to achieve his aim. Again, my purpose is to deal with the most difficult case. An idea that everyone found unworthy of propagating would hardly be a test of my thesis.

By speaking of a network of assumptions I am alluding to the unifying principles that make various logically distinct assumptions into a single doctrine. The unifying principle may simply be the intention or belief of the adherent that the elements co-operate in the solution of a problem. But I

argue that people prefer networks of assumptions that are systematically organised, rather than a hotchpotch of loosely related assumptions. The ideal to which the mind tends is an axiomatized theory in which a rich content is derivable from a relatively small set of premises that have what Watkins ([1984], page 205) calls "organic fertility" - the content of their conjunction is greater than the sum of their contents taken separately. (Watkins' notion, I should point out, is for him a purely normative/methodological prescription for science.) This sort of principle is helpful in individuating doctrines. We will see that in the principles of coherence of a set of assumptions lies several avenues for the influence of truth.

The networks of assumptions that I am dealing with have a subjective and objective aspect. It is important to distinguish them since their interaction is crucial to understanding the impact of criticism on an ideology. All the great ideologies, including Marxism and Freudianism, are embodied in both books and subjective beliefs. Popper has advocated as a heuristic that ideologies be treated as things that people adopt for one reason or another, rather than things that people believe. To some extent I have followed this. But although a network of ideas may be propagated for reasons other than belief, it would appear that belief is one of the factors that makes people adopt and propagate ideologies. (Belief is not regarded as a necessary and sufficient condition for someone's adopting or propagating an ideology. It is regarded as increasing a person's propensity to do so.) Ignoring belief would also have unnecessarily restricted my investigation into how Darwinian evolution could have produced humans who are responsive to the truth in the ways I have specified.

Chapter 1

The Logic of the Propagandist's Situation

- 1.1. Importance of truth in criticism and the propagation of ideas.
 - 1.1.1. The propagandistic power of informative explanation.
- 1.2. Karl Popper and W.W.Bartley III. Their positions on ideologies.
 - 1.2.1. An Element of Residual dogmatism in Bartley's position.
 - 1.2.2. An Element of Residual dogmatism in Popper's position.
- 1.3 Situational Logic.
 - 1.3.1. The propagandist and situational logic.
- 1.4. Bartley's test case: Protestant Liberalism.
- 1.5. Exception to the General Thesis under extreme forms of Ideological Control.

Introduction.

In this chapter I explore the situational logic of the propagandist whose two goals are (1) to guarantee the propagation of his doctrine and (2) to guarantee it from criticism. I first show how the truth content of an ideology contributes to its chances of being propagated and its falsity content diminishes its chances of being propagated.

In The Retreat to Commitment Bartley argues that the intellectual reaction to the collapse of Protestant Liberalism is an ideology in his general sense: a network of ideas "that is retained regardless of the facts" (Bartley. [1962], page xviii.) Since this thesis is an internal criticism of the work of Bartley and Popper, it is appropriate that I illustrate my general case with an examination of the relative propagational success of

Christianity and Science (1.1. & 1.1.1.). The conclusions are applied to Marxism and Freudianism as the argument develops (1.1) In this connection I examine the work of Gellner and Monod (1.1), and Shils and Manning (1.1.1.) who argue that the truth content of an ideology bears no relation to its "promotion value", to use Monod's phrase. I argue that Meyerson's principle of identity can help us to explain the rise of Christianity and the subsequent relative propagational success of Christianity and Science, and by the same token that of Marxism and Freudianism. But the same facts can be better explained in terms of Popper's notion of information content and closeness to the truth. Meyerson's principle often leads to greater information content, but can conflict with this, and the conflicts have decided in favour of information content. Sections 1.1. & 1.1.2. illustrate how truth and validity can act as Darwinian-like filters on the evolution of ideologies because humans prefer ideologies with greater truth content.

I expound those views of Bartley's and Popper's on ideologies that are of concern to this thesis (1.2). I then show how Popper's notion of situational logic applies to the propagandist (1.3.1.). I argue that in order best to propagate his doctrine he has to expose it to potential new adherents and practise the skills of argument and persuasion, both of which oblige him to cultivate an interest in criticism. But this means that he exposes his doctrine to criticisms that are in principle unforeseeable. I explore the extent to which the logical properties of theories allow a propagandist to prepare defences against this criticism.

One such possible defence is confining the thought of adherents within the conceptual structure of the ideology, a form of "Newspeak", which Gellner seems to think is possible. This is analysed in terms of Hattiangadi's theory

of language acquisition which sees innovation as necessary in the acquisition of a language. In order to perpetuate the conceptual structure at all, therefore, the propagandist would have to leave room for divergences from it.

These conclusions are then applied to Bartley's own test case: Protestant Liberalism (1.4.). Bartley's general account of ideologies is also criticized.

In the final section I look at the limits of my general thesis (1.5.). I construct a better example of an ideology in Bartley's sense, one that requires an extreme form of mind control which suppresses criticism by suppressing all ability to innovate. Here we take to the limit the notion of a mendacious and repressive propagandist. I conclude that even if such mind-control were possible, there are still limits to which the propagandist can safeguard his ideology and satisfy both of his goals (1) & (2) above. He cannot guarantee in an epistemological sense against physical catastrophes that require innovations to cope with. In such a circumstance, to maintain the ideology the propagandist would have to maintain the society, but this would require the freedom to innovate. It cannot be determined in advance which lines of innovative work will produce ideas that have a critical bearing on the established ideology. Even when produced, it cannot be determined which ideas that when combined logically with other ideas, new and old, will have a critical bearing on the established ideology.

1.1. The Importance of Truth in Criticism and the Propagation of Ideas

This general thesis is inspired by my judgement that truth has more strength in argument than is generally assumed. I will argue that truth has at least two underestimated effects. It acts as a Darwinian-like filter on ideas through criticism; and it satisfies an innate curiosity which desires more rather than less truth in our ideas. Intellectual history, particularly a comparison between science and religion, seems to bear this out. Religion is a very useful illustration, for religion is often held to be the most stubborn of all ideologies. If I can show that even religion can offer no guarantee against criticism, then I will also have shown as a corollary that even if Marxism and Freudianism assume the form of a religion, they will still be open to criticism. This approach is particularly appropriate, not only because Bartley's example of an ideology in his sense is a religion (some branches of modern Protestantism) but also because Freudianism and Marxism have often been described as religions, the implication being that argument and rationality no longer apply.

Making an early contribution to the theory of memetic evolution, Monod attributes the spreading power of an idea to its "performance" and certain innate structures in the mind. The sort of performance Monod has in mind is the power of an idea to give greater coherence and confidence to a society. He seems to conclude from this that the:

promotion value (of an idea) bears no relation to the amount of objective truth the idea may contain. The might of the powerful armament provided by a religious ideology for a society does not lie in its structure, but in the fact that this structure is accepted. (Jacques Monod, [1970], page 155.)

But this does not follow. It may be true that a coherence and confidence giving idea will be spread by its beneficiaries, but Monod does not stop to examine the possibility that performance may be facilitated by truth. To put my point in general terms, a false theory may be useful, and spread because of its usefulness. However, the theory may be useful because of the little truth it does have. Therefore, while we might be able to imagine cases in which the usefulness (or "performance") of an idea may be independent of its truth content, we cannot accept the validity of Monod's argument.

Usefulness and truth content are logically distinct notions. However, I find it difficult to think of examples of useful theories completely devoid of truth content. Of course, a false theory may be useful on account of its falsehood for someone who has a theoretical interest in false theories. For example, in a criticism by *reductio ad absurdum* the critic takes a false premise of his opponent's position and uses it to infer an absurd conclusion. In such a case the premise remains useful no matter how low its truth content. But this is an artificial example. An example that might fit Monod's purpose is the Jewish idea that they are specially chosen by God. Without disputing the truth of this idea, it must be granted that the idea that they are the chosen people would give the Jews greater confidence and coherence, even if it were completely false. On the other hand, this itself is an artificial example, since this idea does not have an independent existence; it is embedded in a much larger doctrine consisting of moral injunctions and historical theories etc. Is this vast doctrine completely devoid of truth? This seems hardly likely.

It can be argued that the Jewish idea that they are the chosen people has given them coherence and confidence at the expense of the "promotion value" of their religion. As Gibbon argues in the Decline and Fall of the Roman Empire,

The descendants of Abraham were flattered by the opinion that they alone were the heirs of the covenant, and they were apprehensive of diminishing the value of their inheritance by sharing it too easily with the strangers of the Earth. (Gibbon, [1776], page 146.)

Curiously, having eliminated truth (and even verisimilitude) and structure, Monod is left with a tautology: that the spreading power of an idea lies in its being accepted. Monod also overlooks the possibility that a system of ideas may unintentionally give greater coherence and confidence to a society. Newton, Faraday, Maxwell, Einstein etc, may not have intended their theories and arguments to promote a confident and coherent society, but it would appear that through technology (telecommunications, transport, manufacturing, medicine) they have done just that. If we attribute this technological success to the truth-likeness of their theories, then we must conclude, contrary to Monod, that the truthlikeness of our ideas may promote confidence and coherence and thus their spreading power.

Equally dismissive of the power of truth is Ernest Gellner:

It is worth noting and stressing here that truth is not an advantage in producing a burning faith - contrary to Gibbon's highly ironic observations. (Gellner, [1985], page 204.)

Gellner's assertion leaves a number of possibilities open. Even if truth is no advantage it may not be a disadvantage either. Alternatively, truth may not be necessary to engender a burning faith; but falsehood may be the reason for its elimination or abatement. Even burning faiths

would then be subject to a Darwinian-like selection through falsification. To maintain this I do not have to argue that all false ideas are eliminated. My position is tenable even if only glaringly false doctrines are eliminated.

There is an interesting sophistication to Gellner's position which brings it much closer to my position than the above quotation would suggest. Gellner actually says that if psychoanalysis were true and cured 80% of its patients, then it would spread throughout the world. But he thinks that its very truth and success would mean that a burning faith in it would be impossible. Gellner asks us to consider two techniques A and B. A cures 80% of patients by a publicly testable procedure, and B cures 20% by an esoteric and invisible untestable method which is accompanied by intense emotion. A would spread like wild fire, but will not have any magic attached to it and would generate no offence. B on the other hand will spread just as much as A. Opposition to B will come from the 60% of patients who remain uncured. However, those lucky to be cured by it will be bound by faith to their therapists, and they will be bound by faith just because B is untestable, invisible and untestable. If they spread the word and another 20% are cured who in turn spread the word, then we will have an exponential growth of the movement.

Gellner does not explicitly speculate as to what the outcome of a competition between the two techniques would be. But any system of ideas must come into competition with other ideas if it is to have any chance of spreading throughout the world. In that case Gellner's hypothetical argument loses its strength, for even on Gellner's assumptions A, being closer to the truth, would have the advantage over B. Under these realistic circumstances, B would not spread as much as A, contrary to Gellner's thesis. An unintended implication of Gellner's position is that the conditions

favourable for the generation of burning faiths are a positive disadvantage to their propagation.

Gellner's definition of B seems to denude it of all content. If a system is invisible and unspecifiable, it is hard to see how it could be of any use or guidance, let alone work in 20% of cases. Let us see if we can provide a possible interpretation that would serve Gellner's point. Such a definition would be satisfied by a book so sacred that only a certain select group of priests could inspect it for counsel on various matters. The rank and file faithful would accept the advice ostensibly taken directly or by inference from the book by the priests. But all along the book has nothing but blank pages. Such an invisible and unspecifiable system of ideas would be no system at all, merely the pretence of a system, and could not therefore be perpetuated. What Gellner could have said, but fails to bring out clearly is that what is being perpetuated in a case like this is the idea that a certain group of individuals has privileged access to knowledge or wisdom. But this is checkable since the advice of the priests can be searched for inconsistencies over time. An example of this is M. James Penton's [1985]. Penton, originally a Jehovah's witness, shows how the so-called authoritative interpretations of the Bible by the "Elders" were inconsistent over time, producing much disaffection among followers. Perhaps the same kind of criticism can be applied to Psycho-analysis.

Monod's and Gellner's positions each imply that truth does not add persuasive strength to criticism or aid the propagation of an idea. (As we saw, in Gellner's case, it is burning faiths that are extinguished by truth). But if this is so, why is it that science has had such an impact on religion? So great is this impact that new religions feel obliged to adopt the name of science: for example, Christian

Science or Scientology. (One is reminded of the Freudian notion of identification with the aggressor, though, of course, criticism works quite differently in other respects from aggression.)

The rise of science as the pursuit of truth for its own sake in the 16th and 17th centuries with parallel developments in philosophy has made it very difficult to maintain the old religions with their old interpretations. Scientists such as Isaac Newton produced better explanations of the world than those contained in the Bible or other canonical texts. Newton's explanations had greater information content and were closer to the truth. Newton may have maintained his theistic views on the creation of the world, but his scientific theories are autonomous objects with unintended ramifications and implications. Despite Newton's intentions, his scientific theories undermined the dominant Christian cosmology. Moreover, philosophers such as David Hume and Voltaire exposed the fallacious reasoning and inconsistencies in the Bible and the arguments of its supporters. The so-called argument from design and the ontological argument, not contained in the Bible as such but propounded by St Thomas Aquinas in Summa Theologica and St Anselm (1033-1109) in Proslogion respectively, were two of the most prominent intellectual supports of Christianity. Hume refuted the argument from design in his Dialogues Concerning Natural Religion, and undermined the principle of the ontological argument in his Enquiries, [1748], XII, (iii). Kant elaborated the latter in his Critique of Pure Reason. Interestingly, the ontological argument was immediately attacked on its publication from within the Christian community by a monk, Gaunilo, and by Aquinas, both using sophisticated arguments. I think that this shows that far from reason being irrelevant to Christian commitment, the maintenance of commitment has involved quite subtle reasoning.

The design argument is that just as one can infer the existence of a designer from the order in human artifacts, one can by analogy infer the existence of a designer of the universe from its order. Hume pointed out that the two cases are quite distinct. In the case of humans and their artifacts, we have two genera whose members we have experienced to be in a certain relation. We have seen watch-makers making watches. Moreover, we have not seen watches simply emerge without a watch-maker. But in the other case, we have two unique things: the theistic God and the Universe. We have not seen Gods making Universes; indeed, this is logically impossible. Darwin [1859] further undermined the argument from design, by proposing that the obvious imperfections in the way an organ was adapted to its function was better explained by natural variation and selection than by divine design. Voltaire pointed to inconsistencies and empirical absurdities in Genesis; for example, the assertion that God first created light, and only later the Sun and the stars. (Voltaire, [1764], page 218.)

Anselm's ontological argument attempts to show that denying God's existence involves a contradiction. He begins by assuming that God is a being than which nothing greater can be conceived. If we grant this, which seems harmless, then we grant that we can conceive a being than which nothing greater can be conceived. But, Anselm says, if this concept exists only in our mind, then there is a being greater than this mere mental entity: one that actually exists. Thus we would contradict ourselves if we were to deny existence to what corresponded to this conception. Kant's reply is his famous dictum that "Whatever, therefore, and however much, our concept of an object may contain, we must go outside it, if we are to ascribe existence to the object". Adapting Kant's argument, suppose one had a concept of an X that

included existence. One could deny the existence of Xs without contradiction. Suppose, for example, that one had the concept of a centauroid: a centaur that exists. If one then asserted that there are no centauroids one would not contradict oneself. Therefore, to assert or imply the existence of an X it is not sufficient to grant the possibility of conceiving an X: one must actually assert or imply the existence of an X.

The resulting damage to the doctrinal integrity of Christianity is not easy to see. What we find is that the original texts and ceremony are retained but radically different interpretations are placed on them. The result is that the power of argument is underestimated by onlookers. For example, the Jehovah's Witnesses, ostensibly a fundamentalist Christian sect, have virtually abandoned the original interpretation of Genesis. The creation of the world is taken to mean the creation merely of the Earth and the Solar system, and each of the seven days of the creation is taken to be thousands of years long. These are attempts to make a now absurd account of creation more plausible in the light of the triumph of science. This is typical of Christianity as a whole. As the Claremont theologian John Hicks puts it:

The pressure upon Christianity is as strong as ever to go on adapting to something which can be believed. (As quoted by Wells in [1988], page 66.)⁸

Such examples will help us to see how it is that Marxism and Freudianism can seem to be insulated from criticism, yet to have actually changed quite considerably in response to criticism.

The move away from the older literal interpretation of the Bible can be seen in the works of prominent theologians. Earlier this century theologians such as Karl Barth were asserting complete freedom in the interpretation of the word of God (with the proviso that whatever the proper interpretation is it be thought of as true). Today the most popular theologians are those like Paul Tillich, who argue that only metaphorical interpretations can be placed on the Bible. It is significant that these are Protestant theologians, theologians who have had more exposure to science (see section 1.4.). Perhaps other religions such as Islam are more intact because they have had less exposure to science. We may conjecture that with a similar degree of contact, these religions would also crumble and resort to apologetics similar to those to be seen in Protestantism.

No serious attempt to determine the extent to which a system of ideas can insulate itself from the truth can ignore this general development in intellectual history. It must lead us to suspect views such as Monod's and Gellner's. But also we must answer the question: in what fundamental respect were scientific explanations of the world better at spreading than those supplied by Christianity?

1.1.2. The Propagandistic Power of Informative Explanation

Science has succeeded in spreading its ideas because it promotes the values of truth and criticism. But let me be more specific. Science has a greater chance of surviving in competition with rival systems of ideas because it supplies theories of the world that are: general and precise (i.e., have high information content), relatively simple or unified, open to public scrutiny and testing, and often closer to the truth. Why should these characteristics give ideas a better chance of spreading? Because, as I intend to argue contrary to Gellner, Monod and others, man is a rational animal and is substantially interested in the truth. (In chapter 2 I will expand on what I mean by man's substantial interest in the truth, and why this should follow from Popper's evolutionary view of man.) But let us first see how one might begin to explain in these terms the rise of Christianity and its subsequent loss of authority.

Christianity was successful partly because it satisfied a universal interest in an explanation of the world. But not any sort of explanation would have done. It had to be general, precise, relatively simple, and close to the truth. These do not amount exactly to the criteria of good scientific explanations, for they leave out at least the highly important criterion of falsifiability as advocated by Popper. Nevertheless, let us see where this idea takes us. We can develop a more sophisticated conception of a good scientific explanation in the course of exploring the overlap in the standards of explanation embodied on the one hand in religion, and those embodied in legitimate science. The extraordinary growth of Christianity and Islam can be attributed in part to their monotheism: they reduced the apparent diversity of causes to one divine source. One God satisfies the demand for simplicity and generality. Many

pluralistic religions posit a supreme god who at least sets limits to the behaviour of the other gods.

But has not Christianity avoided giving definite information? A cynic might think that the last thing an adherent wants in a religion are definite claims that can clash with reality. However, the history of Christianity, at least, is replete with predictions of various kinds. The Old Testament scholar H.P. Smith listed 27 different dates which were fixed as the end of the world and of the second coming between the years 557 and 1734. (Essays in Biblical Interpretation. London. Allen and Unwin (and Boston: Marshall Jones). 1921. page 180.) This accords with a comment made by George Santayana:

What would make the preaching of the gospel utterly impossible would be the admission that it had no authority to proclaim what has happened or what is going to happen, either in this world or in another. (As quoted by Bartley, [1984], page 38.)

It is almost ubiquitous among new religious movements to make predictions about the end of the world etc. But these prophecies can be falsified. People become dissatisfied with the vacuous "explanations" of moribund religions because, emptied of much of their content in an attempt to deal with these falsified predictions - among other criticism - they are very uninformative. If the appeal of religions were unconnected to their informative content, such predictions that can clash with reality would not be so common. (And neither would the content-decreasing modifications to systems whose predictions have suffered falsification.) We may conclude that falsification by actual events can act as a selective filter on the form of religions, tending to eliminate those with little or dwindling content. Objective truth, therefore, is relevant to an idea's promotion value. It may not be the only selective filter on the propagation

of ideas, but I do not have to maintain that in order to refute Monod's denial of any relationship between truth and promotion value. (The chapter on the immunizing stratagem will explain how doctrines can become emptied of content in response to criticism, not strictly through an explicit refutation, but through a surreptitious or unwitting abandonment of the theory in response to criticism.)

It is fairly commonplace to describe science as guided by the principles of simplicity, precision, generality. It would be interesting if we could reduce these principles to a single principle. Owing to work in philosophy this does seem to be possible. The human mind desires information from its ideologies. However, it is not just information that is demanded. One idea that is worth examining in this respect is Meyerson's theory that what the mind desires are explanations that reduce diversity. Meyerson is responsible for the application of this idea, called the principle of identity, to scientific methodology. Zahar has developed Meyerson's idea in his book Einstein's Revolution. Meyerson argues that the same desire for such explanations is a basic property of the mind and determines what we regard as good explanation in both science and common sense. The identity principle shows itself in different forms. We may quote from Zahar's presentation of Meyerson's idea:

According to Meyerson, the whole of science is informed by the identity principle, which consists in denying the diversity of the phenomena, or rather, in deriving this diversity from one fixed set of laws. This is the so-called legal form of the identity principle. According to the causal version, nature consists of substances governed by strict conservation laws. The human mind has an irresistible tendency to hypostasize natural processes, thus turning them into things whose total quantity remains constant. This is an innate propensity, which already leads the child to a belief in the persistence of material objects. (Zahar, [1989], pages 23-24.)

This principle seems to be in operation in science's preference for universal as opposed to particular facts, and theories with few premises (Zahar gives as an example the search for the unified theory in physics).

Zahar agrees with Meyerson's conjecture that this innate propensity evolved by a Darwinian process. The legal form of this propensity enables animals to anticipate facts. Meyerson denies any survival value to the causal version of the identity principle, but Zahar points out that the postulation of objects that persist in time also helps an animal anticipate facts. However, Zahar is quick to maintain that even though the emergence of these principles can be explained in Darwinian terms, once they exist their application in science is strictly Lamarkian. Zahar therefore neglects to ask whether these principles act as Darwinian-like filters of ideas spontaneously produced partly independent of heuristics or receptions. Zahar takes it for granted that Darwinian-like and Lamarkian-like processes are incompatible, but many processes embody both: for example, the breeding of dogs, which is directed in certain respects in accord with a plan, does not eliminate Darwinian processes completely.

Meyerson's idea can be generalised to religions. A religious conversion may be rather like seeing a good scientific explanation. Meyerson's theory accounts for the propagation of monotheistic religions and it also accounts for the spread of Marxism which claims to offer a comprehensive explanation of at least the social world, using relatively few premises, and the success of Freudianism, which - at least in the beginning - reduced all psychological phenomena to sexual impulses.

Surprisingly, Monod takes a similar line, attributing the immense influence of Marxism to

its ontogenic structure, the explanation which it provides, both sweeping and detailed, of past, present, and future history. (Monod, [1970], page 157.)

Monod, therefore, attributes Marxism's success to the values of exactitude and generality. This contradicts his earlier assertion that the structure of an idea is irrelevant to explaining its spread. Although these criteria of a good explanation are not necessarily connected with a search for truth, it is hard for Monod to maintain the relevance of an ideas' exactitude and generality in the light of his assertion that the propagation of an idea bears no relationship at all to its objective truth content. Marxism may contain false generalizations or spurious details. But the search for generality and exactitude is hardly likely to lead away from truth in a systematic way. Moreover, Monod does not show that Marxism is completely false. The appeal of Marxism's generality and exactitude may well depend on Marxism's being successful within fairly large areas, on its having at least some objective truth content.

Some would argue that Marxism claims to provide a metaphysical theory of the whole world that all true theories must presuppose (or at least not contradict). As Minogue points out in Alien Powers [1984], Marxism overreaches itself in this respect for it even tries to explain all theory creation and debate, including itself.

Religions are not, of course, concerned with exactly the same set of problems as science, but there is an overlap. Religions are, like science, concerned with the structure of reality, but they also deal with ethical questions which lie outside the scope of science. But even here they may

come into contradiction since at least some ethical questions, whether for instance one should pray to God, are dependent on the actual state of the world, in this case on whether there is in fact a God, and if so, how many? At this point Meyerson's principle would come into play.

There is a problem with Meyerson's principle that helps to explain why scientific method has out-competed Christianity. An even stronger innate principle than Meyerson's principle is the demand for greater information, for a growth in knowledge. As Popper argues, science has progressed most when it has striven for an increase in the information content of its theories. Now, some ways of reducing diversity may also reduce information content. (or truthlikeness?) Obviously, an unrestrained application of Meyerson's principle would lead to Parmenides' theory of a block universe, in which everything is one. But truth lies somewhere between the theories of Heraclitus and Parmenides. Meyerson was actually aware of this and consequently asserted only that the human mind struggles to impose its denial of diversity on the world, which resists the straight-jacket. Historically, when there has been a choice science has preferred increased information content to reduced diversity. (The Greeks thought there were but four elements; today there are thought to be 109. Carnot's principle may be another example.) Also we know from Godel's work that there are limits on the axiomatizability of theories, a result that may preclude a unified field theory: physics may be ineradicably incomplete. Therefore, while Meyerson's principle helps us to see that monotheistic religion and science appeal to some of the same standards, its occasional conflict with the search for increasing verisimilitude and information content helps us to explain why science out-competed monotheistic religion.

In the above comparison between science and Christianity, I neglected to point to an important difference between them that might seem to undermine my point. To say that science has out-competed Christianity in the competition for credibility on matters of empirical fact is a little misleading. "Science" is a term that refers both to a collection of particular theories and/or to a collection of methods and attitudes. More scientific theories have been falsified and discarded than religious theories. This is hardly surprising since science (as a method) does generally encourage the severe testing and retesting of theories and the generation of competing theories. Thus a more accurate description would be that the methods and attitudes of science have survived and out-competed religious methods and attitudes, but at the price of refuting a great many scientific theories. (To be even more precise, we should also say that the various refuted scientific theories have lost out not to Christianity, but to other scientific theories. Even refuted and scientifically discarded theories are still far superior in terms of survival value than Christian theories, and this is due to their greater truth-likeness and information content.)

Having seen how science and Christianity have competed to satisfy similar (or overlapping) standards, those theories that put a great gulf between science and ideology, and therefore make the latter seem more closed to argument, now seem less plausible. For example, Edward Shils has expressed the opinion that:

...science is not and never has been part of an ideological culture. (Shils, [1968], page 74.)

Manning goes further, asserting that

Ideological talk, unlike legal talk, does not give us information about the world in which we live. It cannot carry the appropriate descriptive content. (Manning, [1980], "The Place of Ideology in Political Life." page 75.)⁹

But even if one regards science as non-ideological, one must admit that the paradigm examples of ideologies may incorporate and use the propositions of science. For example, classical liberalism used theorems of economics, such as the law of comparative advantage, in its arguments for the general value of freedom within a market. Marxism used a modified version of Ricardo's Labour Theory of Value to argue against this ideology. (I subsequently found that Boudon makes a similar criticism of Shils in [1986], pages 26-27.) Human beings desire an informative, general explanation of the world and their place within it. The more any system of ideas satisfies this desire, therefore, the greater will be its chances of propagation. This accounts for the relative propagandistic success of both Marxism and classical liberalism.

It is not being argued that truth always wins out in the long run. That would seem to be false. What I am arguing is that there are no fool-proof methods of saving a network from the impact of truth. But I also want to argue that

truth adds strength to a position's ability to spread, and that if pressed truth has the advantage in argument. A true or valid position is rather like the number which is favoured in a loaded die: it does not always win, but it has a certain propensity to do so.¹⁰ Thus this thesis is not refuted by examples of false doctrines that have survived over the centuries. My argument is that their position can never be made secure.

1.2. Popper and Bartley

Since this thesis is an immanent criticism of Popper's and Bartley's position on ideologies, I will expound their positions and then point to the central principles in their work that undermine their pessimistic position on the power of argument.

Popper and Bartley have been central figures in the attempt to make the distinction between open and closed systems of thought; between critical and dogmatic beliefs, attitudes and methods. In many ways they have weakened the philosophical case for absolutely closed systems of thought, showing how diverse sorts of ideas can be subject to criticism of different sorts. They have thus contributed to a more critical ethos. But they have also made a case for asserting that some ideologies and their proponents are immune from empirical or non-empirical criticism.

My criticism of Popper and Bartley is heavily dependent on their achievements in extending the notion of criticizability. Their major achievements have been in extending the logical/methodological notion of criticizability, though even this extension remains to be completed. Their view that all (or nearly all) positions are logically open to criticism has not been generalised

sufficiently to the psychological and sociological domain. I will explore the move from Popper's early conception of critical rationalism to Bartley's extremely important generalisation. We will also cover the latest extension to the logical notion of openness to criticism, propounded by Miller. We will then show how Popper's and Bartley's principles of situational logic and Darwinism can be used to show that there are no absolute barriers to criticism even in the psychological or sociological domain.

As I argued in the introduction, it is important to distinguish logical, psychological and sociological openness to criticism so that one can show how they are related and interact.

It might be thought that questions of psychology and sociology should be dealt with in the psychology and sociology departments. However, problems cannot always be neatly slotted in to particular departments. One could argue, as Popper has, that there are no subject matters as such but only problems. (cf. Popper, [1983], page 5.) It follows that in trying to solve a problem, one should not be shy to use theoretical and conceptual tools independent of their origin. In following this advice I am able to explore very important relationships that exist between the psychological, sociological and logical domains, relationships that have received only scant attention, perhaps because of a too departmental attitude to this problem. Again, this is consistent with an immanent criticism.

1.2.1. An Element of Residual Dogmatism in Popper's Work

Bartley's major contribution is his theory of comprehensively critical rationalism, which was meant to resolve some internal problems of Popper's position on openness to criticism. Popper had championed the critical attitude, but there were unintentional dogmatic elements in Popper's presentation that Bartley successfully showed to be unnecessary. Henceforth all positions were open to criticism. Bartley had made the notion of criticism comprehensive. It is my task to eliminate the remaining dogmatic elements in Bartley's and Popper's system. Let us first see how Popper allows a dogmatic element into his theory.

Popper has asserted that

..no rational argument will have a rational effect on a man who does not want to adopt a rational attitude. (Popper, [1945], page 231.)

Popper arrives at this pessimistic position through a discussion of the relative merits of uncritical (or comprehensive) rationalism, critical rationalism, and irrationalism. Uncritical rationalism is the doctrine that all and only those positions that can be supported by argument or evidence should be accepted, the rest rejected. Popper points out that uncritical rationalism is in fact self undermining, since it cannot itself be defended by argument or evidence.¹¹ Moreover, uncritical rationalism can be defeated by its own weapon, argument.

Popper generalises the argument. Since every argument makes an inference from assumptions, it is impossible that all assumptions be based on argument. The impossibility arises because we would be involved in an infinite regress: each

argument for an assumption would have to have an argument for each of its own assumptions.

The demand raised by many philosophers that we should start with no assumption whatever and never assume anything without 'sufficient reason', and even the weaker demand that we should start with a very small set of assumptions ('categories'), are both in this form inconsistent. For they themselves rest upon the truly colossal assumption that it is possible to start without, or with only a few assumptions, and still to obtain results that are worthwhile. (Ibid. p. 230.)

How does this argument lead to Popper's pessimistic position on argument against someone who does not want to be influenced by argument? Popper applies this general point to the problem of adopting a rational attitude.

The rationalist attitude is characterised by the importance it attaches to argument and experience. But neither logical argument nor experience can establish the rationalist attitude; for only those who are ready to consider argument or experience, and who have therefore adopted this attitude already, will be impressed by them. That is to say a rationalist attitude must first be adopted if any argument or experience is to be effective, and it cannot therefore be based on argument or experience. (And this is quite independent of the question whether or not there exist any convincing arguments which favour the adoption of the rationalist attitude.) We have to conclude from this that no rational argument will have a rational effect on a man who does not want to adopt a rational attitude. (Ibid. p. 230.)

The adoption of the critical attitude then must be an "irrational faith in reason".

From the above quotations it can be seen that there are two aspects to the dogmatic residue in Popper's account: a logical/methodological aspect, and psychological/sociological aspect. However, Popper does not consistently separate the two. Clearly, one can specify a

methodological rule to the effect that one maintain one's position in the face of all argument. Such a rule is logically consistent, and if scrupulously applied would mean that all criticism is ineffective. But Popper seems to think that if irrationalism is logically tenable then it must be psychologically tenable. Popper first says that the rationalist attitude must be adopted to make criticism effective, but then immediately retracts this implicitly by saying that this is independent of whether there are any convincing arguments for adopting rationalism. Is Popper saying that a convincing argument can fail to convince? If there are arguments that can persuade one to adopt the rationalist attitude in general, then one can be affected by rational argument without having first adopted the rationalist attitude. Popper could mean that there might be arguments in favour of the rationalist attitude that can strengthen this attitude only after one has made the faithful leap in adopting rationalism. But this is unclear.

Bartley wanted to develop a methodology that kept Popper's emphasis on the critical attitude, but which did not have to rely on Popper's "irrational faith" in reason. More generally, Bartley wanted a critical rationalism that avoided Fries's trilemma: (1) infinite regress; (2) vicious circularity; (3) dogmatism. Bartley successfully solved this logical/methodological problem by his arguments for comprehensively critical rationalism. Bartley's solution was to clearly distinguish between justificationism and criticism. Traditionally, criticism had been defined implicitly as an attempt to show that some position was unjustified. But, Bartley says, if justification is impossible and our primary interest is, and always has been, truth then it would make sense to define criticism with respect to the truth, not justification. We can then go on to define the rational attitude in a coherent manner that avoids (1) to (3). We may not be able to prove or justify

our positions or our methodology itself, but we can nonetheless diligently search for the truth by keeping our positions as much open to criticism as possible. In response, Popper rejected his call for an "irrational faith" in reason. This was no longer necessary. (Popper's acceptance of Bartley's argument is recorded in his [1983].) Thus, methodologically there was then no dogmatism in Popper's position. However, both Bartley and Popper have retained the psychological/sociological aspect of their residual dogmatism.

1.2.2. An Element of Residual Dogmatism in Bartley's Work.

The problem as presented by Bartley is an unresolved crisis of identity in contemporary rationalism which can be clearly analysed in terms of contemporary Protestant theological thought. Bartley argues that the Christian intellectual reaction to the failure of Protestant Liberalism is able to defend its retreat to commitment, its use of unargued faith, only because rationalism, with which it identifies itself, has admitted that it must itself appeal to unargued, unjustified assumptions. Bartley pictures the Christian saying to his conventional rationalist critic: why should I be moved by your demonstration that my faith cannot be justified; after all, you yourself must dogmatically accept some starting point. The fault as Bartley sees it, lies in the ubiquitous adherence to what he calls a justificationist metacontext. Argument and even criticism itself is generally understood as dependent on justifying some position. A criticism in this context is an attempt to show that a position cannot be justified. Bartley's proposed solution is to separate criticism from justification. In this way Fries's trilemma is avoided. All we need for rational argument is a willingness to keep our positions, all our positions, open to criticism. This method, of

course, applies to itself. But this self applicability does not suffer the same problems that Popper attributes to uncritical rationalism. Neither does it suffer, like critical rationalism, from the need to rely on an ultimate terminus in argument. I would not want to suggest that Bartley's comprehensively critical rationalism is without its critics; it is in fact the subject of considerable debate, in which the principle figures have been Watkins and Post. ¹²

Bartley's analysis of the reaction to the failure of Protestant Liberalism serves to illustrate his answer to the main problem of his book:

...what can be done to (systems of ideas), how can one tinker with them, to enhance or reduce their criticizability. In particular, the book is concerned with how men use ideas to protect ideas from competition, to remove them from the selective process that is the heart of criticism. (Bartley, [1984], page xix.)

Bartley's general position on psychological/sociological openness to criticism is that

ideologies are retained regardless of the facts; they are not abandoned when they clash with the facts; rather they die out or are eliminated, if at all, together with their carriers... (Ibid. pxvii.)

The claim is that there are networks of theories making certain claims about the world whose proponents continue to maintain and propagate them whatever facts are presented against them. This view is reminiscent of Planck's view of science. Planck held that new theories in science become accepted only because the proponents of the old theories die off, leaving it to the young generation of scientists to adopt and develop the new theories.

Bartley takes this as a rough and ready distinction that can easily be expanded to treat the main case study of his book, Protestantism and its successors. But this qualification does not repudiate the implication that humans are irrational. Indeed, Bartley begins with the assumption that humans are irrational:

I do not for a moment believe that man is a rational animal, let alone that men are born with a 'faculty' of reason. Rather, rationality, like consciousness itself, is a comparatively late, and still rather rare, and, where it exists, fragile development. Most individuals exist in a troubled, slumbering fantasy world, and, when most awake, are bound by rigid habits and unconscious patterns of behaviour. Comparatively few persons enjoy the give and take of criticism or think to any purpose other than to dominate. (Ibid. page xxi.)

The rise of science on this view is a puzzle. Bartley recognizes this and attributes it to the influence of competition and imitation through the rise of open markets. It paid individuals to copy the exploratory, entrepreneurial behaviour of their more successful competitors in the provision of commodities. Reflecting critically on one's own behaviour to eliminate unsuccessful trials also allowed one to shift one's energies more quickly to meet consumer demand. These attitudes of exploration and self criticism became generalised, making science possible. This is what Popper and Bartley would call a situational analysis of the market and the rise of science. Bartley does not consider the possibility that the situational logic of the market may have been part of the genetic selection pressure acting on our ancestors; if he had he may not have dismissed so quickly the existence of a rational faculty. In any case, the same sort of analysis that Bartley applies to the emergence of rationality can be applied to ideologies to show that they are more open to criticism than Bartley or Popper suppose.

1.3. Situational Logic

This section addresses itself to two main questions:

- (1) Can the propagandist simply avoid criticism, refusing to listen to or read counterarguments?
- (2) Can he control the more subtle defenses of the doctrine and build up membership? (For example, through the often supposed monopoly of interpretation that the Catholic Church has on the Bible.)

My answer will be that due to the logic of the propagandist's situation, neither of these strategies are available to those propagandists who are keen to propagate their ideas. First we must explore Popper's notion of the logic of the situation.

Popper explains that in situational logic what we do is to construct a model of the situation in which an agent acts. The situation will be made up of his knowledge and his aims plus the constraints on his action, constraint understood in a very general sense. We then assume that the agent acts appropriately to the situation as we have modelled it. What we learn is how and why the agent saw his action as appropriate to the situation as he saw it. But the model is not confined to how he sees it: for it must include information that describes their limited experience, their limited or overblown aims, their limited or over-excited imagination etc. We thus learn how their action was adequate for their inadequate view of the situational structure.

Popper points out that we can use the rationality principle even to explain the actions of the madman:

We try to explain a madman's actions, as far as possible, by his aims (which may be monomaniac) and by the 'information' on which he acts, that is to say, by his convictions (which may be obsessions, that is, false theories so tenaciously held that they become incorrigible). In so explaining the actions of a madman we explain them in terms of our wider knowledge of a problem situation which comprises his own, narrower, view of his problem situation; and understanding his actions means seeing their adequacy according to his view - his madly mistaken view - of the problem situation. (Popper, [1967], page 363.)

Popper's view overlaps with my own, since I argue that all people are rational, but there is a considerable difference between his view and mine, since I will be arguing that no beliefs are incorrigible. In this chapter I will be arguing that the logic of the propagandist's situation impels him on pain of failure to spread his ideas, to be - among other things - corrigible. In chapter 2 I will argue that Darwinian theory suggests that no person is incorrigible in their beliefs.

1.3.1. The Propagandist and Situational Logic

Both Popper and Bartley regard Marxism and Freudianism as examples of irrational ideologies: their proponents have made them closed to argument. However, if we view these systems from the point of view of the propagandist's situation, there are important pressures and constraints that render them more open to criticism than one might at first suspect.

Marxism and Freudianism are propagandistic sets of assumptions that are subject to a situational logic peculiar to evangelism. Think of the logic of the situation facing the ideologue who wants his ideas to catch on, to propagate, but also wants to protect them from criticism. When he first contrives the ideas he could decide there and then never to utter them or write them down. They will be safe from outside criticism, but certainly will not spread far and may well be forgotten. Suppose he decides to speak them but not to write them down, thinking that if he comes across a strong counterargument, he can more easily deny having asserted the theory in this vulnerable form. The costs here are quite high: even if his ideas do spread by word of mouth, they are likely to be distorted and changed significantly without reference to a canonical text, perhaps even spawning new ideas that come into competition with the original idea. It is a matter of common observation that rumour distorts initially innocent tales, often contravening the purpose of their originator. It also becomes clear that, contrary to popular opinion, pride may actually work against the survival of an ideology, since in avoiding the shame of error the ideologue abandons it by denying he even asserted it.

The propagandist could write the text for a new creed and then promptly lock it away in a safe. It would then be free from possibly damaging criticism, but it would also be safe from propagation. Gibbon attributes the propagational success of Christianity partly to the fact that it threw off the fetters of the Jewish religion, which kept the teachings and promise of salvation confined to the descendants of Abraham. (cf. Gibbon, [1776], page 147.) The Gnostic heretics of early Christianity claimed to possess secret knowledge that was only given to those few they deemed spiritually mature. One could argue that this practise was partly responsible for the ease with which Gnosticism was suppressed by the orthodox church. (On the Gnostics's claim to secret knowledge see Pagels [1979], pages 44-47.)

The propagandist who restricts his propagandistic efforts has to bear a number of costs:

(a) A loss in his skills of argument and persuasion. If the doctrine is unearthed one day, he would be less able to defend it against criticism.

(b) A loss in memory and understanding of the ideology. There is nothing as efficient as criticism to maintain and improve the memory and understanding of an idea.

(c) A failure to take account of competing ideas. In the modern world in which many ideas are easily available through T.V., radio, and literature any idea aiming at maximum spread is likely to have more critics than defenders. To combat competing ideas, one needs to understand them and the attitude that their adherents have toward them. Without such knowledge intrinsically very subtle and excellent arguments may be wasted because they do not address the adherent's premises, problem and styles (or methods) of thinking.

Thus we see that the logic of the propagandist's situation involves an implicit trade-off between the reproducibility and fidelity of his message and protection from criticism. His situation forces him, as it were, to make his message into some sort of publicly inspectable record: to write it down in a book or to make a tape recording etc. The message is then in competition with other networks of ideas. To propagate the ideology, its adherents need to present it to others who may criticise it. Those who will agree and pass the message on and those who will criticize cannot be determined in advance, so the avoidance of criticism cannot be guaranteed. The logic of the situation is that the propagandist must meet counter-argument.

The propagandist may not be able simply to avoid encounters with criticism without cost, but perhaps there are subtler defences of the ideology. The problem is that the defences cannot be controlled.

The propagandist's message, then, is no longer a changing and vague subjective idea but an object open to public criticism. This much is fairly obvious, but there are unforeseeable consequences of giving the message an objective form, and these flow from the logical character of any theory. It might be thought that the propagandist could prepare his message in advance to protect it from criticism. Perhaps by engendering a monopoly on the interpretation of the doctrine, as the Catholic Church is commonly supposed to have done. However, there are certain properties of the message that cannot be fully surveyed or known to the propagator and therefore cannot be controlled by him in such a way as to anticipate and avoid all or even most criticism. These properties are called the informative content and the logical content of a theory. They correspond roughly to what one might call the implications of a theory.

When one questions a theory one questions its implications. But there happen to be an infinite number of non trivial implications of any theory, and therefore an infinite number of possible criticisms. Clearly, the propagandist cannot prepare his theory or his recruits for an infinite number of possible criticisms. For example, the Marxists were not prepared for the Marginalist revolution in economics. If Marx had tried to prepare a defence in advance his chances of predicting this development would have been precisely zero. For any explicandum, there are an infinite number of logically possible explanations. Therefore, even though Marx was aware of the explicanda that other economists were working on, we may say that, other things being equal, no matter how many finite possible theories n he prepared for, the probability of his anticipating the marginalist theory would have been equal to n divided by an infinite number of possibilities: that is, zero. One might object that such an argument does not explain why multiple discoveries in science are so frequent as reported by Robert Merton. Indeed, this much higher than zero probability for multiple discoveries seems to be due to the fact that scientists in any field share a great number of assumptions, techniques, one might even say styles of thought. These common characteristics constrain the range of theories that may be discovered. But even if one admits this, the chances of consistently keeping even just ahead of the competition would seem to be vanishingly small. Only general defences, therefore, can be prepared in advance: that predicated on criticism in itself, for example the Marxist's tendency to dismiss any adverse criticism as bourgeois, or the Catholic Churches tendency to establish a monopoly on interpretation. Criticism itself has to be branded as treachery or heresy. However, as I intend to argue from these logical characteristics of theories, this has much less strength as a defence than is commonly thought.

If movements are so good at protecting themselves from criticism, why is it that they have a tendency to split? An important factor is that different individuals faced by the same criticism must improvise a defence there and then. As I have argued, criticism cannot be completely predicted and prepared for in advance, and since no two people understand a theory in exactly the same way, these improvised defences are almost bound to be different. It follows therefore that differences of opinion must arise both about (a) the interpretation of the doctrine and (b) how it is best defended. I include interpretation here because interpretation is partly a matter of seeing the implications of a doctrine relative to criticism. In understanding some criticism one is seeing some of the implications of the doctrine being criticised. It follows that the supposed monopoly of interpretation of the Catholic Church may well impede the search for truth, but it cannot guarantee its doctrine from criticism.

What about the general strategy to dub all criticism of Marxism as bourgeois or class treachery, or criticism of the Church as evil heresy? It is not always obvious what counts as criticism. It is often a difficult task to determine whether a statement follows from or contradicts or is compatible with a complex web of assumptions. A new doctrine seemingly supportive to an orthodox position may be taken on board and only later discovered after protracted chains of argument to be incompatible with it. This vulnerability exists even if all members understand the orthodox theory in the same way. But I have just pointed out that no two people understand the same theory in exactly the same way. Even if their understanding of a theory overlaps exactly to begin with, when they start to examine different unforeseen criticisms this overlap must begin to diminish. For as I have said, in understanding a criticism

one is seeing how it relates logically to some of the, perhaps unsuspected, implications of the theory.

There is a strong counterargument that is worth examining. The above argument depends on the assumption that different propagandists improvise defences of the doctrine independently. But suppose each new criticism is presented to a leader (either individual or committee) who decides on what defence to use, or perhaps it is discussed at a conference and a vote is taken. This, one might argue, would eliminate unintentional differences in defensive responses.

I will ignore the fact that the costs of such a strategy would become prohibitive when the number of propagandists reaches a certain size. We will also ignore the implausibility of assuming that the propagandists simply become silent when confronted by new criticism: such a response would lower credibility. Instead we will focus on the problem of achieving conformity in the interpretation of the doctrine that such a defensive strategy involves.

There is another more subtle and extreme form of defense that might be thought to obviate the problem of spontaneous differences in interpretation of the doctrine and its defence. The idea is embodied in Orwellian Newspeak, a language that so embraces the thought of people that it is impossible to think outside its framework. Gellner, for example, thinks that economic liberalism is a perfect example of Newspeak:

Within this system, the notions which carry and imply this vision allow no alternatives, and those who have internalised these notions generally simply cannot conceive any alternatives to them. (Gellner, [1979], pages 282-283.)

It must be noted here that Gellner's position on this issue is not without ambiguity. ¹³ However, both sorts of defence succumb to a general characteristic of copying processes, independently of the problem presented by the unfathomable content of any doctrine. Reflecting on the learning of language, Hattiangadi argues that strict conformity is extremely difficult to achieve. When people learn a language they make conjectures about word meanings. If the guesses overlap sufficiently then communication is feasible. But there is at the same time a degree of unintentional and unforeseeable innovation in the language, simply because the overlap is not perfect. (Hattiangadi, [1987].) We may infer that the same imperfection would hamper any attempt to achieve conformity in the interpretation and use of defensive responses. The prescribed defences might be copied with devotion by the "faithful", but copying errors would be almost inevitable. For the same reason, any attempt to impose a form of Newspeak would founder because of the unintentional innovations introduced into the language when different people learn it. Darwin argued that new species emerged from earlier species by numerous, successive, slight modifications. One can easily see how copying errors in the interpretation of the doctrine and its defences can lead in a similar way either to a drift in the whole movement from the original doctrine, or (which is more likely) to the emergence of factions, each claiming to be the carrier of the true message. In either case, the defences would have failed to guarantee the doctrine against criticism.

Given such an analysis of the propagandist's situation it becomes less plausible, for example, for all Marxists to stick rigidly to the evasive tactic of dubbing all criticism of Marx as bourgeois. And so it is not surprising to find that there are Marxists who do not use this rhetorical tactic, and would argue against its validity and use. And

there is nothing like criticism from within the ranks to undermine morale. Of course, each splinter group may adopt the habit of calling all other splinter groups bourgeois or class traitors, but as the number of splinter groups grows, this rhetorical trick wears thin.

A similar phenomenon occurred in regard to the belief in miracles. G A Wells points out that when rivalry between different religions happens, the miracles of the rival have somehow to be discredited:

The Protestants in Europe denied the reality of the Catholic miracles, and the Catholic enemies of the Jansenist Port- Royal refused to credit the miracle of the Holy Thorn. Mutual criticism on the part of rival faiths tended to undermine and discredit the whole system of miracles. Attention was more and more directed to the possibility of error and fraud. (Wells, [1988], page 133.)

So we may conclude that due to the unforeseeable depths and ramifications of any theory and copying errors in the interpretation of the doctrine, it follows that sociologically an ideology cannot be guaranteed against criticism; and moreover, it will have a strong tendency to split both logically and sociologically.

The propagandist cannot simply conceal his message and avoid criticism, since he sacrifices potential new adherents. He must give it a permanent public form, open to competition from other ideas. However, having done that he can no longer control the evolution of the ideology through centralized control or through the imposition of a special language that excludes innovation, because different propagandists will interpret the doctrine differently and improvise different defences to unforeseeable criticism.

1.4. Protestant Liberalism

We are now in a position to apply these considerations to Bartley's own test case: Protestant liberalism. Is Protestant liberalism or its successors ideologies in Bartley's sense? Are they being retained regardless of the facts? On Bartley's own account it would appear that Protestant liberalism was abandoned in response to criticism. But more importantly, it was replaced by systems of thought that, although less openly critical, are systematically but unintentionally more vulnerable to propagandistic failure. They have jeopardized the propagation of their message by allowing too much room for variation in its interpretation.

In the introduction to The Retreat to Commitment, Bartley had provided a general definition of ideology and contrasted this with science. At best this introductory classification of types of networks of ideas is highly misleading. To recapitulate somewhat, Bartley implies that there are only two ways in which ideas can be eliminated:

(1) Elimination of inadequate ideas through deliberate criticism. This is the attitude of the scientist, whose success in at least approximating the truth, depends on his deliberately seeking error in his theories by deliberately subjecting them to the severest criticism.

(2) Elimination of inadequate ideas through the death of the carrier. Bartley illustrates this with Popper's example of the Indian community that died with its belief in the sanctity of tigers. Another example might be the extermination of the Albigensian heretics in the 11th Centuries.

This contrast is reminiscent of Edward Shils' inadequate contrast between ideologies and science, criticised above. Despite Bartley's extensive and insightful application of Popper's notion of the unfathomable content and ramifications of our ideas, he neglects to incorporate this approach into his general account of ideologies. He overlooks an extremely important third possibility: the unintended and unforeseeable encounter with effective critical argument. This criticism can come from either outside or from inside the movement. It is especially interesting when the criticism comes from its own propagandists. As I made clear above, however circumspect are the rules of study (in general, thought) the leaders of a movement enforce on its propagandists, they cannot determine which paths of study or argument will be free of awkward or ineluctable conclusions. Even the most innocent route to the aggrandizement of an ideology may lead to its destruction and shame. Protestant liberalism is one such ideology.

Bartley's suggestion also overlooks the possibility that an idea may lead simply to a lowered reproduction of the carriers, not necessarily their death. As I pointed out in the introduction one has to look at the rates of loss and gain in adherents. Even if members of a community are dying because of their belief in the sanctity of tigers, this belief may survive them if they pass it on quickly enough. However as Trigg has pointed out, is surprising how quickly even primitive people will abandon myths in the presence of counterevidence, as witness the success of missionaries in the nineteenth century. South Sea islanders discovered after the arrival of missionaries that taboos and rituals connected with sailing and fishing could be given up without anything terrible happening. (Trigg, [1985], pages 97-98.) Perhaps the sanctity of tigers is part of a larger belief

system that assumes that even more horrible things may happen if tigers are killed.

Early this century Albert Schweitzer, the principal critic of the liberal picture of Jesus, wrote:

Therefore there is hopeful significance in the fact that modern theology with its study of the life of Jesus, however long it might resist by the invention of fresh shifts and expedients, must in the end find itself deluded in its manufactured history, overcome by real history and by the facts. (History of the Life of Jesus. New Edition.)

It is interesting that Schweitzer was acutely aware of the possibility of what Popper would call immunizing stratagems: the "shifts" and "expedients". It was not long before Schweitzer's hope was fulfilled. As Bartley says himself:

Thousands of Protestant liberals soberly abandoned their Christian affiliations because they could not accept what appeared really to have been the 'Christian Ethic' as objectively determined by biblical scholarship. (Bartley, [1962], page 65.)

Bartley goes on to show how various Protestant theologians reacted to the collapse of the liberal picture of Jesus. Very importantly, Bartley points to the degeneration of the critical spirit in these theologians: Paul Tillich, Karl Barth, R. B. Braithwaite, Reinhold Niebuhr. However, none of them exemplify Bartley's general definition of an ideology, for everyone of them in fact espouses a doctrine that is tantamount to an abandonment of orthodox Protestant Christianity in response to criticism. To be accurate, none of them represent an explicit, forthright acknowledgment of error, but rather an unintended and confused abandonment.

Bartley sees a pattern in these differing attempts to reconcile Christianity and reason: any statement of the essence of the Christian message is revisable, but whatever the message turns out to be assent or commitment to Jesus is required. Recall that Bartley's general characterization of an ideology is a system of ideas that is retained regardless of the facts. It is this commitment to Jesus that constitutes for Bartley the non-critical constraint on the fluidity of this new protestant liberalism. Now Bartley's original characterization of the collapse of protestant liberalism is consistent with this. Protestant liberalism, says Bartley, began as a self critical system of ideas, but then in response to its own critical findings it became an ideology, closed to critical argument, and therefore able to be retained come what may. However, far from the system of ideas being saved and perpetuated regardless of the facts the strategy of the new protestant thought can only amount to a face-saving exercise at the price of propagandistic success. For the commitment to Jesus itself, being vague and arbitrary, cannot operate as an effective constraint on interpretation. The symbol system is retained but the range of interpretation has become even more flexible to accept diverse viewpoints and thus maintain membership of the movement. The movement is then defined as all those who adopt the same symbol system, whatever the meaning they attribute to it.

The unintended consequence of this strategy is that there is more room for undetectable dissent and fluctuation in interpretation of the symbol system. The various interpretations may be safer from explicit analysis and criticism and the explicit acknowledgement of error, but this may be bought at the price of propagational failure. Trigg makes a similar point, but on the assumption that the system becomes totally empty of meaning, which is not

necessary for my argument. (Trigg, [1973], pages 58-59.) An accumulation of numerous successive slight deviations may leave very little of the earlier interpretations left for propagation. The Protestant propagandist would then have failed.

Before the complete abandonment of Protestant liberalism through accumulated slight deviations, there is a reduction in the information and moral content of the system. If information is related to the number of possibilities closed by a message, then increasing the range of possible interpretations of Christianity decreases information. Neo-Protestant liberalism is then less able to offer adequate cosmological explanation and moral guidance. To say that one is committed to whatever Jesus happens to have said is not only to abjure any specific and explicit moral position, but is also to run a profound risk of immorality.

The thought of two of the most prominent neo-Protestant liberal theologians, Barth and Tillich, will serve to illustrate the general characteristics of this movement.

1.4.1. Karl Barth.

Barth rejects the methods of traditional apologetic theology as useless and irreverent. To argue for the Word of God is useless if one has already made the commitment to it and doubly so if the gift of faith is entirely in Gods hands, not dependent on argument. It is irreverent because one ought to be awed, trusting and obedient, rather than subject the Word of God to critical test against mere human standards.

The theologian should rather limit himself to the description of the Word of God and the critical discussion

of the supposed content of the word of God. But argument about whether the Word of God is true is forbidden.

This is quite different to fundamentalism since the Bible, and indeed all theological statements, are explicitly treated as fallible conjectures. The only theological statement that is treated dogmatically is the statement that the Word of God is true, whatever that happens to be.

Barth's proposal that assent to God be unconditional became the price of admission to many ecumenical organisations. Bartley conjectures that its popularity lay in the fact that it offered an island of stability and definiteness in a sea of tempestuous confusion about the essence of being a Christian. It allowed theologians of diverse opinion to be at least definite about their common ground.

However, even Bartley sees that the ostensible definiteness is merely ostensible:

Barth's formula was not of course without its own dangers, ones with which he never satisfactorily dealt; if the character of the Jesus or the Word of God to whom assent was required was indefinite, and if such commitment was required no matter what Jesus was and did, at best the subjective commitment itself would be definite. Its object would be an (I know not what and I care not what) - perhaps a less satisfactory object of worship. (Bartley, [1962], page 48.)

Barth was scornful of the protestant liberals for their use of argument and critical discussion in the search for the historical Jesus cast in the mould of social reformer. Barth's method amounts to an exclusion of certain sorts of questions and critical discussions while allowing others. But it is not altogether obvious that such a method will not become just a weak gesture of defiance toward the encroachment of argument. The licence for certain sorts of

argument may well function as a Trojan horse for other unintentional, unforeseeable and more damaging arguments, just like the methods of historical study of the protestant liberals.

1.4.1. Tillich

Tillich creates a theology more open to an accumulation of interpretative deviations by re-defining many Christian concepts in such a way as to deprive them of specific content, defining God in an extremely abstract, almost contentless way, repudiating the Bible as historical report, and his habit of creating an impression of profundity by using prepositions and abstract nouns uninterpreted by context.

Tillich rejects the traditional Christian definition of God as a unique, all knowing, all powerful, benevolent being, who makes personal contact with the believer. This conception, Tillich says, is far too abstract. One wonders what Tillich means by "abstract" for he himself defines God in an even more abstract way as the ground of all being. Actually, Wells discovered that Tillich has a number of definitions of God, nearly every one of which I think is more abstract than the traditional conception:

- (1) The infinite and inexhaustible depth and ground of all being.
- (2) Depth.
- (3) The depths of your life.
- (4) The source of your being.
- (5) Your ultimate concern.
- (6) What you take seriously without reservation.
- (7) The infinite and inexhaustible ground of history.
- (8) The depth of history.
- (9) The ground and aim of your social life.

(10) What you take seriously without reservation in your moral and political activities.

(11) Hope. (Quoted by Wells, [1988], page 80, from a sermon entitled "The Depth of Existence", from The Shaking of the Foundations, 1949, pages 52-63.)

Although Tillich rejects the traditional conception of God, none of these definitions rules it out as such, so Tillich's conception can easily accommodate a traditional Christian. But whereas the traditional conception was very definite, applying to a single unique being, Tillich's various conceptions are so indefinite and abstract that nearly everyone can find an application of at least one of them to something they think important or real. Even benevolence and justice, or any other virtue, is not required by these definitions. One could be a murderer, a liar and a thief and still be committed to "God": for these could be things you take seriously without reservation. So broad are these definitions that one critic desparagingly characterised Tillich's method as conversion by definition.

From Tillich's writings it is unclear what it is a Christian is committing himself too by committing himself too Jesus. Tillich seems to be aware of this need for ones commitments to have content and creates an impression that the commitment is profoundly meaningful by a liberal use of prepositions and abstract nouns. For example, he says the yoke of Jesus:

is not a new demand, a new doctrine, or new morals, but rather a new reality, a new being, and a new power of transforming life...it is a being, power, reality, conquering the anxiety and despair, the fear and restlessness of our existence. (Quoted by Wells [1988], page 90 from Tillich [1949], page 99.)

What being? What power? What reality? The definite reference is left open for the reader to supply.

Having repudiated the Bible as a historical report, any particular interpretation is less subject to criticism. One might think that this would be ideal for retaining and propagating a particular interpretation. However, the gain from a diminution of criticism may be offset by the greater difficulty of policing interpretations: the bible plus historical research can no longer be used as a constraint on interpretation.

In conclusion it might be argued that the intellectual reaction to the failure of Protestant liberalism was not a system that is retained despite the facts, but rather a symbol system open to more diverse interpretations. To some degree these interpretations are less open to criticism, for they are poorly expressed, if at all. Thus the resultant system is less open to explicit criticism and debate, but more prone to schism.

I do not want to suggest in this analysis of Protestant Liberalism that the move from the literal and specific to the vague and metaphorical is the only evolutionary path in response to criticism. The Catholic Church, for example seems to have become more and more specific. The early Catholic Church regarded the infallibility of the Pope and the immaculate conception as questions that should be left to the believer's own conscience. It was only in 1850 that the Vatican Council laid these down as explicit requirements of faith. An earlier issue was the interpretation of the Eucharist. Early Christians interpreted this custom quite freely, most of them regarding it as a memorial ritual. Later, Church Councils ruled that the bread and wine were literally the flesh and blood of Christ. There are three things to note about this. Firstly, that since Christians

are rational people and certainly not blind, the literal interpretation could only be maintained by the distinction between the manifest (or accidental) features of the sacramental bread and wine and its essence (or substance); the sacramental offering was the flesh and blood of Jesus only in substance. Secondly, despite its apparent safeguard against criticism, this literal interpretation was rejected by the Eastern Church, for example the Russian Church.

(Ware, [1963]) Catholic Modernism seems to have triumphed and to have heightened the urgency of the problem what makes one a Catholic. Pope Paul VI remarked: "Today we Catholics have doubts about who we are. We no longer teach catechism or church history." (National Catholic Reporter, October 22, 1976, page 6.)

1.5. Possible Exception to the General Thesis under Extreme Forms of Ideological Control

To recapitulate, the problem of this thesis is whether it is possible for a propagandist to guarantee the propagation of his doctrine, perhaps by guaranteeing it against encountering any criticism or simply being maintained in the presence of any criticism. I have considered Bartley's examples and found them wanting. But in order to test a theory in the severest way it is sometimes necessary to provide stronger examples than one's opponent. I intend to construct such an example in this section, and examine the logic of the situation that the propagandist would then find himself in.

Suppose a world government has discovered a method by which to make everyone incapable of innovative thought. Perhaps a drug or brain surgery would bring about this effect. I do not rule out the possibility of such a nightmarish world in which everyone is, if not in complete conformity, at least

something disturbingly like a docile mental clone. The people in this world would be more like Bartley's view of people in our world: slumbering fantasizers, only under this mental despotism they would all have the same fantasy, day after day, night after night.

Criticism depends on the ability to produce a new thought or apply an old one in a new way. Therefore the citizens of this world would be incapable of criticizing the approved ideology. They might be given perfect memories so that they would simply repeat the ideology unchanged even by copying errors. In this hypothetical world assume that the world government has complete control over societal processes to rule out deliberate or accidental deviations from the approved ideology. Is the propagandist's doctrine guaranteed against criticism and guaranteed in its perpetuation?

Providing no physical catastrophes occur, it has to be admitted that the propagandist's doctrine is safeguarded against criticism. But there is no guarantee against physical disasters that put the society in peril, and therefore the perpetuation of the ideology. Coping with a physical disaster may, and often does, require innovation. By definition, innovations are unforeseeable. They cannot be specified in advance, except sometimes in outline or in terms of the need they are to satisfy and the means available for their creation (and even here innovative thought is sometimes required to properly assess needs and means). The situational logic facing the world government, therefore, would require that it at least temporarily suspend the suppression of innovation. But innovative thought allows the creation of criticisms of the approved ideology. What might the government do to prevent this? It might be thought that the world government could guarantee against that by restricting the areas or subject matters in

which innovations would be allowed by a discriminatory use of drugs or brain surgery. However, even if one has a definite description of the problem that the innovative theories are to solve and even an outline description of the innovation, one cannot derive from this all and only the problems on which it might have a bearing. To do this one would have to survey the information and logical content of the theory, and this we have seen is impossible. One cannot therefore exclude its critical bearing on the approved ideology. To have any chance of perpetuating the ideology the government would have to take the risk that the innovation required to maintain the society may produce a competing ideology and/or the means of combating the government's repressive use of drugs or brain surgery.

Horrible despotisms that attempt to perpetuate a doctrine by school-indoctrination, T.V. and radio advertising, violence, censorship, spying, encouraging family betrayal, border-guards, death-squads, etc., are possible and have occurred frequently. My point is that the perpetuation of a doctrine against criticism is an extremely hard, delicate, costly and uncertain project. The extremes that some governments have gone to in their attempts to achieve this goal and their failure ever to impose perfect conformity only testifies to the difficulty of completely taming the voice of doubt, which eel-like has a tendency to slip out of the policeman's grasp when he least expects it to do.

Chapter 2

Darwinian Evolution, Human Rationality and Openness to Argument

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2.1. Darwinian Evolution and Human Rationality

The problem of this thesis is a problem in evolutionary epistemology applied to ideology. The traditional epistemological question is: how can we know? My approach starts with the question: how can we avoid knowing? In particular, how can the propagandist avoid the filtering affects of man's rationality? Can we argue that because of man's origin as a creature of Darwinian evolution man can always correct his errors? The question is not so much why people get things wrong, for any system capable of knowing is fallible. But rather having fallen into the pit of error by accident or foul play, can he in principle, alone or with help, always climb out? My answer will be that he can. I will argue that there are no evolved mechanisms in our psychology that perpetuate error come what may, but there are (fallible) mechanisms or dispositions for correcting error. I am not arguing, as some have, that because of our evolutionary history we must necessarily make progress in the growth of knowledge. Science may degenerate into a stale perpetuation of sacred texts, or it may, unintentionally, produce a society in which any one can easily construct weapons of mass destruction and destroy itself. But, short of destruction, man can always reverse regressions in the search for truth, or at the very least continue correcting error, even if we will not succeed thereby in getting closer to the truth.

This thesis is partly an internal criticism of the work of Popper and Bartley. If they accept Darwinian theory then, if they are consistent, they must reject their assertion that there are ideologies that are absolutely closed to argument.

I must first establish that they accept Darwinian evolutionary theory and that it plays a central role in their philosophy. Thus Popper says:

I do conjecture that Darwinism is right, even on the level of scientific discovery; and that it is right even beyond this level: that it is right even on the level of artistic creation. (Popper, [1981], pages 89-90.)

By "Darwinism" here Popper means something inclusive of Darwin's theory but more abstract. Any explanation of the evolution of a population of entities by a combination of their blind variation and selection or, more accurately, their differential elimination.

In a later paper, Popper argues for a much more general application of Darwinism, following Darwin's own assertions (in his Essay of 1844, The Origin of Species and his Natural Selection.) that the mental powers of animals and man are products of natural selection. Popper advocates that if conscious states exist then we should, according to Darwinism, look for their adaptive function. (Popper, "Natural Selection and the Emergence of Mind." in Bartley [1987], pages 148 - 149.) Popper reinforces this general approach when at the conclusion of his article he says:

...the process of variation followed by selection which Darwin discovered does not merely offer an explanation of biological evolution...but also of... "the entire range of phenomena connected with the evolution of life and mind, and also of the products of the human mind... (Ibid. pp. 152 - 153.)

Donald T. Campbell has clearly stated Popper's position on the relevance of evolution to a philosophical treatment of man:

An evolutionary epistemology would be at minimum an epistemology taking cognizance of and compatible with man's status as a product of biological...evolution. (Campbell, in Popper [1974], page 413.)

It is specifically Darwinian evolution that Campbell has in mind, which has the following form:

- (1) Blind variations in heritable characteristics.
- (2) Elimination of unadapted variations.
- (3) Reproduction of selected variations.

The word "blind" is used here instead of the word "random" for a number of reasons. The variations may be far from random: equiprobability is absent in organic evolution and creative thought; statistical independence of variations is also unnecessary. On the latter point, certain systematic sweep scanning mechanisms are recognized as blind in so far as variations are produced without any knowledge of which ones, if any, will produce a select-worthy discovery. There are three important connotations of the word "Blind": (a) Variations are independent of the occasion of their occurrence; (b) variations are uncorrelated with the solution, in that neither specific correct or incorrect trials are more likely to occur at any one point in a series of variations than at any other; (c) variation do not make use of the direction of error of previous variations. (Such feedback processes are themselves regarded as higher level blind variations.) Popper endorses Campbell's suggested use of "blind" rather than "random" in his reply to Campbell in (Popper, [1974], pages 1059 - 65.)

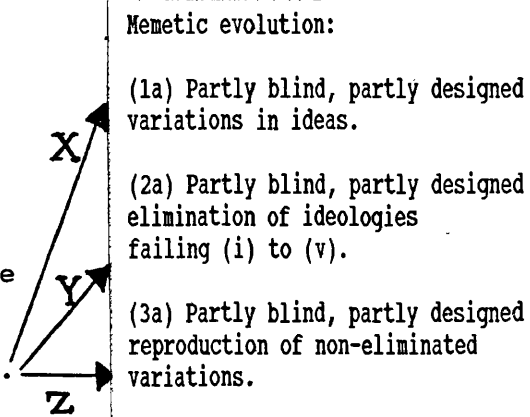
If Popper and Bartley are consistent, then their theory of ideology must be consistent with Darwinian theory. I regard the theory of ideology as part of an evolutionary epistemology. (It might be regarded as that part that focuses on the question of how knowledge may be avoided.) Popper's and Bartley's theory of ideology, therefore, must be consistent with both a selectionist account of our biological evolution and with a selectionist account of our ideational creations. Even though Popper does not explicitly mention ideology, he does see how a selectionist account is applicable on both biological and ideational levels. However, Popper has overlooked certain relationships between these levels that I explore in this chapter.

I intend to argue that on a selectionist approach to our biological evolution we should expect humans to be rational in ways that undermine the plausibility of Popper's and Bartley's pessimistic position on the power of argument to undermine ideologies. For convenience of exposition, the relevant ways in which humans are rational can be classified into: (i) economic, (ii) instrumental, (iii) exploratory, (iv) wishful, and (v) logical, rationality. They are examples of man's responsiveness to truth, and once in place, as it were, act as Darwinian-like filters in the ideational or "memetic" evolution of ideologies. Thus the three processes (1), (2) and (3) work through human biological evolution to produce certain rational dispositions that tend to eliminate unadapted variations in ideational, and therefore ideological, creations.

This relationship can be displayed in the following schema:

Biological evolution:

- (1) Blind variation in heritable organs and behavioural characteristics.
- (2) Elimination of organs and behavioural dispositions that cause a relative decline in genetic reproducibility.
- (3) Reproduction of "selected" variations.



(X, Y & Z indicate non deterministic influences.)

Human evolution might influence the character of the processes at (1a), (2a) & (3a). X might influence how imaginative humans are in the ideas they produce. Z might influence how efficient attention, learning and memory etc. are in perpetuating an ideology. But my main concern here is with how stage (2a) is furnished with dispositions that act to eliminate ideologies.

We cannot directly refute the idea that there are ideologists that are completely guaranteed from criticism. No matter how many supposed examples of such ideologists are shown to be spurious, the advocate of the irrationalist thesis can always maintain that we have not looked hard enough for an example. However, we can apply what Bartley has called a theoretical refutation. If Darwinian evolution is taken as background knowledge, then we are obliged to reject the irrationalist thesis on pain of inconsistency. Bartley himself has used Darwinian theory in this way to undermine anti-realist positions in the philosophy of science. (Bartley, [1987], pages 7-45.)

There is a strong criticism of this method that deserves a hearing. It might be said that such an approach is unfair since Darwinian theory itself has problems in explaining all

the facts within its domain. Here one might refer to the rattlesnake's rattle, or the electric eel's electric shock. Any rudimentary development of these characters would have been detrimental to the possessors and so eliminated. Stephen Jay Gould and others have pointed to other problems with Darwinism.

My response to this line of defence is to refer to an analogous situation in biology. If someone returned from a pioneering trip to a previously unexplored land in deepest Africa with tales of animals similar to ants in all respects but the size of elephants, the biologist would easily refute such a tale. As J S Haldane pointed out , animals are the size they are in accord with certain constraints imposed by physical, chemical and geometric considerations. Despite the implications of such Science fiction films as Them in which ants the size of houses terrorize the inhabitants of Los Angeles, ants that large would overheat and die. As an object increases in size its volume increases at a faster rate than its surface area. But the rate at which a body loses heat is proportional to its surface area. Thus there must come a point in the hypothetical expansion of an animal's body when the rate at which it loses heat is lower than its heat production. At that point and beyond the animal will heat up to the point where its biochemistry malfunctions and the creature dies. Biology is very far from solving all its problems, but the tale of the giant ants would remain roundly refuted. I contend that the absolutely stubborn ideologist is just as non-existent as the elephant-sized ant.

It must be said that even Darwinism's major critics such as Stephen Jay Gould maintain Darwinism's adaptationist element, rejecting only certain types of gradualism. They still rely on the idea of natural variation and natural selection. On the other hand, even if Darwinism is false,

may argument still carries through since it is an immanent criticism of Bartley and Popper.

I will briefly define each kind of rationality and then elaborate my argument in connection with each type of rationality. "Economic rationality" is short hand for "disposition to act in accordance with the laws of economics". "Instrumental rationality" is short hand for "disposition to abandon goals that seem unattainable". "Exploratory rationality" is short hand for "disposition to search for and value truth". The terms "wishful rationality" and "fearful rationality" are short hand for "disposition to generate and sustain beliefs in important issues even in the face of some counterevidence (which can then be thoroughly tested)".

After explaining and arguing for the existence of these various aspects of human rationality I will show how they fit into an evolutionary explanation of the development of ideas under criticism (2.8. & 2.9.). Thus, I intend to connect two levels of Darwinian-type evolution: the biological and the ideational. In this connection I will deal with some important theorists whose position disagrees with mine: Florian Von Schilcher & Neil Tennant, Jaques Monod, Ghiselin, Richard Dawkins and Ernest Gellner. I will argue that these various aspects of rationality furnish mechanism for the elimination of maladaptive variations in ideologies.

2.1.1. Economic Rationality

Humans weigh up costs and benefits. Here I allude to the postulates of Austrian economic theory, which has made a powerful case for the view that economic laws apply to all action, not only to financial contexts, but even to supposedly mindless or inexplicable or fanatical behaviour - hunger strikers, kamikaze pilots etc.

If economic postulates are true of all organisms then we have a strong indication that there is at least a general tendency for Darwinian evolution to produce economising organisms. This indeed seems to be true. Recent work has shown that even very simple organisms are economisers in this sense. There are recent moves to connect economics, behavioural biology and evolution.

The impetus for this comes from experiments with animals, in some cases extremely simple animals, that have severely tested the idea that economising behaviour is a product of Darwinian evolution. David Rapport, for example, has investigated a microscopic animal, *Stentor coeruleus*, and found its behaviour simple-minded but rational. When its food was hard to get, the *Stentor* made do with second rate food. However, when the cost of the "better" food was lowered, the *Stentor* would spit out the less-preferred food and concentrate on the more preferred. David Rapport concludes with the following observation:

The use of optimising principles has been implicit in much theoretical biology. As Rosen points out, "the idea that nature pursues economy in all her workings is one of the oldest principles of theoretical science" (Rosen, 1967.). The assumption of optimizing food selection behaviour appears valid provided natural selection is efficient in weeding out species or individuals which failed to make optimum food choices. (David Rapport, [1971], pages 757-87.)

One might ask, why should humans be any the less rational than a microscopic animal? If our capacity for argument has been tailored by evolution to serve economising, we may infer that humans will be open to arguments about the economic implications of their ideologies. (An obvious example is the fall of the ideology of the Soviet Empire and with it the Empire itself. The example is only obvious in retrospect for those who hold that argument is impotent, as illustrated by my quotation from Kolakowski.)

The evolutionary pressure to economise may be responsible for the economy of thought represented by the preference for systematically organised networks of assumptions of high information content that are axiomatizable with organic fertility. The axiomatization of a theory undoubtedly often presents formidable difficulty, but once achieved gives the theory great "promotion value", to use Monod's phrase. It would be hard to argue that the highly systematic character of Euclid's Elements had little to do with its reproductive success. However, here I wish to concentrate on the economic implications

2.1.2. Max Weber

The most influential and comprehensive opposition to the view propounded here is perhaps that contained in Max Weber's theory and classification of human action. Weber classifies action into the following classes: Instrumentally rational; value rational; affectual; and traditional. It is worth quoting Weber at length to anticipate any charge that I am misrepresenting his views by misinterpreting hyperbole as a serious position. My two main contentions are that (a) by implication the terms "value-rational action", "affectual action", and "traditional action" connote action which lies outside the influence of criticism; (b) the classification

breaks down, as Ludwig Von Mises has shown, since plausible examples of each class involves Weber's "instrumental rationality" (or more accurately, actions subject to marginal theory).

Weber defines "value-rational" action as that which is

determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behaviour, independently of its prospects of success.
(Weber, [1968], pages 24 - 25.)

Humans try to effect actions independently of their success. This could mean either (a) Humans strive to engage in actions that they believe to be impossible, or (b) humans strive to engage in impossible actions to approximate an ideal. Remember that according to Weber value-rational action is not action as a means to an end, so Weber could not say that the striving is an attempt to approximate an ideal. Hence Weber must be asserting that value-rational action chooses unattainable ends. This implies that value-rational action cannot be criticized on the basis of its practicability. The other clause does not present a problem, for this thesis does not deny that humans value some behaviours for their own sake.

But before criticizing Weber's position, I must make it even clearer that I am attacking no straw man. Weber goes on to claim much more.

Examples of pure value-rational orientation would be the actions of persons who, regardless of possible cost to themselves, act to put into practice their convictions of what seems to them to be required by duty, honour, the pursuit of beauty, a religious call, personal loyalty, or the importance of some 'cause' no matter in what it consists. In our terminology, value-rational action always involves 'commands' or 'demands' which, in the actor's opinion, are binding on him...On the other hand, the actor may, instead of deciding between alternative and conflicting ends in terms of a rational orientation to a system of values, simply take them as given subjective wants and arrange them in a scale of consciously assessed relative urgency. He may then orient his action to this scale in such a way that they are satisfied as far as possible in order of urgency, as formulated in the principle of 'marginal utility'...from the latter point of view, however, value rationality is always irrational. Indeed, the more the value to which action is oriented is elevated to the status of an absolute, the more 'irrational' in this sense the corresponding action is. For the more the actor devotes himself to this value for its own sake, to pure sentiment or beauty, to absolute goodness or devotion to duty, the less is he influenced by considerations of the consequences of his action. (Ibid. page 25.)

Weber is making the following claims:

(1) there are forms of behaviour which are engaged in whatever the cost (whatever the forsaken valued opportunities may be). But an important basis for criticism of a network of ideas is often its costliness, what other values have to be forsaken to implement the injunctions or plans contained therein. Value-rational action precludes this, thus restricting the types of relevant and effective criticism.

(2) That value-rational, affectual and traditional behaviour are incompatible with instrumentally rational behaviour (and thus not subject to marginal analysis). The same point about the narrowing of the range of criticism applies to Weber's traditional and affectual behaviour.

(4) That devotion to a form of action for its own sake implies a lack of consideration of the costs and benefits in doing so and not doing so.

I will deal with the notion of absolute ideals or commands etc in the section on absolute values. But for now I would like to make the following criticisms of Weber's position.

Economics analyses all action which involves a choice between scarce means to satisfy given ends. Weber erroneously restricts the range of economics. As already pointed out neither the means nor the ends need involve money.

Deliberation about consequences (marginal costs and benefits) itself involves increasing marginal costs because it consumes the scarce resource of thought power, which generally can serve different but incompatible projects. Thus cutting down on deliberation in the pursuit of important ends is subject to marginal analysis and is not irrational from this perspective.

Devotion to an end for its own sake may well be the result of a protracted consideration of the consequences of doing so.

The most fundamental criticism of Weber's position was propounded by Mises in [1933]. He showed that Weber's classes of action are not in the slightest degree

incompatible and that nothing that Weber says undermines the idea that marginal theory is applicable to them all.

Mises considers the following example of value-rational action:

If someone not only wants to earn his livelihood in general, but also in a way which is "respectable" and "in accordance with his station in life" - let us say as a Prussian Junker of the older camp, who preferred a government career to the bar - or if someone forgos the advantages that a Civil Service career offers because he does not want to renounce his political convictions, this is in no way an action that could be termed non-rational. Adherence to received views of life or to political convictions is an end like any other, and like any other it enters into the rank order of values. (Ibid. page 84.)

Mises suggests that a more accurate way of describing behaviour devoted to ideals

is to say that there are men who place the value of duty, honour, beauty, and the like so high that they set aside other goals and ends for their sake. (Ibid. page 84.)

That is, the consequences (more accurately, the opportunity costs) have been considered, but are not high enough to make the man renounce his pursuit of these goals.

Mises maintains that the same point applies to traditional behaviour:

When an aristocratic landowner rejects the proposal of his steward to use his name, title, and coat of arms as a trade mark on the packages of butter going to the retail market from his estate, basing his refusal on the argument that such a practice does not conform to aristocratic tradition, he means: I will forgo an increase in my income that I could attain only by the sacrifice of a part of my dignity. In the one case, the custom of the family is retained because

- whether it is warranted or not is of no importance for us - it is considered more "rational"; in the other case, because a value is attached to it which is placed above the value that could be realized through its sacrifice. (Ibid. page 85.)

Again, Mises points out that the opportunity costs are considered and not ignored as Weber would suggest.

The same is true of affectual action:

He who endangers his own life in rushing to the aid of a drowning man is able to do so because he yields to the momentary impulse to help, or because he feels it his duty to prove himself a hero under the circumstances, or because he wants to earn a reward for saving the man's life. In each case, his action is contingent upon the fact that he momentarily places the value of coming to the man's aid so high that other considerations - his own life, the fate of his family - fall into the background. (Ibid. page 85.)

Mises makes the general point that all these forms of action are the same in that they all

...choose between given possibilities in order to attain the most ardently desired goal. (Ibid. page 85.)

Mises speculates that Weber's fundamental error which has led him astray in his classifications is his failure to understand the universality of the propositions of sociology (here Mises takes economics as a subset of sociology). Weber continually falls into the mistake of restricting the applicability of the laws of economics, seeing them only from the point of view of the business man. Thus:

The theory of marginal utility treats...human action as if it took place from A to Z under the control of a business-like calculation: calculation based on all the relevant conditions. (As quoted by Mises, Ibid page 93.)

Thus where money is involved Weber is constantly thinking in terms of the businessman's maxim "buy cheap, sell dear" (this for Weber is the quintessence of rational action). Classical economics adopted this procedure, but it is not true of modern economics (post Menger, Jevons and Walrus, 1870), which adopts the point of view of the consumer, that is, everyone. Thus modern economics is not troubled by the fact that a buyer of soap may deliberately pay slightly more for it from an invalid veteran than he could buy it from the regular store; or by the sale by stores of goods specially reduced in price to attract customers.

This digression into the logic of modern economics is necessary to understand the confusions and errors that writers on ideology (that is, openness to argument) have fallen into. More importantly, it is clear that Weber's work cannot be used to restrict the range of potential criticism, without also rejecting fundamental postulates of modern economics, a theory of great information content, and also rejecting the fruitful application of economics to the evolutionary explanation of animal behaviour.

2.1.3. The Fanatic

Is the fanatic open to criticism? I argue that although impervious to some extent, he is nevertheless open to both self-criticism and external criticism. Fanatical terrorists, revolutionaries, Kami Kazi pilots, hunger strikers etc, are put forward as examples of violent ideological emotion completely devoid of reason. (Weber might put this sort of behaviour in the class of "value-rational action" or "affectual behaviour".) If this were admitted, then the associated ideologies would be beyond effective criticism.

Gustave Le Bon and Walter Laqueur

Gustave Le Bon, an influential writer on ideology and argument, held just such a view. Speaking of terrorists he says:

The mentality of martyrs of every kind is identical, whether political, religious or social. Hypnotised by the fixity of their dream, they joyfully sacrifice themselves to the triumph of an idea without any hope of recompense in this world or another...Persecution of them is powerless and only renders their example contagious...These facts and all those of the same order are very instructive. They prove the power of the mystical mind which is capable of triumphing over pain and dominating feelings considered to be the very basis of our existence. What could reason do against it? (Le Bon, [1895], pages 214 - 215.)

Le Bon's position confirms the soundness of the present approach, for he generalises his point to political, religious and social martyrs. Le Bon is indeed an important influence, which can be traced through prominent figures such as Adolf Hitler, whose views on propaganda are similar to Le Bons.

An echo of this sort of theory can be heard in recent work. Laqueur in The Age of Terrorism maintains that

The main difficulty is not that the rational model is useless with regard to people engaging in suicide missions (of which there are only few), but that it tends to ignore factors such as frustration, anger, fanaticism, aggression, etc., which are very frequent in terrorism. Above all, economic man is a rational being wishing to maximize beneficial returns; few people would go into a business in which the chances of success are as dim as they are in terrorism. (p. 153.)

The fanatic, who wittingly sacrifices everything he values to a single cause, who is unmoved by the perceived effectiveness and cost of his actions, is a myth. It has always been acceptable to romanticize and mystify the fanatic, either to portray him as subject to otherworldly laws or as unintelligibly crazy. But the fanatic is as subject to the laws of economics as Adam Smith's greengrocer. The hunger striker in the Maze prison or the Kamikaze pilot, both fighting for what they believed to be justice, were acting under a rational assessment of their goal and the price they thought they would have to pay in terms of forsaken opportunities. That price could have been too high. In fact for some potential recruits to the IRA the price was too high, as is evident in declining recruitment at the time of the hunger strikes.¹⁴ Le Bon's contagion evidently has its limitations. Laqueur, himself, seems dimly aware that skilful negotiation with terrorists has had some successes, but he does not draw the conclusion that this must be so because they are not zombies but rational beings who act in the light of what they perceive to be effective and economical means. The fact that their beliefs and values may be wildly at odds with our own does not place them outside of the field of economic analysis, and likewise does not make them immune to argument and criticism. This position of Laqueur's is odd considering that in his introduction he points out that increased repression decreases terrorism: terrorist incidents were more frequent in Spain only after Franco died, while terrorism in West Germany and Turkey grew under a movement to more social democratic or left-of-centre governments. (Ibid. page 6.)

The fact that few would go into a business with as little success as there is in terrorism does not mean that those few would not. Laqueur's argument here is like saying that since only a small percentage of the population become

directors of the international banks, economic theory cannot apply to them. The chances of becoming a world champion boxer are exceedingly slim for most men; does that mean that world champion boxers pay no heed to such things as the sacrifices involved and the financial incentives held before their eyes? Just as there is natural variation in height, weight, hair colour, there is natural variation in personality traits and values. Economic theory is not tailored to one personality type or even the average man, nor confined to certain sorts of values and the means for their attainment; economic theory applies to all values and all scarce means. Mises [1949] argues that marginalist economic theory, properly interpreted, implies that wherever there is action there are subjective costs and benefits and marginal theory applies just as strictly in non-financial as in financial contexts.

Are the chances of success in terrorism very thin? If the objective is to terrorize, it would seem that anyone can be a terrorist. If Laqueur responds by denying that terrorism is that simple, but rather involves delicate planning and has complex ulterior motives, then he must then view terrorism as rational action.

Laqueur's suggestion that terrorists are involved in suicide missions is misleading and false. The terrorist simply reasons that the attainment of his end will involve his death and is prepared to sacrifice his life for this end. Costs that would deflect others from their path fail to deflect the terrorist. If the terrorist could achieve his objective without sacrificing his life, he would do so.

2.1.4. Absolute values

Values are often urged by ideologists as absolute, unconditional etc. The fanatic, impelled by irrational emotion to sacrifice everything to some ideal end, personifies this. But it follows from economic theory that ideological values (however one delimits them) cannot in practice be categorically binding on anyone, not even the ideologist who peddles them.

An individual will sacrifice some of any value for a sufficient increment in any other value. And as values Y are sacrificed for increments in X, the value of an additional increment in X decreases and the value of an additional increment in Y increases. Eventually, an increment in X is worth less than an increment in Y, and therefore no more of X is sought. Most choices are of this incremental kind, not categorical. To take an example from political philosophy, Rawls ([1972], pages 3-4.) depicts justice as categorically binding: it is not incrementally inferior to any other value. It is allowed that some aspects of justice may be sacrificed for some other aspects of justice, but not in the slightest degree for any amount of any other value. Adam Smith held that some justice is necessary for any of the other desirable features of a society, but that not all increments of justice invariably outweigh increments of other things, and that the attempt to carry through into practice the categorical conception is doctrinaire and counter-productive. I would add that it never is carried in to action. An individual can choose to violate the laws of economics but he cannot succeed in doing so. Not even Rawls, I suspect, would hold fast to his principles if he thought that the attempt to fulfil them would result in mass starvation. If we are to countenance absolute values then we must reject marginal (that is,

orthodox) economics, a theory that has had much explanatory success.

We may grant that economic theory denies the absolute character of values, but how do we explain the fact that some values do at least appear to be held in an absolute way? I think a possible explanation is that some value systems can simulate absolute values. For example, some people may find murder so loathsome that the incentives required for them to violate that value simply cannot be physically realized, either because of natural laws or because of technical obstacles. It may be that our world rarely tests our adherence to some of our values to an extreme extent: rarely are people called upon, for example, to choose between murdering 2 people to save 10 or murdering 4 to save 20. (This hypothetical choice is formulated to exclude the option of not murdering anyone.)

2.2. Instrumental Rationality

Humans only pursue those ends they think attainable and use only those means they think effective. A person's use of tools and other means in the pursuit of goals is based on his theory of the world. It may be unconscious in the sense that he has never articulated it in language or in self-conscious thought. But even such inarticulate theories can be revealed when one is surprised when a tool, machine, or scheme of action breaks down. It might be objected that people use herbal medicines without any theory about how they work. But they do have a theory that they do work, a claim that may happen to be false.

Arguing that everyone operates with a theory about the use of an instrument or means may not be necessary for my point. It may be sufficient that the use of any means can be

brought under theoretical control so that the person can abandon its use under criticism.

One might apparently pursue what one thinks is unattainable as a means of approximating it or as a means of achieving some other end as a by-product. However it is clear that here one's goal is not the ideal but the approximation or some other end. If one thought that neither end were attainable one would desist. (For example, one might playfully strive for a goal one knew to be impossible to achieve; but then the goal would be playfulness, which if one came to think were also impossible would be abandoned.)

Humans abandon what they see as futile. Now, seeing something as futile is often (at least partly) caused by its very futility. It is instructive to note that one cannot say that often one believes something successful because it is unsuccessful. Here there is a clear advantage to truth.

Organisms that persist come what may with futile actions tend to be eliminated, while organisms that can abandon the futile tend to reproduce the genes responsible for that ability. Of course, as explained below, an ideal strategy would not be overly sensitive to signs of futility: the organism must not be discouraged too easily. Nevertheless, the organism must be capable of correcting its mistakes.

2.2.1 Possible Objection

A sceptic might question whether humans are interested in the truth or reality when they act. He might grant that humans abandon what seems to be futile, but, he insists, it is the experience of futility as such and not futility that matters to humans. As long as they seem to be doing what they want to do, they are unconcerned. Without this concern

there is no disposition to adapt to reality as such. Indeed on this theory, it might pay people who adhere to an ideology to avoid contact with counter arguments and evidence, since, they might reason, as long as we believe our ideology, that is all that matters. To rebut this possible objection I would like to use a thought experiment devised by Robert Nozick. Nozick actually uses the thought experiment to undermine eudemonistic utilitarianism, the idea that people simply want the pleasurable experiences in life; but the argument can be generalised.

Nozick poses the question: "what matters other than how people's experiences feel from inside"? To help answer this question he supposes

that there is an experience machine that would give you any experience you desired. Superduper neuropsychologists could stimulate your brain so that you would think and feel you were writing a great novel, or making a friend, or reading an interesting book. All the time you would be floating in a tank with electrodes attached to your brain. (Nozick, [1974], page 42.)

(The idea forms the basis of the film Total Recall, adapted from the book by Philip K Dick, We Dream for you Wholesale.) Would anyone plug in to such a machine? Nozick adduces a number of reasons why people would not : people want to do things, not simply have the experience of doing them; people also want to be a certain way; and, being plugged into the machine would limit us to a man-made reality, to a world no deeper or more important than that which people can construct. Nozick concludes that "Perhaps what we desire is to live (an active verb) ourselves, in contact with reality. And this machines cannot do for us." (Ibid. page 45.)

This argument harmonises quite well with my thesis. It implies that people want to use real means to achieve their

ends, and want to abandon really futile means or ends: the means and ends of fantasy are not enough.

The implication here is that to the extent that an ideology has practical implications it is subject to instrumental rationality and therefore open to criticism. Let us explore this in connection with rhetoric.

2.2.2. Rhetoric versus Theory

D J Manning maintains a position similar to that of Bartley's on ideologies:

An ideology can not be challenged by either facts or rival theories. (Manning, [1976], page 142.)

Manning's position differs from Bartley's in that Manning portrays ideas like Marxism as non-theoretical, but rather rhetorical devices to inspire people to do certain things or express commitment to a group. In so far as an ideology describes the world, Manning says, the world has no existence independent of the "practical understanding prescribed" (Ibid. page 142.) The implication is that (1) ideologies cannot be undermined by sound criticism because they do not actually make any factual claims, and this follows from their being rhetorical or expressive and (2) even if they did, the ideologists would be closed to sound criticism because the ideology acts as irremovable blinkers: the ideologist cannot conceive anything outside his ideology, let alone deal with criticism. In analysing Manning's position, an inconsistency over the descriptive import of ideologies should be noted. 15

Professor Minogue made it clear to me that there is a middle-ground: the point of theories like Freudianism and Marxism is not merely locutionary (to explain, to describe) but also practical, their point being revolution or therapy at least as much as finding out the truth. This important observation must be faced by any theory that gives an important role to truth in the elimination of ideologies. Does this practical or rhetorical element exclude truth? What precisely is the relationship between rhetoric and theory and truth? We will also examine the role of lying in rhetoric. It will become apparent that the mendacious propagandist is constrained by certain logical properties of theories, specifically the way in which his lies combine logically with his other assertions.

We must begin by noting that even rhetoricians are guided by a theory as to the most effective way to motivate and direct peoples' action, and thus we have an instance of instrumental rationality, and hence an avenue for a challenge from facts or rival theories. Manning's claim that the expressive or in general rhetorical function of ideologies rules out the logical and hence the psychological relevance of truth can be examined more thoroughly by reference to the work of Austin.

2.2.2.1. J L Austin

The theory of rhetoric has in recent years belittled the role of truth in persuasion, forgetting important contributions from Socrates. This development can be traced to the work of Austin, though perhaps more precisely to a misunderstanding of Austin's later thought. Austin's earlier work made a very strong distinction between utterances that do things (which have no connection with truth) and others that can be evaluated with respect to truth. Austin's later work rejected this analysis, but it is his earlier work that is remembered.

Austin's most acclaimed work is his contribution to a symposium on "Other Minds" [1946]. In this article he uses an analogy between "knowing" and "promising". Knowing was usually thought of as a special mental state, and to assert that "I know that S is P" is to report that I am in that state in relation to "S is P". This false dogma rested, Austin thought, on the descriptive fallacy, the supposition that words are only used to describe. On the contrary, Austin argued, to assert that I know is not to describe my state, but to give others my word, my authority, for saying that S is P, just as to promise is to give others my word that I will do X. This reasoning led Austin to distinguish between performatives and descriptives, the former being utterances that do certain things, the latter being utterances that describe. In this early work the two categories were taken to be exclusive.

In [1962] Austin raised profound doubts about the hard and fast distinction. First he restates the distinction more precisely. The word "descriptive" is abandoned as having too narrow a scope. Performative utterances, he suggests, are 'happy' or 'unhappy' but they cannot be true; it is

'constatives' that can be true or false. For example, "I name this ship Queen Elizabeth" cannot be false. It is 'unhappy' if I am not entitled to name ships or if it is not the right time to do it. "He named the ship Queen Elizabeth" is on the other hand, true or false, not happy or unhappy.

Austin then shows that the idea of putting particular sentences exclusively into one or the other of these categories has to be given up. Happiness and the question of truth apply to both performatives and constatives. The happiness of a sentence always depends on something's being true: that the formula is the correct one, that the circumstances are the right ones etc. Happiness and truth also interact in the case of constatives. For example, the sentence "John's children are bald" is unhappy if it refers to John when John has no children.

Those who would put ideological language outside the scope of an evaluation in terms of truth have a more difficult task in the light of Austin's findings. Austin shows that an attempt to separate the "practical" from the "theoretical" in the use of language is logically impossible. It would seem that in all uses of language man is concerned about what is true. (Notice, it is not being denied that language users have other concerns.) Arguably, this is due to two things.

Having evolved under the pressure of tailoring our plans of action (whether in deed or word) to reality to avoid frustrating our needs, we make conjectures, theoretical guesses, about the possible effectiveness of our actions in advance. In this way our ancestors could eliminate some incipient futile actions before they caused any damage or opportunity cost to the organism (and thus reduce its genetic reproducibility.) Language, considered as a

form of action, has evolved to fit this need, making a ubiquitous connection between the concern over the truth and "happiness" of our utterances.

2.2.2.2. Socrates

This last point connects well with a neglected insight of Socrates. In the Phaedrus Socrates poses the question:

Well, if a speech is to be classed as excellent, does not that presuppose knowledge of the truth about the subject of the speech in the mind of the speaker? (1988, Penguin, page 71.)

Phaedrus answers with what is now the common view:

But I have been told, my dear Socrates, that what a budding orator needs to know is not what is really right, but what is likely to seem right in the eyes of the mass of people who are going to pass judgement: not what is really good or fine but what will seem so; and that it is this rather than truth that produces conviction. (Ibid. page 71.)

Socrates' position is that even a speaker who wishes to mislead will be successful in so far as he is not misled himself. Socrates's argument for this is that misleading someone about reality requires small steps away from reality for it is slight differences between things which mislead. It then follows that the deceiver must know the true state of affairs in order to know that he is proceeding by small steps from reality to the false position. Thus the logic of the propagandist's situation would seem to demand that he cultivate an interest in the truth. However, Socrates's argument may have limited scope.

This argument covers the case of substituting a false position for an originally true position, but it does not cover the case in which the deceiver is trying to substitute one false position for another false position. It might be said that deceivers are not so much concerned simply to mislead but rather to mislead to a definite view; so it does not matter what the original position was. Hence it might be maintained that what the deceiver is normally concerned to know is what will seem true to his audience.

Nevertheless, notice that the logic of a mendacious propagandist demands that he cultivate a healthy interest at least in his opponents' theories, in order to judge their distance apart. We then have another pressure on the propagandist to learn the criticism of his position, for an opponent's criticism provides excellent clues about how he sees his own theory, what he would regard as a large distance and what a small distance between theories.

2.2.2.3. Unfathomable Lies

As we saw in chapter 1, all theories have an infinite number of implications in conjunction with other theories. To be precise, a theory's logical content and its informative content are each of infinite size. This has an interesting bearing on the old rhetorical trick, discussed by Socrates, of telling a small lie, L, in conjunction with a larger amount of truth, T. Our hypothetical propagandist reasons that glaring falsehoods are liable to detection and elimination; but if he surrounds his small lie with truth, it will escape detection and be propagated throughout the community. This is another and more formal way of putting Socrates's assertion that it is slight differences between things that mislead.

Now the propagandist is faced by the following problem. Since all theories have infinite logical and informative content, the propagandist cannot survey the whole content of his doctrine. It follows that he cannot survey the changes to the content he has committed himself to by conjoining T and L. As Gellner points out, all propagandists operate with a vast amount of opinion that they take for granted. (Gellner, [1979], page 124.) This may include a great deal of knowledge that they accept without at the time understanding, as when we accept the contents of a chemistry text book that we have not even read. Call this G. Assuming that propagandists do learn new things over time, there will be statements that they will accept in the future that they cannot now be aware of. Call this set S. Even though T and L may be consistent, certain unfathomable elements of T, L and G may be inconsistent.

Now from an inconsistency any conclusion whatsoever follows. This can be demonstrated by the application of just two logical rules of inference. We have already assumed that some statements are glaring falsehoods that cannot be sustained and propagated. Therefore, if "T & L & G & S" is inconsistent then the propagandist is committed to glaring, unsustainable falsehoods.

The propagandist cannot forestall this possibility by performing a consistency proof on the conjunction "T & L & G & S" since G is far too large, and S does not even exist yet.

We may conclude, therefore, that there are profound constraints on the use of deception by a propagandist to aid the propagation of his doctrine. It may very well back-fire because of the unfathomable depths of the theoretical changes he is committed to in combining a small lie with a large amount to truth. Thus we see that even deception,

perhaps the oldest rhetorical trick, offers no guaranteed net advantage to a false doctrine in the competition of ideas.

2.3. Exploratory Rationality

Humans, more than perhaps any other animal, have a strong instinct of curiosity. They are substantially interested in and responsive to the truth, to what the world really is like. Humans vary in their desire to explore. Of course, the value of exploration is not absolute; curiosity can be encouraged or discouraged. But there is in every human an instinct to discover, to know.

Popper himself has argued that we should expect humans as creatures of evolution to have a drive for exploration:

So far as the knowledge is not, somehow, genetically built in to them, animals and men can only gain knowledge if they have a drive or instinct for exploration - for finding out more about their world. Their very existence, to be sure, presupposes a world which is to some extent 'knowable' or 'explorable', but it also presupposes an innate disposition to know and to explore: we are active explorers (explorers by trial and error) rather than passive recipients of information impressed upon us from outside (Lamarkism, inductivism). (Popper [1974], page 1060.)

Such a view is hardly compatible with Bartley's picture of the average human existing in a "slumbering fantasy world".

Exploration can be undertaken by movement or sensory scanning (which itself consists of small movements).¹⁶ But it may also be done mentally. It can be done efficiently if our beliefs have some tendency to change spontaneously. Thus Popper also argues that natural selection will favour those organisms that are able to explore the world vicariously,

with the help of internal models of the world. This vicarious process of trial and error allows fatal projects to be eliminated before they are executed. (Popper, [1977], pages 151 - 152.)

It follows that our beliefs are never completely stable and from time to time admit of doubt. This makes sense if we see humans as actively discovering things about their environment by continually making hypotheses and testing them. Organisms that try out (or at least think of) different possibilities, if only momentarily, are surely better able to take advantage of new opportunities and thus enhance their genetic reproducibility. As in the case of wishful thinking, we have to admit that different sorts of belief will be differently weighted with respect to doubt: some beliefs may admit of only momentary doubt, others would be more stable. Every Marxist and every Christian has had doubts about their creed; that is exactly why doubt is given the stigma of heresy or unfaithfulness. Faithfulness requires a great deal of effort in the way of constant revision of the doctrine. But even if our memory were perfect we would never quite achieve faith because of these fundamental characteristics of our psychology.

Belief, then is like a search-light, continually scanning possibility space. To continue the metaphor, our beliefs (or better our attitudes to issues) differ in their range of scanning, some with a narrow scan, others with a wide scan.¹⁷

2.4. Wishful and Fearful Rationality

Many agree with Popper that if an ideologist does not want to be affected by rational argument, then even if he has to face it as a consequence of the logic of his situation, he can resolve to keep his cherished beliefs come what may. A variation on this thought is that wishes are a barrier to argument. An ideology is often said to be based on wishful thinking and hence closed to rational argument. Bertrand Russell held a similar position:

The cause of belief, here, is not, as in science, the evidence of fact, but the pleasant feelings derived from belief. (Russell, [1938], page 144.)

Many other influential thinkers have held the same view. Feuerbach, for example, held that religion was the result of a projection of the essence of man onto a supernatural being, the projection being caused by a wish:

it is not human misery in itself that creates the Gods, but the satisfaction this misery finds in the imagination, as the instrument of wish fulfilment, which creates and appropriates the objects of these wishes and desires; which in effect, objectifies them, so that they can be appropriated. (Quoted by M Wartofsky in his book Feuerbach, Cambridge University Press, 1977, page 216.)

However, to be accurate, it is not clear if Feuerbach regarded wishful thinking as a barrier to argument.

Focusing on wishful thinking overlooks the fact that people often believe what they fear. ¹⁸ But it is true that both wishful and fearful thinking are almost ubiquitous in the systems of ideas that have enchanted large fractions of mankind. Christianity is a good example with its heaven and hell, eliciting wishful and fearful thinking respectively.

Marxism with its promise of superabundance also enlists wishful thinking. Freudianism is a less obvious case, but nevertheless conforms. Freudianism promises a liberation from unnecessary repression of urgent desires plus a deep understanding of other people's minds, an understanding that surpasses their own. Now is thought guided by wishful thinking irrational, and is it closed to argument?

All writers agree that wishful thinking is irrational because it makes us impervious to counterevidence and impedes us in the pursuit of our goals. On the contrary, I intend to argue that wishful thinking is:

(1) an efficient way by which any organism may seek goals, because it generates and maintains beliefs that are relevant to goal attainment so that they can be tested to a degree proportionate to the urgency of the desired goal;

(2) open to argument, in the sense that beliefs sustained by it may be undermined.

(The initial insight that wishful thinking might allow beliefs to be tested I owe to Dr Lester who made this point in a private conversation on this issue in 1987. The rest is my own fault.)

I shall also argue that wishful thinking is thought to be irrational because of the ubiquitous assumption that only justified beliefs are rational. Justifying a belief requires a certain procedure. Since it is thought that coming to a belief via wishful thinking is not a process of justification, it is automatically concluded that such beliefs are irrational. Pears, Elster, Lukacs and Meyerson make this invalid leap. Using Popper's arguments I am able to show that such writers have been misled by justificationism. The role of wishful thinking as a guide

in goal attainment becomes clear, once justificationism is discarded.

Both wishful and fearful thinking are rational and open to criticism, and moreover, can be shown to be so from Popper's own principles. Wishful and fearful thinking have evolved through Darwinian biological processes because they facilitate the organism's exploration of reality in the pursuit of its goals. Failing to generate wishes relevant to one's desires and failing to persist in a wishful belief in the presence of some counterevidence is likely to place organisms at a disadvantage in survival and hence reproduction.

2.4.1. David Pears

The wish that something is true sustains the belief that it is in the face of evidence to the contrary. This is what is thought by many to be one reason for describing wishful thinking as irrational. David Pears in Motivated Irrationality is a typical example.

...reason itself has certain bad habits...For example...a person's first formulation of a theory is obstinately retained even when further evidence is telling heavily against it. (Pears, [1984], page 9.)

Pears asks us to consider the slightly different case of a driver who goes against evidence already in his possession:

...he judges it best that he should stop at two drinks in spite of the pleasure to be had from more. Nevertheless, when he is offered a third drink, which we may suppose is a double, he takes it...If the guest persuaded himself that doctors are just wrong about the amount of alcohol that can be taken without loss of judgement or slowing of reactions, he was going against the evidence in

his possession and merely making a wishful guess at the facts. That would be a clear case of incorrect processing of information and so, by the suggested criterion, a clear case of irrationality. (Pears, [1984], page 13.)

This argument implies that retesting a hypothesis whose importance has increased is irrational. But this is not so. It is true, of course, that alcohol degrades performance and increases the risk in driving. But under the influence of alcohol the driver's values have changed, and the marginal cost of incurring increased risk is worth less than the marginal value of an extra drink. But as a consequence the value of testing the belief that three drinks is too risky has increased. The fact that the test involves increased risk to the life of the driver does not alter this fact. The fact that a wish prompted the man to entertain a false proposition which he earlier had rejected does not make the man irrational, since being liable to error is something that only Gods can avoid. The relevant question is: is the driver now beyond persuasion by even stronger arguments?

A clearer case than the one Pears presents is that of the jealous lover who suspects there is a rival round every corner. This makes sense as a strategy for the rigorous testing of a very important hypothesis: that the lover is faithful. Rivals are more liable to detection and thwarting if the lover is always on the look out. This is a case of fearful thinking. A parallel case of wishful thinking is when a jilted lover thinks he sees his lover all over the place and finds himself running up to strangers only to be embarrassed. This example illustrates how wishful thinking might serve the interests of an individual. (Admittedly, this is not ideological thinking, but obviously can be easily generalized.)

In Pears's argument we may discern a strong element of justificationism. For Pears, any rational belief or action must be based on evidence; mere guesses prompted by wish are irrational. But even a guess can be true, and one can act no better than in the light of what is true. (cf. chapter 1 on C.C.R.)

2.4.2. Jon Elster

Elster's arguments also illustrate how justificationism can be fundamentally misleading in discussions of this issue. Jon Elster argues that there is no tendency for wishful thinking to promote goal seeking. Elster acknowledges that a wishful belief may happen to be true or efficient. However, this is a chance affair and irrational:

A belief about instrumental means-ends relationship, if true, is no less efficient because it is arrived at by wishful thinking. But of course, instrumental beliefs shaped by interest will serve interest only by fluke. (Elsters, "Belief, Bias and Ideology", in [1985], editors: Hollis and Lukes, page 142.)

Wishful thinking would be even more irrational than weakness of will" because "a desire could never rationalize a belief.

We may surmise that for Elster, the generation of a belief through a wish could never rationalize a belief because this is not a justificatory procedure. Elster is fairly subtle though, since he does point out that a wishful belief may happen to be justified on other grounds. So a wishful belief may happen to be a justified true belief: a piece of knowledge as traditionally defined. But this is pure coincidence.

In general, Elster argues for the following proposition:

There is no reason to suppose that beliefs shaped by interests tend to serve these interests. (Ibid. page 143.)

On general grounds, distorted beliefs cannot be expected, any more than illusionary beliefs, to be very helpful for goal achievement. (Ibid. page 141.)

The "general grounds" that Elster speaks of are not forthcoming. His arguments consist of envisioning hypothetical situations in which wishful thinking leads to erroneous beliefs or (detrimental consequences) in which the individual's interests are thwarted by the way others react to his wishful thoughts.

Consider this argument of Elster's:

If out of wishful thinking I form a belief that I am about to be promoted, my subsequent display of unwarranted self confidence may destroy once and for all my chances of promotion. (Ibid. page 141.)

Elster points to the Lysenko affair, the disastrous nature of which, Elster asserts, was brought about by scientific beliefs being formed by wishes. Quoting Paul Veyne, he points to the possibility that the "exploited and oppressed classes" may out of wishful thinking suppose that their fate is just and proper.

These examples show at most that wishful thinking can produce error and thwart interest and desire. But someone arguing that wishful thinking acts as a guide in the pursuit of goals is not committed to the view that wishful thinking is infallible. Nowhere does Elster show that wishful thinking leads either systematically or by tendency to erroneous beliefs or the thwarting of interest or desire.

Elster is lead astray in his analysis of wishful thinking by his acceptance of justificationism. This is most clearly seen in his book Making Sense of Marx.

Summing up, the presumptions that a socially caused belief will not be rationally grounded, and that a belief which is not rationally grounded will be false, creates a case for the falsity of socially caused beliefs. To repeat, such beliefs may well be true, like the broken watch that tells the correct time once every twelve hours. The point is only that we cannot expect them to be true. (Elster, [1985], pages 474 - 475.)

Why, according to Elster, are socially caused beliefs irrational? Because

...a belief is rationally caused if (i) the causes of the belief are reasons for holding it and (ii) the reasons cause the belief qua reasons, not in some accidental manner. Conversely, they are shaped in the wrong way if irrelevant causes enter into their formation or they are irrelevantly shaped by relevant causes. Among such irrelevant causes we may cite the interest or position of the believer; hence socially caused beliefs are not rationally caused. (Ibid. page 474.)

Clearly, Elster accepts the traditional definition of knowledge as justified true belief. Elster points out that a justified belief may be false, because a justified belief is one that has the right relationship to the evidence, not the world. But, Elster continues, justificatory procedures are chosen because they are conducive to the goal of truth. Since wishful thinking is not a justificatory procedure we cannot expect it to help discover the truth.

2.4.3. Georg Lukacs

Elster's position is fairly sophisticated and does not fall into the same error that many sociologists of knowledge since Karl Mannheim have: the self undermining idea that since all theories are socially caused they are all false, or at least a presumption of being false. Elster is right to reject the solution offered by Georg Lukacs and others that Marxism has a privileged character, but his own solution is really superfluous.

Georg Lukacs tried to defend the special character of Marxism, by arguing that Marxism is the theory of the proletariat, a class acting in the interest of humanity and not in its own narrow class interest. Georg Lukacs assumed that a class whose beliefs are shaped by its own peculiar interests must have a false consciousness: its understanding or theory of society must be false. Lukacs explanation for the systematic error of a narrow class is that it would be against its interest to have a true understanding of society. But a class whose interest coincided with that of humanity as a whole (i.e. the proletariat) must have a true consciousness: its theories of society must be true. Why did Lukacs think that the proletariat were infallible in this regard? Because, he assumed that for the proletariat, its self-understanding and its process of achieving humanities interest (i.e. communism) were identical.

Elster contests that social causation is social causation and rational causation is rational causation; and a belief caused by social position or interest is not made any more rational by the social position or interest being that of humanity as a whole rather than some sub-group. Marxism, Elster insists, needs another answer to this problem.

Elster's answer begins by distinguishing between an ideology that arises spontaneously and independently in the minds of many individuals and a belief that arises in the mind of some individual and is then accepted by many others because it corresponds to their material interest or social position. In the latter case, Elster's argues, the belief will be socially caused for many but that will not create a presumption against its truth, because there is no reason to believe that the originators of ideas that subsequently end up as the ideas of the ruling class are similarly under the sway of irrational forces.

Elster applies this reasoning to the Mannheimian problem. Elster asserts that even if all widely accepted theories are socially grounded, this does not create a presumption against their truth if the social grounding operates via their diffusion and acceptance. Thus, on Elster's argument, Marxism is justified if Marx came to his theory via a justificatory procedure, i.e. if his beliefs were rationally caused.

Throughout his discussion Elster assumes that accepting a view because it corresponds to one's interest is irrational. But this may help in furthering the pursuit of one's goals, by allowing one to try out, to test a hypothesis relevant to one's goals; and this applies whether the view was generated by one's interest or accepted from another. The belief may not be understood as a hypothesis in the way a scientist views his hypotheses, but the belief will function as one nonetheless. Moreover, nowhere does Elster show that beliefs accepted on account of their conformity to one's interests are immune to change through argument. Surely, if a belief is open to argument then its origin (whether it is justified or not) is irrelevant.

The terms of the whole debate between Lukacs and Elster are wrong. The concern over the origin of beliefs is misleading, for it ignores what is done with beliefs once acquired. I maintain that beliefs cannot be justified, but even a belief arrived at by the finest justificatory method may (logically) be held in an uncritical, dogmatic way. The belief that a belief has been justified may create a presumption that it is true, reducing the urgency of confronting criticism.

Elster's definition of a rationally caused belief is perilously close to absurdity. If, as Elster insists, a belief is rational if and only if its causes are reasons for holding it, then Elster must also assume that there are reasons that are not constituted by beliefs. Such non-belief reasons would have to form the beginning of any chain of causes causing a rational belief if Elster is to avoid an infinite regress. If all reasons are rational beliefs, then according to Elster's definition any rational belief would have to have a rational belief for its cause and this belief in turn would have to have a belief for its cause and so on, ad infinitum. But Elster fails to hint what kind of non-belief reasons these would be. Immediate experience cannot serve this role for all our experience is belief impregnated. The best tested theories in psychology imply that even apparently simple visual experiences involve complex beliefs.

Epistemologically it does not matter how a belief was produced. All that matters is whether it is open to criticism, and what is done with it in response to criticism. Mannheim and Lukacs fell into their insuperable problem by taking justificationism for granted. Justificationism searches for authorities, whether in reason, experience, gods or intuition etc. Lukacs thought

he had found an ultimate authority in the consciousness of the proletariat.

Accepting these points a defender of Lukacs position may well retort to Elster's argument by saying that it is the bourgeoisie's dogmatic stand on their ideology that is important: and it is their type of narrow class interest that maintains the ideology against argument and appeal from other classes. In fact this is what Lukacs seems to be saying when he says that the capitalist class cannot understand the proletarian viewpoint because it is against their interest. But then Elster could respond by pointing out that Lukacs does not show that the proletarian interest is any different: the proletarians may be just as dogmatic as the bourgeoisie. Lukacs failed to see this possibility for he had already concluded that the proletarians had a privileged epistemological position: they just could not be wrong, even in principle.

Lukacs position is possibly the most extreme statement of the irrationality engendered by interest (which we may gloss as wishes). Not only is the capitalist class prevented by their wishes from agreeing with the proletarian position, but their wishes prevent them from even understanding it. (Lukacs complicates this slightly by saying that one can only understand the proletarian position by being involved in their struggle for communism. So there are two barriers to criticism.) ¹⁹

It is apposite here to point out that we may deny the premise of Lukacs' argument. Commentators on positions such as Lukacs' take for granted his contention that the interests of the two classes, the working class and the capitalist class, are incompatible with respect to communism. However if, as suggested by Marx, everyone will have a higher standard of living in communism it would

clearly be in the interests of the capitalist class to promote communism.

In assessing the presumption that wishful ideologies lead systematically away from truth, impede goal attainment and are closed to argument let us return to an eagle's eye view of man as a creature of evolution. Let us construct the logic of the situation facing our ancestors (plus their close relatives who failed to cope with it).

2.4.4. Wishful Beliefs and Efficient Testing and Exploratory Behaviour.

In the efficient pursuit of any goal an organism must discover the possibilities open to it. Since it is fallible and mostly ignorant of the world, it must explore some hypotheses. Now its ignorance is literally infinite, so there are an infinite number of possible hypotheses to test. It would be inefficient to pick hypotheses without any constraints. Can it eliminate some (ie, some ranges) of these hypotheses? Clearly it can eliminate all those that are irrelevant to the pursuit of its goals. Already we have a tendency for the organism's beliefs to be related to its interests. Can this relationship be brought still closer?

In the following bear in mind Popper's view of man as a creature of Darwinian evolution. Very desirable or fearful possibilities are worth testing for. Organisms that do not test for very desirable or fearful possibilities would tend to be eliminated in favour of our more circumspect ancestors. (Here I assume that evolution has already made desires and fears fairly well correlated with reproductive needs, though I should add that the correlation need not be exact.) But in order for a possibility to be tested a relevant belief has first to be generated.

Moreover, the more desirable or fearful the possibility the more testing it is worth; hence the belief has sometimes to be retained in the presence of (some) counterevidence. I assume here with Popper that all organisms - indeed, all knowledge acquiring systems - are fallible. That means that organisms can be wrong not only in their initial hypotheses but also in their interpretations of tests. Even the results of observational tests are provisional, and are sometimes worth retesting (Popper, [1934].). Beliefs that concern very valuable things are often for this reason difficult to dislodge (for example, "irrational" jealousy, beliefs in ghosts of lost relatives, belief in a world of superabundance etc,).

Thus we see that the action of natural selection working on organisms subject to certain properties of theories and methodological considerations can be expected to produce organisms that have a tendency to wishful and fearful thinking.

This analysis of wishful and fearful thinking by applying Popper's principles is necessary if we are to take account of the stubbornness of some systems of ideas. This is an important element of truth in Popper's and Bartley's idea that ideologies are unresponsive to criticism. However, by placing them in the context of an evolutionary view of man, we are also in a better position to see that wishful and fearful thinking are no guarantee against criticism, but in fact are ways of making the most of criticism. For the stubbornness with respect to criticism is not absolute, but proportional to the importance of the values at stake.

2.4.5. Absolute versus Value-relative Stubbornness

But what prevents the propagandist making himself absolutely stubborn?

Eric Hoffer maintained that:

The readiness for self sacrifice is contingent on an imperviousness to the realities of life"...and..."Strength of faith, as Bergson pointed out, manifests itself not in moving mountains but in not seeing mountains to move. And it is the certitude of his infallible doctrine that renders the true believer impervious to the uncertainties, surprises and the unpleasant realities of the world around him. (Hoffer, [1962], pages 75-76.)

Is it possible through argument, experience, or commitment to get into such a state? Are there evolutionary reasons why this is unlikely? In answering this question we need to understand the nature of belief in the context of evolution.

Popper describes the ideologist as if he had a choice whether to (a) resolve to adopt a belief in a position; and (b) resolve to continue believing in the position come what may:

Thus when those who praise commitment and irrational faith describe themselves as irrationalists (or post rationalists) I agree with them. They are irrationalists, even if they are capable of reasoning. For they take pride in rendering themselves incapable of breaking out of their shell; they make themselves prisoners of their manias. (Popper, [1967], page 365.)

However, neither (a) or (b) is possible, because belief is involuntary. This statement is easily misunderstood, so I shall expand on it. It does indeed derive from Locke's doctrine, but Locke put severe restrictions on its generality which are unnecessary. ²⁰

We can choose to listen to, read or participate in an argument. We can choose to follow a lifestyle that encourages or discourages seeking out views contrary to our own. We can also set out to argue ourselves into or out of certain beliefs. (Indeed, maintaining a belief requires maintaining the memory of the relevant information - revision - which itself is clearly a matter of choice). This is another important element of truth in Popper's and Bartley's account. Indeed, it is this truth that makes the cultivation of the critical attitude and associated institutions of fundamental importance.

But at the end of an argument or after having heard or read a counterargument, we find that we have involuntarily retained or lost the belief. Believing is rather like seeing: we can choose to open our eyes but once open we will see something independent of our wishes or resolutions to the contrary. This is not meant to imply that sight is infallible, or that it is a completely passive process. Indeed, it involves many low and high level hypothesis testing active scanning mechanisms. (cf. Richard Gregory, [1966]) All that is implied is that these mechanisms do not prevent the correction of error, that we can be surprised by what we see. By analogy, our beliefs regarding states of affairs not immediately inspectable by sense organs can be surprised by what we encounter in an argument.

In private correspondence, Popper pointed out that this might look like a deterministic account of belief, which would then raise the obvious problem: do we believe what we believe because of the truth or just because we were determined to do so. If this were the case, then my argument that truth is important would be vitiated. However, involuntariness does not imply determination, though the two notions have often been confused. My

position agrees with Popper's attitude to determinism as argued in his [1982] and more recently in his [1990]. I conjecture that the formation of beliefs is an indeterministic process. I like to refer to indeterministic patterns as exhibiting constrained randomness.²¹ Beliefs are formed partly randomly, but there is a propensity for them to be about important issues, that is, wishful and fearful. There are other constraints on their formation, but these are irrelevant to this particular problem.

On evolutionary grounds why should we expect beliefs to be involuntary? The answer would seem to be that organisms that persist in beliefs come-what-may tend to be eliminated. We must expect there to be a limit, therefore, to the extent to which wishful and fearful thinking can sustain beliefs against contrary evidence, since any genes responsible for absolutely impervious wishful and fearful thinking would tend to be eliminated. Organisms that seek food simply on the basis of where they wish it to be, or try to escape predators by wishing them away leave few descendants. So from an evolutionary point of view we can expect even wishful and fearful thinking to be open to argument, albeit a long one.

It is interesting that Hoffer, like Kolakowski, picked the fanatical communist as an example of his claim:

The fanatical communist refuses to believe any unfavourable report or evidence about Russia, nor will he be disillusioned by seeing with his own eyes the cruel misery inside the Soviet promised land. (Hoffer, [1962], page 76.)

The emergence and success of perestroika undermines this claim. (The relapse back to a more Brezhnev style of government does not gainsay the fact that perestroika did emerge.) Of course, Hoffer could say that they must not

have been really fanatical after all; but this defence would not carry much weight.

Hoffer and Kolakowski could have presented a more subtle argument. Following Popper, they could have pointed out that our experiences are interpreted by our theories about the world. As David Hume argued in more particular terms:

...as force is always on the side of the governed, the governors have nothing to support them but opinion. It is, therefore, on opinion only that government is founded; and this maxim extends to the most despotic and military governments...
(Hume, [1774], page 29.)

Thus if Soviet citizens are convinced that there is no alternative to their miserable existence, or that the other alternatives are worse, or that their misery is only a temporary and regrettably necessary step to profound happiness, it might not be surprising if they still thought Russia to be the best society in the world. This would be what Hume called an opinion of interest. It might also be an opinion difficult to criticize and thus undermine psychologically. However, as we have seen, argument against the economic mismanagement and moral outrages of the Soviet Union has penetrated the supposedly impenetrable barriers to criticism.

Wishful and fearful thinking engender stubbornness in our beliefs, but as in all organisms capable of belief it is a relative stubbornness proportionate to the importance of the belief to the organism. Wishful and fearful thinking is a way, perhaps a crude way, by which an organism makes the most of its hypotheses and the counterevidence within the constraints of the organism's fallibility and in the light of the varying urgency of its values.

Meyerson is one writer who acknowledges the value of a degree of conservatism towards our beliefs in the face of counter-evidence, but who still thinks that ideological stubbornness is absolute. She fails to consider the possibility that the degree of conservatism may be proportionate to the degree of importance of the issue; stubbornness for Meyerson is either reasonable or absolute. Meyerson asserts that there is a difference between a scientist's "charitable" protective attitude to a theory's predictive failures and the digging-in that acceptance of an ideology involves, which is maintained "come-what-may". (Meyerson, [1991], page 61.) On my analysis it is not surprising that a scientist's defence of a possibly refuted theory whose truth or falsity has little emotional significance is relatively less stubborn than the ideologist's defence of a theory whose truth or falsity has great emotional significance. It does not follow that the defence of the latter is come-what-may, and Meyerson furnishes us with no general argument that this defence should be absolutely stubborn. Of course, methodologically one ought to positively look for sound criticism, and one might out of fearful thinking avoid what one suspects to be counter-evidence. Following Pears, Meyerson thinks that she has obviated the paradox of self deception, convincing oneself of a belief that one contradicts, by using the word "suspicion" rather than belief. (Meyerson, [1991], page 65.) One only suspects that there may be counterevidence, without actually believing that there is. But this seems to be a verbal slight of hand. Suspicion seems to be weak belief, rather than no belief at all. Now the strength of a belief may be indicated by how much a person is willing to sacrifice in action based on it, and all action is based on belief, whether weak or strong. Now it follows that Meyerson's fearful avoiders of counterevidence must be willing to make some sacrifice to avoid the possible counterevidence. But then it follows that their "suspicion"

must amount to some belief, that they actually doubt their cherished belief. It is also worth noting that it is hard not to surmise that people who are fearful of the truth understand that belief may be involuntarily undermined by the evidence despite their wishes to the contrary.

But is this weakened belief at least guaranteed against undermining counterevidence? No, for even our most fervent desire or fear cannot act infallibly to exclude from our view all possible counterevidence. Thus according to my analysis the belief may still be discarded in response to the right argument, whether looked for or not.

The major weakness in Meyerson's case is that she overlooks the evolutionary origin of our psychological make-up. As a consequence she feels free to postulate absolutely stubborn beliefs generated by wishful thinking, just as a science-fiction writer unconstrained by physics feels free to postulate rockets that travel at the speed of light. Like most writers who ignore our evolutionary origins, Meyerson assumes that the way we deal with counterevidence is tailored to our desire for contentment or a life free from doubt and uncertainty. However, what serves the reproduction of our genes may not coincide with what serves contentment. In other words what maximizes the reproduction of genes may not maximize the attainment of contentment; our evolved mechanisms for registering error may wake us rather unpleasantly from Bartley's "slumbering fantasy world".

In the light of the involuntariness of belief in response to counterevidence, and the fallibility of fearful attempts to avoid counterevidence, we may reject Popper's conclusion that only those who have chosen the rationalist attitude can be impressed by an appeal to experience and logical argument. We may say this because every person begins life

with a disposition to correct falsified beliefs, despite his wishes or dispositions to the contrary.

2.5. Logical Rationality

It might be accepted that it is very difficult and sometimes impossible to reject what one encounters in one's immediate sensible environment. Wishful thinking can be disappointed; fearful thinking can be relieved. The analogy with sight does have strength here. However, it may be objected that this applies only to beliefs concerning our immediate sensible environment. The strongest version of this line of argument is propounded by Wells, in his attempt to explain why religious ideas survive criticism:

Let me press this point concerning the correction of our ideas by experience. When our ideas about our immediate environment are very incomplete or erroneous, our behaviour is likely to be ill-adapted to our needs, so that we expose ourselves to some immediate unpleasantness. But in this way attention is called to our mistake, and we may be led to rectify it. If, for instance, we act on the belief that ether is a good fire extinguisher, we shall be in for a rude shock, and if we survive the experience, the belief will not survive with us. On the other hand, any ideas we may have formed about the nature of the universe, or about the distant future or past, are unlikely to lead to any noticeably inappropriate reactions on our part. Thus we may well persist in erroneous beliefs of these kinds all our lives without experiencing the smallest surprise or disappointment. (Wells, [1988], page 219.)

There are two responses to this challenge. The weaker of the two responses is that there is no reason to suppose that some types of belief use radically different brain mechanisms making them voluntary. Metaphorically speaking, evolution tends to work with mechanisms it finds to hand. There is no reason to suppose that the involuntariness of

more sophisticated beliefs would have been a handicap to our ancestors. But it could have been an advantage. This is made clear in the second and stronger of the two defenses.

I conjecture that an adequate defence against this argument lies in the evolution of our appreciation of logical rules.²² My idea is that an appreciation of logic evolved because of its utility in handling problems presented by our ancestors' immediate environment. First perhaps in the avoidance of predators and the capture of prey; later in the construction of tools. This grants the element of strength in Wells' argument: deficiencies in coping with immediate practical problems is a great selection pressure. However, the appreciation of logic was not tied exclusively to thought about the immediate environment. There was no evolutionary reason for this ability to be tied to immediate problems, so a general ability to sort beliefs according to logical rules was not eliminated. Analogously, one may learn to count coloured beads, but then automatically also be able to count, as an incidental by-product, apples and oranges or cars and trees. Again, an opposable thumb was selected for its advantage in manipulating rudimentary tools: this does not hamper pilots turning dials on a Boeing 747. General reasoning ability may have been a lucky advantageous by-product of the selection pressure on our ancestors to deal efficiently with their immediate environment.

Our ancestors were then able to compare alternative plans of action, whether short or long term. Their decisiveness would be enhanced by the very fact that they could see more readily which plans really were alternatives. And the more abstract their grasp of logic the longer the time span over which they could plan. More productive processes often require more time to put into effect: for example

sacrificing today's fish caught by hand to make a net that will bring in more fish tomorrow.

In addition, they were able to discard those plans which were internally inconsistent or conflicted with a general theory about, say, the whereabouts of game. They were able to do this before they committed themselves to a hunt for instance, instead of having to test directly every promising plan. As Popper so aptly puts it, he could begin to let his ideas die in his stead. They would also be better able to fashion a tool whose manufacture required a sequence of actions of limited permutability.²³

A tendency to think in accord with the rules of logic: the law of the excluded middle; the law of non contradiction; modus ponens etc. would clearly have been an evolutionary advantage given our ancestors's niche. It is not surprising to learn, therefore, that all the world's logics are extremely similar. As Staal says:

Although it remains uninfluenced by Western logic and stems from an entirely different tradition, Indian logic offers striking parallels to Western logic. (Staal, [1967], page 520.)

The same is true of Chinese logics.

In the light of the above defense it can be seen that Wells is misleading when he says in conclusion:

..beliefs which admitted of no practical demonstration and could be checked by no intelligible test could be entrusted only to words or to other equivocal ciphers and symbols which each generation had to interpret afresh according to its lights. (Ibid. page 219.)

This is misleading because it overlooks the check of consistency. Moreover, it overlooks the possibility that an

appreciation of logic evolved in connection with immediate problems of the environment but whose scope transcended this parochial domain.

The various ways in which humans can be responsive to the truth are not incompatible. Indeed, every action is under the control of exploratory, economic, instrumental and logical rationality.

2.6. Objection: Imperfect Selection

Karl Popper (private correspondence) has objected that Darwinian theory does not imply that organisms are perfectly adapted to their environments. Darwin himself was well aware of this:

Natural selection tends only to make each organic being as perfect as, or slightly more perfect than, the other inhabitants of the same country with which it has to struggle for existence...Natural selection will not produce absolute perfection...The correction for the aberration of light is said, on high authority, not to be perfect even in that most perfect organ, the eye. (Darwin, [1859], pages 229.)

Indeed, there are organs and behaviours that reduce the reproducibility of the relevant genotype. Maladaptive characteristics survive and are reproduced on the back of adaptive characteristics. I may add that if organisms were perfectly adapted it would be hard to understand extinction. The very fact that species become extinct implies that they were not perfectly adapted to whatever made them extinct. Therefore our inferences from the principle of Darwinian evolution have to be carefully qualified.

We can only argue that there is a rough and ready tendency toward the evolution of economic, instrumental, exploratory, logical and wishful rationality.

However, it is interesting to compare Darwinian and Lamarkian evolution in this regard. Darwinian evolution has at least a tendency to produce rational organisms; Lamarkian evolution (on its own) could easily produce irrational organisms. Lamarkian evolution relies on the inheritance of acquired characteristics, but many acquired characteristics are injuries. Brain damage impairing reasoning abilities would be passed on to the next generation, and (without Darwinian selection) accumulated down the generations. Without extinction - that is, Darwinian selection - organisms would tend eventually to reproduce mindless heaps of poisoned, lacerated flesh and fractured bone.

Thus Popper points out that there is no general tendency in Darwinian evolution to produce flexibility; it may well issue in highly inflexible behaviour. Popper drew the implication that there is no general tendency in Darwinian evolution to produce flexibility of belief, which I argued was useful for exploring the world.

Popper's criticism can only be met by pointing to the importance of the kind of selection pressures to which humans have been subject. When we look at the evolutionary conditions from before the emergence of *Homo sapiens sapiens* to the present, it becomes clearer that being economic, abandoning the futile, thinking logically, exploring the unknown, wishful and fearful thinking, and being flexible in belief have been a reproductive advantage. Wasting resources, pursuing the futile, ignoring the unknown, flouting logical rules, failure to persist in beliefs of importance, and being utterly rigid in one's beliefs has been a reproductive disadvantage.

More particularly, I pointed to *Homo sapiens sapiens*'s origin as a maker of tools, a hunter and a user of symbols. Both of these practises were part of the selection pressure acting, perhaps indirectly, on our ancestors' genes. This point of view is consistent with Popper's interesting theory of orthogenic trends in evolution. ²⁴

To maintain the general thesis I only need to argue for a propensity to correct errors in the ways I have specified, so perfect adaptation is unnecessary. Thus O'Hear's criticism ([1988], page 85.) of Munz's argument [1985] for evolutionary epistemology is misplaced, for evolutionary epistemology is not committed to the idea that organisms together with their perceptions, skills and knowledge are perfectly, or even near-perfectly, adapted to the world. The central point of evolutionary epistemology is that organisms can and have adapted to the world, that they can and have corrected errors. Perhaps all that is needed for a good adaptation, as for a good scientific theory, is verisimilitude; and if organisms can correct errors, then they can increase the verisimilitude of their beliefs plus the efficiency with which they eliminate error.

2.7. Irrelevant Forms of Irrationality

Someone might insist that people really are irrational in some ways. The word "irrational" has many meanings attached to it: it is no intention of this thesis to monopolize this word. The intention is to argue that any of the other ways in which humans can be called irrational place no absolute barrier to criticism, and do not give a net evolutionary advantage to false ideas. Humans may be called irrational because they are ignorant, make mistakes, or often entertain inconsistent beliefs. They have been called irrational because their values change with time. But none of these

insulate an ideology from criticism, or give a net advantage to false ideas. Ignorance and mistakes are simply due to our less than omniscient and infallible nature.

2.8. General Schema for the Evolution of Ideologies under Criticism

The evolution of ideologies under criticism may be analysed with the help of a schema. We will make use of this schema later in the analysis of the immunising stratagem in chapter 4. But it will help us to see how the biologically evolved forms of rationality (instrumental, economic, exploratory, wishful/fearful thinking, and logical) fit into the general pattern of the cultural, or memetic, evolution of an ideology. They in fact provide important mechanisms for the elimination of error or maladaptiveness in ideologies.

Bartley provides the following schema for the evolution of ideas which mirrors the evolution of genes:

- (1) Blind, or unjustified variation.
- (2) Systematic selection and elimination.
- (3) Retention and duplication.

Bartley's and Popper's suggestion here may be taken as a contribution to the theory of what Dawkins has called memetic evolution, "memes" being the ideational equivalent of biological genes.

Writers who have noticed an analogy between genetic and memetic evolution have been keen to point to the disanalogies. Two often noted disanalogies are that genetic evolution is slower than memetic evolution and memetic evolution is Lamarckian (Ruse, [1986], ch.2). Schilcher and Tennant ([1984], pages 118 - 119.) and Hallpike ([1988], page 36.) supply many more. (Incidentally, Schilcher and

Tennant wrongly suppose that genetic selection requires the death of the organism (7), whereas in fact it only requires differential reproduction.) Most writers assume that cultural evolution must be completely Lamarkian or completely Darwinian, but they are not mutually exclusive. For example, in Brainstorming one deliberately applies a heuristic for the generation of ideas and for their elimination, but this heuristic, the Lamarkian aspect, is but a guide and does not determine the range of ideas or their elimination. Also one can imagine that Brainstorming will be used in slightly different ways and some of the variations will be unintended but will survive because they work.

How are memetic evolution and genetic evolution related? My answer is that an important mechanism of Bartley's stage (2) is supplied by the kinds of rationality I have argued for. The systematic selection and elimination of ideas is carried out by economic, instrumental, exploratory, wishful and fearful, and logical rationality. That is, ideas are eliminated by people generating beliefs about important possibilities, exploring the unknown, trying to avoid waste, trying to think logically and trying to abandon the futile.

I am not arguing that these genetically evolved traits are the only eliminators of error. Nor am I denying that truth may also be eliminated and false positions maintained by processes working against the elimination of error. All I need for my argument is man's capacity to correct his errors in the sorts of ways I have outlined above.

I will now deal with my potential critics. We will see that none of them attribute a rational element to stage (2), to the elimination of error. This stage is regarded by them as either irrational or as ineffective: memes are either eliminated by things other than truth and validity or not

eliminated at all. However, they supply important insights that can be used to explore solutions to our problem.

2.8.1. Richard Dawkins

In The Selfish Gene Richard Dawkins developed the theory that with the emergence of the human brain a new type of replicator had come into existence. He called this the meme, a general term which includes ideas, theories, designs, tunes, fashions etc. Dawkins thinks it is worthwhile trying to explain culture in Darwinian terms, but that not all cultural phenomena can be reduced to genes and their evolution. The Darwinian process of selection is a much more general notion than that, and it can be applied to the evolution of memes. He makes it quite plain that memetic evolution can be quite independent of our genetic evolution. The meme for celibacy, for instance, Dawkins argues, is clearly independent of genetic evolution: it hardly increases the genetic reproducibility of those humans who replicate the meme.

The right conditions for a Darwinian evolutionary process seem to be present: variation in ideas; differential elimination of ideas; and ideas are reproducible.

Dawkins points out that the same three characteristics that make for high survivability in genes must be the same for memes: longevity, fecundity, and copying-fidelity. In other words, the longer a meme exists the greater is the chance of its being copied; the higher the rate at which copies are made the greater is the chance that copies of the meme will exist in the future; and the higher the precision with which copies can be made the greater the chance that copies will exist in the future.

(We can now make clearer the idea that a propagandistic advantage can be conferred on an ideology by insulating it from criticism. Any such insulation would have to operate by enhancing the ideology's longevity, or its fecundity, or its copying fidelity, or a combination of these.

We can also see here a partial explanation for the success of Marxism and Monotheistic religions which neatly harmonises with Meyerson's identity principle. A very general theory using only few premises clearly has more copying fidelity, since there are less distinct items to learn; and being general it has greater fecundity, since it lends itself to application on many problems. Less plausibly, it could be argued that it has greater longevity, as there is less danger of the parts being separated.)

Dawkins deals with two possible objections to his generalisation: the question of discreteness of the units of selection; and whether competition exists between memes. It is easy to see that memes are in a state of competition. The main means of replication for a meme is a person's brain, but a brain has limited processing capacity - limited storage and recall etc. The other problem presents a slightly greater difficulty:

At first sight it looks as if memes are not high-fidelity replicators at all. Every time a scientist hears an idea and passes it on to somebody else, he is likely to change it somewhat...The memes are being passed on...in altered form. This looks quite unlike the particulate, all or nothing quality of gene transmission. It looks as though meme transmission is subject to continuous mutation, and also to blending. (Dawkins, [1976], pages 194 - 195.)

In chapter 3 of The Selfish Gene Dawkins defines the gene, not in a rigid all-or none manner, but as a length of chromosome with just sufficient copying-fidelity to be

treated as a unit by natural selection. The same sort of definition, Dawkins argues, can be used to establish the particulateness of memetic evolution. Thus, an idea-meme is defined thus:

An entity that is capable of being transmitted from one brain to another. (Ibid. page 196.)

He illustrates this with Darwin's theory of evolution. Dawkins points out that different writers have their own way of interpreting Darwin's theory. However, we can say that:

the meme of Darwin's theory is that essential basis of the idea which is held in common by all brains that understand the theory. The differences in the way people represent the theory are then by definition not part of the meme. If Darwin's theory can be subdivided into components, such that some people believe component A but not component B, while others believe B but not A, then A and B should be regarded as separate memes. If almost everybody who believes in A also believes in B - if the memes are closely "linked" to use the genetic term - then it is convenient to lump them together as one meme. (Ibid. page 196.)

Does this solve the problem? Yes it does, but in a way that requires an unnecessary detour. For we know that theories are built of discrete units. These units may be called atomic propositions. It is already clear that one can have a fraction of a proposition, namely a rational fraction of a compound proposition, where the denominator is the number of atomic propositions. But one cannot have any sort of fraction of a proposition. For example, consider the compound proposition: "It is raining and it is windy." One could have one half of the conjunction: "It is raining", but to divide further would reduce the proposition either to nonsense or simply words, which, though meaningful, would not express any proposition at all.

Therefore Dawkins's worry about the discreteness of memetic evolution as applied to theories was unwarranted, and his solution is superfluous. Propositional and predicate logic have already discovered the ways in which propositions can be analysed into discrete units.

Dawkins's original intention, remember, is to argue that the evolution of memes cannot be completely explained in terms of their contribution to genetic survival:

We do not have to look for conventional biological survival values of traits like religion, music, and ritual dancing, though these may also be present. Once the genes have provided their survival machines with brains that are capable of rapid imitation, the memes will automatically take over. We do not even have to posit a genetic advantage in imitation, though that would certainly help. All that is necessary is that the brain should be capable of imitation: memes will then evolve that exploit the capability to the full. (Ibid. page 200.)

This general position is true, but in failing to look at the logic of the situation facing our ancestors (plus the variants that succumbed to it), Dawkins falls into the error of assuming that humans can be made immune (or impervious) to evidence and argument. It is therefore in his treatment of particular cases that Dawkins fails to carry through his programme.

In applying his general position to religion, Dawkins attempts to show that the memes of heaven and hell are self-perpetuating, and also that blind faith is possible. Dawkins' account portrays religion as more rigid than it is. It is worth quoting Dawkins's argument in full. First the argument that heaven and hell are self perpetuating:

The idea of hell fire is, quite simply, self perpetuating, because of its own deep psychological impact. It has become linked with the god meme because the two reinforce each other, and assist each other's survival in the meme pool. (Ibid. page 198.)

Dawkins attributes the perpetuation of the hell fire meme to an unanalysed "psychological impact". This does not allow us to explore the degree to which it is open to argument. Our analysis of wishful and fearful thinking, however, allows us to explain the "impact" of the hell fire and god meme. To recapitulate briefly, humans engage in fearful and wishful thinking about important possibilities. This tendency has evolved because it contributes to goal attainment. Admittedly, the hell fire and god meme as such did not evolve genetically, but they arouse tenacious beliefs because of genetically evolved wishful and fearful thinking.

Being without an evolutionary analysis of fearful and wishful thinking, Dawkins finds it easy to assume that blind faith exists:

Another member of the religious meme complex is called faith. It means blind trust, in the absence of evidence, even in the teeth of evidence...The meme for blind faith secures its own perpetuation by the simple unconscious expedient of discouraging rational enquiry. (Ibid. page 198.)

There are two interesting things here. Strictly, what Dawkins says is not incompatible with my thesis, but its

inaccuracy makes it very misleading at best. In saying that beliefs are sustained in the presence of counterevidence Dawkins commits no error, but in failing to qualify this statement, one can only infer that his intention is to say that the beliefs would be sustained come what may. But as we saw, this would not make evolutionary sense. Evolutionary theory suggests that there must be some responsiveness to argument. Beliefs cannot be blind. Interestingly, Dawkins has confused two senses of being closed to argument. Clearly, one can follow a life-style that would reduce encounters with counterevidence to one's beliefs. This is one sense of being closed to argument. But there still remains the question whether the human mind can be completely closed to evidence that has, as it were, got passed the dogmatic life-style. Dawkins supplies no argument to answer this question.

There is another problem with countenancing the existence of blind faith. As Dawkins says, the survivability of a meme depends, among other things, on its competition with other memes for embodiment in people's beliefs. If blind faith really existed, then the first meme to exploit it would soon have completely dominated all minds capable of it, providing it replicated quickly enough before any rival memes exploiting blind faith emerged and attached themselves to untouched minds. There would now be only one religion. But even if there had been more than one, there would be no conversions from one to another. But since there are many religions, many conversions, and also continually developing factions in any one religion, it is hard to maintain the picture that Dawkins paints. The same points can be made about any sort of system of ideas: political, economic, social etc.

Dawkins' account has many virtues, but it lacks an explanation of the interaction between logic, psychology and genetic evolution. In his enthusiasm to show how memetic evolution can be independent of genetic evolution, Dawkins has overlooked some relationships that can easily explain the fluidity of ideological organisations.

2.8.2. Florian von Schilcher and Neil Tennant

The selective filter through which memes must pass has both a rational and an emotional component. And to a certain extent these interpenetrate: as Kuhn (1970) pointed out, scientists can become so emotionally committed to certain theories that they cannot abandon them when they are falsified; and almost every reader will have experienced the intense emotional and aesthetic pleasure that can be derived from artifacts that serve their functions perfectly. (Schilcher and Tennant, [1984], pages 119 to 120.)

Schilcher and Tennant clearly wish to separate the two components they see making up the selective filter: the emotional and the rational. The large question of the irrationality of emotion in ideologies is covered in a chapter 3. But several comments are appropriate here.

One could argue that curiosity, the driving force behind science, is the emotional aspect of the preference for information-rich and truth-like ideas. Emotional and rational filters are then not mutually incompatible. Is the puzzle-solving that Kuhn emphasizes in science nonemotional?; and is the frustration of an attempt to solve a puzzle a non-rational filter? Stubbornness born of pride or aesthetic attachment to a theory may unintentionally goad its critics into producing a much more devastating criticism of the theory than they would if its defenders abandon it at the first hint of disagreement. A few die-hard theorists may

be a spring-board for the launch of a very successful and popular rival theory.

Schilcher and Tennant allow some "interpenetration" between the emotional and the rational. However this may be interpreted, it suggests that there are irrational (or at least non rational) emotions. I maintain in chapter 3 that all emotion is cognitive and all cognition is emotional, and more importantly that all our emotions are under the control of our theory of the world and our place in it.

Interpreting Schilcher and Tennant sympathetically, one might say that emotions less conducive to the search for truth may become dominant. They could have mentioned Lysenkoism. However, the case of Lysenkoism does not show that curiosity, or the preference for information-rich and truth-like theories, was completely overwhelmed. I have argued that for evolutionary reasons we are creatures of curiosity and exploration. But we also tend to promote that which is instrumental in the attainment of our goals and abandon the futile or uneconomic. It is often thought that the two are incompatible, but as I argued in chapter 1, a theory is useful because it is close to the truth. The Soviet authorities genuinely believed that Lysenko's Lamarkism would promote Soviet agriculture. However, Mendelian genetics, on account of its greater verisimilitude, was also much more useful. Because of this and because it became apparent that Lysenkoism had held up the development of Soviet agriculture for 30 years, Lysenkoism was replaced by its "bourgeois" but much more useful, because truth-like, rival.

2.9. Memetic Evolution of an Ideology

The memetic evolution of an ideology can be broken down into the following processes: the occasion, what prompts the idea; its emergence; its testing; and its propagation. This rough model will summarise our findings so far and help us later to analyse the use of immunizing stratagems to protect ideologies from criticism (chapter 4).

Occasion

(1) Perception of a problem. Some problems may be simply felt, but all problems seem to be capable of being formulated. This implies that proposed solutions can always be checked against the problem in a publicly inspectable way. It is the problem(s) to which a network of ideas is addressed that gives those ideas its semblance of a coherent whole. The assumptions, themselves quite distinct logically, are intended to cooperate in the solution of the Problem(s).

Emergence

(2) Half-baked, unjustified, spontaneously generated theory to solve problem. The attempted solution, like a variant in Darwinian evolution, is not determined by the problem, but merely prompted by it. Neither is the theory justified: which is not surprising, since no theory can be justified. The ideology may use earlier concepts and theories, as Marxism drew on French socialism, English economics and German philosophy. It may on the other hand, be radically new. But in both cases its emergence is beyond scientific prediction for both logical and ontological reasons. Popper [1957] has argued that it is logically impossible to predict new ideas in a scientific way. Popper's argument, roughly, is that we cannot predict now what we will only know tomorrow. For such a prediction requires that we state the

knowledge now, so it would be known now and not only tomorrow. Popper regards this as a good argument but not quite a logical proof, which he supplies elsewhere (Popper, [1982], section 22.) Popper's argument can be generalized to all new ideas and creations of the human mind. Popper's argument, however, does leave room for the prediction of the general form of new ideas, or disjunctive predictions in which we can say that one of a range of possible ideas will emerge. In addition to this logical proof, there are also Popper's arguments for ontological indeterminacy (Popper, [1990] & [1982].). In this view the world has a chaotic element, even though the chaos may have certain constraints. In short an ideology has a non-deterministic origin, though it may be influenced by certain factors. The import of the above is that each ideology lives in a sea of radically unpredictable rivals and critics, and in order to survive it improvise defences as and when required.

Refinement.

(3) Attempts by intellectuals to generalise, make precise, clarify, simplify the theory. Attempts may be made to axiomatize the theory, giving it greater information content through Watkins's organic fertility requirement. Versions with loosely related assumptions will tend to be abandoned. All of which, if successful, contribute to the theory's survival value, for they make the theory easier to remember and communicate (i.e., its copyability is increased). Moreover, as explained in connection with Meyerson, there is a universal need for simple and general explanations, which springs from our instinctive curiosity. One often witnesses new theories, prompted by initial success in a narrow field, generalised beyond their immediate problem situation. The appeal of a simple but comprehensive explanation cannot easily be overestimated. As explained in chapter 1 the popularity of both religion and science is based on this important feature. A conversion experience may be very

similar to the experience of seeing a good simple explanation in the sciences. On the other hand, as an unintended consequence, the theory becomes more vulnerable to criticism. It is easier to find counterexamples to a theory which ranges over many fields, has higher information content, than one which has narrower scope. So in being given greater copyability it also becomes more vulnerable to competing ideas.

Testing

(4) Encounters with criticism. The content and timing of criticism is in many circumstances impossible to predict, and for the same reasons that new theories cannot be predicted. (Marx could not have predicted in a scientific way the emergence in the 1870s of the marginal revolution in economics, which was to be the strongest criticism of the labour theory of value.) The involuntary nature of the impact of counterevidence or criticism on beliefs allows error elimination to work even on beliefs produced by wishful thinking or associated with deep commitments etc. Remember that the involuntariness of belief applies in all forms of rationality, so this point is quite general and applies to all types of criticism.

In The Retreat to Commitment Bartley starts his enquiry by assuming that there are systems of ideas that are retained regardless of the facts. This is his general position. However, when he analyses liberal Protestantism, his case study, he finds that it is open to argument, after all. He finds that protestant theologians agree on a number of criteria of sound criticism. Bartley makes a list of types of criticism that no network of ideas can avoid completely. In expounding these types of criticism, I will use some of my own examples to reinforce the importance of this surprising concession of Bartley's.

(a) Inconsistency. Is the network internally coherent? To be more precise, does the system contain at least two statements which cannot all be true under any interpretation? Leon Festinger, thought by many to have provided an irrationalist theory of man faced by counterevidence, makes considerable use of a similar notion in his idea of cognitive dissonance. Festinger's main point is that humans value consistency and will try to change their beliefs in order to reduce inconsistency, hardly an irrational motive; certainly not a motive that would close the belief to criticism.

(b) Empirical refutation. Are there observable counterexamples to the system? For example, the price of unproduced goods like land are a counterexample to the labour theory of value. Even passionately held religious systems of ideas can succumb psychologically and sociologically to empirical refutation. Festinger, in his book When Prophecy Fails, [1956], supplies many examples.

Festinger's theory is often adduced in many arguments in the theory of ideology (e.g. Elster; Paul Veyne.). Prima facie Leon Festinger's work is contrary to my own, but it is in fact in complete agreement with my thesis.

Festinger attempted to show that groups highly committed to an idea will often increase their efforts to convince others after a disconfirmation of their beliefs. Those who have heard of Festinger remember this point. However, it is rarely remembered that he goes on to show that with further disconfirmation morale drops and the movement disintegrates.

As Festinger points out, the details of the messianic movements he comments on are poorly recorded. However, two of the groups that he deals with, the Millerites and the Sabbataians, although at first increasing their proselytising after initial disconfirmation, disintegrated after repeated disconfirmation.

The Sabbataian movement strikingly illustrates the phenomenon we are concerned with: when people are committed to a belief and a course of action, clear disconfirming evidence may simply result in deepened conviction and increased proselytising. But there does seem to be a point at which the disconfirming evidence has mounted sufficiently to cause the belief to be rejected. (Festinger, Rieken and Schachter, [1956], page 12.)

Exactly as predicted by this thesis. It may be retorted that these are just a few examples conforming to my thesis. But I am not looking for confirmation of my thesis, but for a refutation of the common idea that if people hold an idea with passionate commitment they are thereby closed to argument. It is interesting to find refutations of this idea in a work held by many to support the irrationalist thesis. Furthermore, my intention here is to undermine the impression, spread by poor scholarship, that Festinger's theory supports the irrationalist thesis, that under certain conditions systems of ideas are closed to argument in an important psychological sense.

The Jehovah's witnesses are a further illustration of the impact of empirical refutation. The Witnesses have made numerous predictions for the end of the world, which of course have failed. So much is obvious. Few have looked closer to discover that the interpretations placed on these predictions have been radically changed. For example, when the world did not end in 1914 as they predicted the witnesses reinterpreted the prediction to mean that "the coronation of Jesus Christ in heaven" had taken place in

that year. The point is that the Witnesses know that the predictions have failed and have abandoned the original prediction. They are not dominated by blind faith or by wishful thinking. Though the movement continues (with a doctrine increasingly different to the original laid down by Russell Tace Wallace in the 19th Century) thousands of individuals are leaving, many because of these failed predictions. During 1985 36,638 individuals had to be disfellowshipped from the Christian congregation. Here we have a clear case of the psychological, sociological and logical impact of empirical refutation.

Ignoring the distinctions made in the introduction between the movement, doctrine, total membership, and turnover rate of members in ideological movements leads to misleading comments. For example Wells, while at other points admitting the losses that the Jehovahs' witnesses have suffered, nevertheless says that

the movement, like many others within and outside Christianity, has shown that it can survive destructive criticism of any kind by reinterpreting the primary data. (Wells, [1988], page 14.)

If the rate of gain of new members is at least as great as the loss of members, then the movement can survive. But it hardly follows that the movement can survive destructive criticism that leads to a rate of loss greater than the rate of gain. And Wells does not present any argument to show that movements can be guaranteed from this sort of criticism. Wells fails to put sufficient emphasis on the fact that the predictions are being reinterpreted. If he did then it would be more apparent that they were being abandoned. The strange but true conclusion must be that a movement may survive empirical criticism without either its members or its doctrine.

(c) Unscientific. Is the system inconsistent with scientific theories?

This form of criticism is so strong that nearly all popular networks of ideas ape at least the appearance of science and try to find confirmation of their doctrine in scientific theories. Their other tactic is to argue that science deals with a fundamentally different realm; but they at least feel obliged to meet this possible source of criticism. Both Marx and Freud saw their theories as scientific, and one of the strongest criticisms of their doctrines is that they fail to meet scientific standards.

(d) Fails to solve original problem. This form of criticism seems to apply to all networks of ideas without exception. It can also take the form of comparing the relative success of rival ideas in solving the problem. Whether the ideas are meant as an empirical description, explanation, rhetorical device, to reinforce social cohesion, to inflame people's passions etc, they are open to criticism in so far as they may fail to satisfy their purpose. This is another way of looking at what I earlier called instrumental rationality.

Bartley takes the failure to solve a problem as one type of criticism. But one might even define criticism in general as the assessment of the degree to which a proposed solution is a solution to its intended problem. As I have already said, all problems can be formulated in a publicly inspectable way, and hence both their formulation and their intended solutions can be criticised. Some problems are extremely difficult to formulate in detail, and Russell was keen to point out that, at least in philosophy, getting the question right was more important and difficult than finding the answer. But even a vague formulation will give criticism some criteria to work on.

Propagation.

(5) The ideas that survive testing are propagated. As I have already pointed out, those features that make an ideology an appealing explanation - clarity, generality and simplicity - also make it easier to propagate. It is at the stage of propagation that irrationality is often thought to be paramount. Sloganeering, emotionally stirring speeches, repetition - the use of advertising techniques - are all thought to be evidence of a reduced scope for rational criticism. But I argue in chapter 3 that advertising techniques, the use of rhetorical devices etc., are all rational and do not guarantee the message against criticism.

The role of advertising and rhetoric can be understood as the production of messages which are (a) attention grabbing and (b) memorable. Much of the sinister power attributed to advertising by writers such as Vance Packard lies in a failure to properly estimate the importance of these necessary features of successful advertising. I say necessary and not sufficient, because even after having contrived the most arousing and memorable form for a message it is still an open question whether the audience will agree with it.

Both Russell and Le Bon laid great stress on the role of affirmation and repetition in accounting for the acceptance and propagation of ideas. Moreover, both thought affirmation and repetition were irrational. On our theory of advertising, however, they simply enhance the memorability of the message. The element of truth in Russell's and Le Bon's positions is that complex argument does not lend itself easily to propagation. It takes longer to transmit and is less memorable. However, there is no suggestion here that shorter arguments or assertions having been spread by affirmation and repetition are more closed to argument.

Affirmation and repetition may help spread an ideology, but they do not provide a barrier to criticism.

Each of the processes can itself be analysed as incorporating these processes, so that, for instance, the perception of the problem and an attempt to formulate it may itself be subject to refinement and testing. Refinement may have its own problems and tests etc. Hence the model consists of a number of nested critical feedback loops.

2.10. Explanation of apparent imperviousness of some ideologies

In chapters 1 and 2 I have tried to show that on Popper's principles we should expect all networks of ideas to be open to criticism in a logical, psychological and sociological sense. That is, that there are no absolute barriers to sound criticism. However, this account would be seriously flawed if it did not acknowledge the fact that some networks of ideas do seem to be closed to argument and which seem to persist regardless of the facts presented against them. I will summarize some points made earlier and point to some other important factors that explain this apparent absolute imperviousness to argument.

- 2.10.1. The complexity of the learning task.
- 2.10.2. Importance of values at stake.
- 2.10.3. Popper's "dogmatism"
- 2.10.4. Sociologized version of (3)
- 2.10.5. Early loss of intellectual giants.
- 2.10.6. Retention of original terminology.
- 2.10.7. Shame over admitting error.
- 2.10.8. Bad Faith.
- 2.10.9. Conformity.

2.10.1.

The complexity of the learning task

No one seems to have noticed that seeing the full import of sustained criticism on a complex network like Marxism or Freudianism is a complex learning task. These systems take a long time to learn and it should not surprise us if they take a long time to "unlearn". The transition from say Marxist to Classical liberal or the reverse obviously takes considerable time and effort.

It is rare for an ideologist to abandon one system of assumptions without a substitute. Marxists or Freudians cannot be drawn away from these ideas even if they see the faults in Marxism and Freudianism, for in the absence of an alternative explanation, a false system may rationally be preferred as at least an approximation to the truth.

2.10.2.

Stubbornness of Important Beliefs

We have already explained the role of wishful thinking in sustaining a belief in a system in the face of counterevidence. This obviously contributes to the appearance of absolute imperviousness of some networks of ideas. Christianity, which involves the promise of heaven and the threat of hell has perhaps derived a great deal of its staying power from wishful and fearful thinking. From our analysis of wishful and fearful thinking we should expect this kind of stubbornness to be greater the more important the issues at stake are. And, indeed, we do observe that religions, which deal with the most important values in man's life, are the most stubborn in this sense.

2.10.3.

Popper's "Dogmatism"

Popper has always maintained that theories should not be given up too soon, for their real strength may only become apparent at a later stage of the argument. Hence even if a Marxist or Freudian encounters overwhelming counterargument, it may still be rational to press on with his defence of his system.

2.10.4.

Sociologized Popper's "Dogmatism"

There is also a sociologised version of this Popper's point. An individual in a movement may have had his beliefs in the system severely impaired because he is simply unable to deal with the objections he faces. Nevertheless, he may continue in the expectation that others in the movement more knowledgeable or able will have the right answer. (I owe this suggestion to Steele, author of the forthcoming *Communism: Marx and Mises*)

2.10.5.

Loss of Intellectual Giants

There is a tendency for a moribund ideology to become more stubborn before it falls completely into disrepute, but not through any deliberate strategy, but because of a sociological effect. Arguments work like judo tricks; the more intelligent the opponent the more quickly he will succumb to a sound argument. Therefore, with a seriously flawed ideology we will expect its intellectual giants to leave earlier under the impact of sound criticism. In all movements there are a relatively small number of intellectual leaders whose views are consulted: (a) in the

event of threats to the system: to supply defences both psychological, logical and sociological.

(b) to interpret new events and problems in the light of the system.

When they leave, the movement is liable to lose credibility to members and potential recruits. But more to the point, the remaining members will give the impression that the movement is very stubborn in regard to criticism.

2.10.6.

Retention of Original Terminology

A very important element in the appearance of imperviousness is the retention of old terminology. Today's Liberal Party, for example, is quite different to the Liberal party of the early 18th Century. Meanings and theory change while the words linger on for far longer. It is easier to police conformity to rules about ritual, ceremony and word-use than it is to police conformity in interpretation of these symbols. The founding fathers of the orthodox church, represented by Irenaeus and Tertullian, then later reinforced by the council of Nicea, laid great emphasis on the observance of certain rituals in contrast to the Gnostic heretics who argued for the importance of an intuitively grasped spiritual maturity as constituting the essence of being a follower of Jesus. This may be the reason why the ritual of orthodox Christianity has propagated at the expense of the Gnostic's "secret knowledge".

2.10.7.

Shame of Error

When argument does have a psychological impact, even to the extent of getting the propagandist to modify his message, he rarely announces the fact. People do not like admitting

error in public. Hence argument often seems impotent even when it is successful.

Shame in error need not be a barrier to criticism, for it is itself open to criticism. Not being gods we are all liable to error. There need only be shame in perpetuating error, by keeping the possibly erroneous ideas closed to public scrutiny. But that is the last thing a propagandist wants to do with his ideas in any case, for they then cannot be propagated.

2.10.8.

Bad Faith

I should not ignore the influence of bad faith and cowardice. Perhaps in 18th century England, there were many intellectuals who disbelieved in Christianity, but nevertheless acted to perpetuate Christian belief and prevent criticisms of it from being made or heard. They had goals other than the pursuit of truth, and they sometimes sacrificed the pursuit of truth to those goals. This would lead to less people being persuaded against Christianity, because the actions of the dishonest or cowardly would mean that anti-Christian arguments would not survive, so each generation would start afresh, with all the Christian arguments well mustered, but the critical arguments lost.

Similar influences probably occurred in Marxism and Freudianism. Gellner notes such a case in Freudianism, quoting from Anthony Storr's article "The Concept of Cure":

The American Psychoanalytic Association, who might be supposed to be prejudiced in favour of their own speciality, undertook a survey to test the efficacy of psychoanalysis. The results obtained were so disappointing that they were withheld from publication. (Quoted in Gellner, [1985], page 161, from Rycroft, ed., [1966], page 58.)

I suppose the A.P. A. knew that when revealed, this concealment of unfavourable evidence could itself serve as a strong argument against psychoanalysis, but reasoned that this would involve fewer lost believers than publication. They may not have realized that such concealed counterevidence would acquire greater rhetorical power from its very concealment. But at least the concealment shows that the A.P.A. recognise the influence of truth, for if it were impotent, why conceal it?

However, it is worth pointing out that the originators of the most popular ideologies - Marx, Freud etc - have been sincere in their beliefs and search for truth. Belief provides the strong motivation necessary for the arduous task of building up a system over many years, sustaining it against argument and propagating it etc.

Mendacity may serve to propagate sincere beliefs. This may seem paradoxical, but let me explain. A Marxist, convinced that Marxism is true on the whole, may well lie about what he regards as details in an argument in order to propagate this doctrine. (I owe this idea to David McDonagh.) He reasons that the benefits from the widespread adoption of Marxism will more than compensate for relatively small errors in Marxism. Therefore this form of mendacity is dependent on sincere belief.

The influence of dishonesty or cowardliness must be qualified, for it need not prevent the emergence and spread of arguments against the relevant doctrine. In the case of Christianity, all that the cowardly needed to affirm was their belief; intellectual speculation and argument about the existence of god etc could then be seen as fairly innocent and harmless. David Berman points out that in eighteenth century controversy many writers denied that

atheism was a possible state of mind for a human being, and yet went on to argue against it. (Berman, [1988].)

Dishonesty can work in both directions.

2.10.9.

Conformity

Certain experiments in social psychology have strengthened the popular idea that conformity is an overwhelming factor making for the preservation of ideologies. The pressure of conformity, it is said, can suppress the expression of dissent and even control belief; criticism is therefore severely limited. Once an ideology is adopted by a large number of people, it becomes virtually self-perpetuating; indeed it becomes self-reinforcing, because as the number of adherents rise the pressure to adhere rises also. This is perhaps what Gustave Le Bon was referring to when he spoke of the contagion of the crowd. (Le Bon, [1895].)

The most notable experiment is that conducted by Solomon Asch. Asch found that when subjects were asked to judge the relative length of vertical lines after confederates of the experimenter had made their (incorrect) judgement, the subjects tended to judge wrongly in agreement with the majority. This is how the results of the experiment are often reported, but there are very important qualifications that are neglected by those who use Asch's experiment to support the irrationalist thesis. An example of this neglect can be found in Hassan [1988].

The most important qualification is that if the subject is presented with only one ally, his tendency to conform to an erroneous judgement by the majority is reduced sharply. (Asch, [1951], pages 117 - 190.) In addition, if there is unanimity, then the size of the group need not be very large to elicit maximum conformity. Surprisingly, increasing the

size of the majority beyond 3 people does not lead to increased conformity.

In the original Asch experiment, the subjects had to express their judgements in the presence of the majority. There was no way, therefore in which to test for sincerity. It has been found that a minority's conformity tends to be only nominal: the greater the privacy in which to express judgements after exposure to a majority the less conformity there is. (Morton Deutsch and Herald Gerard. "A Study of Normative and Informational Social Influence Upon Individual Judgement". Journal of Abnormal and Social Psychology. 51. 1955. pages 629-636; Jane Mouton, Robert Blake and Joseph Olmstead. "The Relationship Between the Frequency of Yielding and the Disclosure of Personal Identity". Journal of Personality. 24. 1956. pages 339-347; Michael Argyle. "Social Pressure Upon the Modification and Distortion of Judgement". Journal of Abnormal and Social Psychology. 54. 1957. pages 172-175.)

Thus conformity is a factor in the apparent imperviousness of an ideology to criticism, but a much overrated influence. An ideology will be faced with serious criticism from within the ranks if only two of its adherents dissent from the ideology, because the leaders cannot suppress it simply by appeal to the majority or by increasing its membership.

Chapter 3

Ideology and Irrational Emotion

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3.1. Ideology and Irrational Emotion

Can intense emotions associated with ideologies make the ideologists irrational and therefore insulated against all criticism? And would the ideology then be more likely to spread? Almost all writers take the irrationality of ideological emotion for granted, but I intend to show that the ideologies at issue are rational (though perhaps wrong or foolish) and open to argument. The implicit assumption is that if ideological emotion is thoughtless and therefore independent of theory, then critical argument is irrelevant for it has no target. I grant that intense emotion

engendered by an ideology may impair the appreciation of critical argument, but insist that argument is always relevant because our emotions are under the control of our theory of the world and our place in it. Because our emotions have such a theoretical basis, they are subject to the rational filters I explained in chapter 2. It makes evolutionary sense that our emotions are under the control of our theory of the world and subject to the rational filters, for how else might they be made appropriate to subtle, complex, remote and even merely hypothetical circumstances? Inappropriate emotions lead organisms to shun the beneficial and embrace the harmful, and as a probable, though not necessary, consequence impair genetic reproduction. Of course, human beings are foolish, but this does not mean that they cannot or are indisposed to correct their errors; it only means that they are fallible and may take time to readjust their emotions to the facts.

There are two closely associated ideas about the role of emotion and morality in the emergence and spread of ideologies, both of which are thought to support the idea that ideologies are closed to criticism. One is that ideologies spring from and thrive on irrational emotions, emotions that are not subject to reason, nor abstract theory or argument: gut feelings of anger, resentment, envy, greed etc, unadorned by abstract ideas. In this theory emotion and thought are placed in radically different compartments. Pareto seems to have held such a theory. Raymond Boudon argues that Pareto thought that ideologies were rationalizations of feelings.

Boudon states what he conjectures to be the general argument behind Pareto's theory:

- (1) people believe in the objective truth of all kinds of propositions, both unproved and unprovable;
- (2) by definition, their conviction cannot be founded on the objective truth of these propositions;
- (3) therefore it must have its basis in an irrational act of faith;
- (4) which can only be based on feelings. (Boudon, [1986], page 60.)

Boudon argues that both Durkheim [1915] and Weber [1978] also held this sort of theory. He makes a good case that it is implicit in Durkheim's discussion of respect for the flag (cf section 3.3), but Weber's analysis of respect for charismatic leadership attributes a leader's success to his followers' assessment of his actual performance (3.5.). I will also discuss Minogue's discussion of Bertill Ollman's view of the Labour Theory of Value.

The other idea is that what is most important or even necessary and sufficient in the emergence and spread of ideologies is a high level of agitated, usually violent, emotion evoked by the ideologue in potential followers. Those who espouse this view have in mind the turbulent emotions of the parades and rallies that adorn political regimes and the riots and assassinations that attend their demise. Can the emotions that drive the terrorist to plant a bomb, the protester who goes on hunger-strike, and the Kamikaze pilot all be rational? Surely, it is thought, such emotional people, especially the violent ones, are outside the scope of abstract theory and argument, and therefore of criticism.

Even if ideologies appeal to emotions and passionate moral aspirations, this is no insurmountable obstacle to abstract critical argument. Even the most violent and anti-intellectual ideologies are steeped in abstract theory and argument, and their origin and spread is traceable to conspicuously intellectual sources. All the great ideological movements have had rather undramatic beginnings with the writing of an abstract text by some obscure scribbler fascinated by some abstract problem, and they have been sustained or demoralized by abstract argument.

The intellectual content of even anti-intellectual ideologies is no surprise once it is realized that all emotion is cognitive and all cognition is emotional. There is no thoughtless emotion, and no emotionless thought (sections 3.3.1.). All thoughts, even of particular things, can only be constructed from abstract ideas and arguments. It seems implausible to suggest that anti-intellectual ideologies arouse people on account of being empty of meaning. One might say that it is hard to avoid meaning. Even "nonsense" poetry or humour excites us on account of the meaning that we impute to it. Carroll's "Jabberwocky", for example, contains many words that are not in the dictionary or part of any natural language, yet the poem conjures up in our mind all sorts of strange creatures.

Some writers, such as Durkheim, might say that since at least some emotion is instigated by particular objects, abstract theory is sometimes irrelevant. If this type of emotion were responsible for maintaining ideologies, then they would be immune to theoretical attacks against the emotion. However, Popper has argued that even the identification of particular objects involves abstract theory that goes beyond the immediate observational data. Popper argues that even to describe something as simple and

concrete as a glass of water involves attributing to it a set of dispositions that have not yet been fulfilled:

The statement, "here is a glass of water" cannot be verified by any observational experience. The reason is that the universals which appear in it cannot be correlated with any specific sense-experience...By the word "glass", for example, we denote physical bodies which exhibit law-like behaviour, and the same holds for the word "water". (Popper, [1934], page 95.)

This is a broad notion of theory, but it is, nevertheless, a defensible one. The extension of the notion of theory is parallel to the extension of the notion of information, allowing us to speak of computer programs or genes as containing information. Indeed, just as the concept of information has been severed from its connection with language Popper's broad notion of theory allows us to conjecture that even a cat and mouse have instinctive theories about each other's law-like behaviour, theories which guide their responses to one another. A corollary is that even if an ideology or some of its components are non-linguistic responses to particular objects, as their emotional elements might be, a theoretical attack may still be appropriate.

My main point is that even if we admit that ideological emotion can sometimes spring from particular objects, this does not by itself make the ideology immune to theoretical criticism. A better example in this context would be the statement "This is my Father." A father is clearly a particular object that arouses much emotion, but it is a particular object that is only understood through a complex and not easily testable theory, a theory that goes far beyond immediate experience. One can easily see how this line of argument can be extended to straightforwardly ideological notions such as "Leader", "Follower", "Heretic",

"Class Traitor" etc,. Thus theories that ascribe the success of an ideology to a charismatic leader (cf. Max Weber) who arouses deep emotions, or to a particular object such as a flag (cf. Durkheim) cannot exclude the relevance of theory to that propagandistic success. For it is the theories held by the leader's audience that makes him a charismatic leader and that endows the flag with its emotional significance.

Thus I argue for the Stoic idea that "men are not moved by things but by the views they take of them". (Epictetus.) My position is slightly different, as I argue that the views we have of things are at least partly explained by the way things are. Therefore the way we feel about things is at least partly explained by the way things are. Perhaps closer to my position is that of Dubois:

If we wish to change the sentiments it is necessary before all to modify the idea which has produced them. (Quoted by Beck, [1976].)

I add that changing the ideas is not only necessary but sufficient, and moreover is always possible.

It follows that abstract critical argument is always relevant. On the other hand, emotion does have an affect on the spread of an ideology. Therefore, although truth and validity are always relevant they are not the only relevant factors. Nevertheless, I argue that the effect of emotion on the competitive strength of an ideology can be analysed in terms of a basic theory of advertising, and that such an analysis shows how it need not be a barrier to criticism.

One may distinguish for the purpose of argument between the emergence, maintenance and abandonment of an ideology. Even if I concede that ideologies spring from and are maintained by noncognitive emotion, I can still argue that critical

argument can prompt the abandonment of any ideology. Maintaining an ideology would then be like the reflex function of the heart which continues until voluntary action brings it to an end. Some subset of emotions may be like the reflex functions of the body: they will control certain behaviours without conscious thought, but conscious thought can intervene at any moment to override the reflex, just as a coughing reflex might be consciously suppressed out of etiquette at a concert or a formal dinner.

I think that we must concede that intense emotion may impair reasoning, but this does not mean that it eliminates it. Conceding an element of the irrationalist case, I grant that an argument may engender an emotional attitude so intense that some subsequent critical arguments requiring sharp, coherent, complex thought become ineffective. But the proposer of the irrationalist thesis must grant as common observation that intense emotional perturbations cannot last a life-time, though a disposition to such emotions may. Therefore, there will be times when the appreciation of even difficult arguments will not be prevented by intense emotion. I also argue (section 3.3.3) that this barrier depends on the correct identification of criticism which, as I argued in chapter 1, section 1.3.1., is not always easy.

I will centre my discussion on the theories of Hitler, Chakotin, and Gustave Le Bon.

3.2. Hitler's Theory of Propaganda

Hitler held that successful propaganda is based on appeals to emotions devoid of abstract content, and in particular to agitated or violent emotions. Hitler is worth quoting at length since, having achieved power, his views on propaganda are probably regarded by many as at least close to the truth.

The broad masses of a nation are not made up of Professors and diplomats. Since these masses have only a poor acquaintance with abstract ideas, their reactions lie more in the domain of the feelings, where the roots of their positive and negative attitudes are implanted. They are susceptible only to a manifestation of strength which comes definitely either from the positive or negative side, but they are never susceptible to any half-hearted attitude that wavers between one pole and the other. The emotional grounds of their attitude furnish the reason for their extraordinary stability. It is always more difficult to fight successfully against faith than against knowledge. Love is less subject to change than respect. Hatred is more lasting than mere aversion. The driving force that has brought about the most tremendous revolutions on this earth have never been a body of scientific teaching which has gained power over the masses, but always a devotion which has inspired them, and often a kind of hysteria which has urged them to action. (Hitler, [1933], page 283.)

The most successful movements are those with the most intense or agitated, abstractionless emotion behind them, for these are most lasting intrinsically, and the most resistant to any counter-appeals.

I suspect that many theorists have been influenced by this view of ideological change. And the view is by no means confined to national socialists or even confined to one end of the political spectrum.

Edmund Wilson, famed for his eloquent exposition of Marxism, expressed his predilection for a similar theory of propaganda and ideology:

You cannot reason an English Tory into a conviction that the lower classes are not unalterably inferior to the upper; and it would be useless to dispute with a Nazi over the innate inferiority of non-nordics."..."you can only appeal to them by methods which, in the last analysis, are moral and emotional. (Wilson, [1940], page 389.)

It was purportedly Marx's moral genius , inherited from his Jewish background, to have grasped this truth and exploited it to the full. The persuasive power of Das Kapital, we are to believe, has no connection with its labour theory of value and historical assertions; it lies rather in its ability to instil a moral fervour to abolish capitalism and institute communism. Zombie-like the proletariat somehow acquire from Das Kapital a hatred for capitalism and on they march to the revolution.

It is surprising that so perceptive a political commentator as Edmund Wilson should have overlooked the case of Gladstone, who was reasoned out of Tory doctrine and into Classical liberalism, in which he was to make a large contribution.

The idea that one cannot reason with a Nazi or a racist is one of the key ideas behind the intimidatory tactics of many left-wing student groups. These groups reject free speech as an anachronism. Their resort to physically obstructing those who want to attend a speech by a racist or chanting during such speeches flows from their disillusionment with argument. But if argument and reason has nothing to do with racism, it is somewhat ironic that they go to so much

trouble to suppress arguments in favour of racism; or is it being suggested that one can be reasoned into racism but not out of it? (See section 3.3.2.) When prompted, some members of the group suggested that argument was a waste of time because racism is instinctive. In this vision Apartheid and Nazi Germany are a product of instinct. Racism may build on an instinctive suspicion of strangers, but such a suspicion is hardly sufficient to explain these particular regimes. Such glib attempts to understand a phenomenon they are trying to eliminate is probably the sad but predictable effect of an inveterate contempt for argument and debate. To such people, racists are animals without any regard to theories and argument and who, therefore, can only be opposed by physical obstruction and censorship.

3.3. Intellectual Elites and the Emotional Masses

Hitler did see a role for abstract argument and theory in propaganda, but this was confined to the intellectual elite. Serge Chakotin, a socialist leader at the time of the Nazis rise to power and pupil of the Russian scientist Pavlov, held very similar thoughts on political propaganda.

In his study of totalitarian political propaganda, "The Rape of the Masses", [1940], Chakotin portrays the masses as puppets of leaders, "soul engineers", who supposedly make use of suggestion to manipulate them. I argue that several defensible interpretations of Chakotin's vague concept of suggestion fail to support his theory.

Some of the ideas of Hitler and Chakotin were anticipated by Durkheim in 1915 in his book Elementary Forms of the Religious Life. Although Durkheim was more concerned with the analysis of primitive cultures, he occasionally applies his thoughts on totemic religion to phenomena such as the

glorification of the national flag and charismatic leadership. Durkheim's theory suffers from a vague distinction between the abstract and the concrete and an odd mutant of Pavlov's theory of classical conditioning. Both Chakotin's and Durkheim's theories succumb to more recent research which has refuted the absolute dichotomy between emotion and cognition.

Speaking of suggestion Chakotin says:

The question of suggestion, especially through the spoken word, or through any symbol, plays an important part here...If we analyse the possibilities of resistance to suggestion - a question, as we shall see, which is of the utmost importance - we find that, apart from pathological cases of congenital inadequacy or sickness or poisoning, these possibilities are largely a function of culture...which makes up the psychical mechanism of the individuals concerned. Ignorance is the best medium for the formation of masses who easily lend themselves to suggestion. This is a capital fact in the domain of politics and the social order...It is often said that consciousness varies inversely with susceptibility to suggestion. (Quoted by Harold Walsby in The Domain of Ideologies. published in association with the Social Science Association by William Mclellan, Hope Street, Glasgow. pp. 51 - 52.)²⁵

Chakotin divides communities into two classes: (1), those who are largely immune to suggestion but who are receptive to theoretical, rational, persuasive argument and to doctrine; (2), those who are passive, non-intellectual, unobjective or subjective, and greatly susceptible to emotion and suggestion. The relative numerical proportions of the two classes are 1 to 10 respectively: 10 per cent. are active and thinking, 90 per cent. passive and emotional.

Since there were two sorts of persons, Chakotin reasoned, there must be two forms of propaganda:

one addressed to the 10 percent who are sufficiently sure of themselves to be able to resist crude suggestion, and the other to the passive 90 per cent., who are accessible to suggestion, especially suggestion working on the first (combative) instinct...These two forms of propaganda, addressed to these two groups of persons, thus differed in principle. The first acted by persuasion, by reasoning; the second by suggestion, by means of fear, now of its positive compliment, enthusiasm or excitement, sometimes ecstatic, sometimes furious; these reactions also proceeded from the combative instinct. (Ibid. pp. 53-54.)

Here we see loud echos of Hitler's theory. Chakotin stresses that the intellectual 10 percent of the population require propaganda with an idea behind it because they are "immune" to emotional propaganda:

Far be it from us to suggest, indeed, that propaganda of any sort can usefully be carried on with no idea behind it, merely an appropriate technique. The "10 percent." must be enlightened and guided by some idea... (Ibid. p. 54.)

But the 90 percent are converted by purely emotional appeals through suggestion, without any idea behind it. Such a view is clearly opposed to Epictetus's theory and more in accord with those of Pareto, Weber and Durkheim. Chakotin constantly refers to the use of "signs" and "symbols" to carry through what he calls suggestion. Durkheim's flag may be an instance of one of these suggestive, but untheoretically interpreted, signs.

Durkheim argues that abstractions are a net hindrance to the arousal and maintenance of what we might call ideological emotion and behaviour, such as respect for the flag and

nationalism. Such behaviours, Durkheim argues, are aroused not by abstractions but by concrete symbols. The emotions that something arouses in us spontaneously attach themselves to the symbol that represents them. There are both abstract and concrete ways of representing something, but these emotions attach themselves more readily to the concrete symbols. This is because representing something abstractly is labourious and confusing, whereas a concrete symbol is simple, definite and easily representable. At this point Durkheim introduces an odd assumption to the effect that the emotion originally aroused by something attaches itself exclusively to its concrete symbol. Thus a country, Durkheim says, may arouse in someone feelings of loyalty, and this feeling will become associated with the country's flag and other signs of nationality; but then these feelings of loyalty may be completely transferred to the flag and other symbols.

Whether one standard remains in the hands of the enemy or not does not determine the fate of the country, yet the soldier allows himself to be killed to regain it. He loses sight of the fact that the flag is only a sign, and that it has no value in itself, but only brings to mind the reality it represents; it is treated as if it were the reality itself. (Durkheim, [1915], page 220.)

The flag in Durkheim's analysis is a totemic symbol, which is a sign of common moral life and communion. As such individuals imbue it with a mysterious force that is felt to transcend their society even though it actually receives all its apparent power from its capacity to represent society's moral force. Durkheim's analysis of the totem is thus rather like Feurbach's analysis of the God of the Christian religion, in which God is an unconscious projection of man's idealised virtues and power, but is nonetheless felt as a transcendent power.

I think Durkheim has captured some truth about emotional symbols. Some symbols are clearly better able to represent and arouse emotions. Good novelists are keenly aware of this.

Durkheim's analysis of the soldier's behaviour is a little unfair as he fails to consider any possible tactical rationale behind a perilous or life-sacrificing attempt to regain the standard from the enemy. The fate of the country perhaps does not depend on who holds a particular standard. But winning each battle of a war is partly dependent on moral. Seeing the enemy with the flag brings the image of defeat to mind. The heroic soldier may be trying to correct this demoralising state of affairs. More importantly for my case, would the soldier correct his behaviour on reevaluating the costs of his action? (I explored this in general in chapter 2 in connection with Weber's more elaborate scheme.) Even if we make the fantastic assumption that the soldier is only concerned with resting flags from the enemy, it seems incredible that he would attempt to rescue a standard if he thought it impossible or that as a remote consequence more flags would fall into the hands of the enemy. But in fact soldiers are concerned with other possible costs to their action, such as the loss of other men, especially in their own company.

The psychological theory behind Durkheim's analysis is surprisingly poor. When he talks about a symbol being charged with the feeling originally aroused by the object of the symbol, one is reminded of Pavlov's theory of the conditioned response. But then he says the feeling may be completely transferred to the symbol, and for this strange assumption he offers no argument. The theory of classical conditioning is the most elaborate version of Durkheim's sketchy associationist theory of emotion. Let us see how it fares in comparison. In Pavlov's theory the unconditioned

stimulus remains effective after the conditioned stimulus has been made effective. Although Pavlov's theory has been refuted in other respects, this implication of Pavlov's theory has remained unrefuted and forms part of the current theory of conditioning. In conditioning either an unconditioned or conditioned stimulus may be used to establish a conditioned stimulus. The original stimulus could become inactive only if it were not the stimulus to an instinctively unconditioned response; that it itself has been made effective only through conditioning. But this ineffectiveness is brought about by the process of extinction, in which the conditioned stimulus is repeatedly presented in the absence of the original (conditioned or unconditioned) stimulus. But the extinction of a conditioned stimulus will transfer to any stimuli that have been conditioned with it. Hence if one's emotional response to a country depends on a set of unconditioned stimuli that forms a part of that country then that country will always have this emotional significance; if, on the other hand, these stimuli are purely conditioned, then if they become extinct any other stimuli associated with them (e.g. a flag) will also become extinct. In either case Durkheim's hypothesis of a complete transfer of all emotion from the original emotional object to its symbolic representation is thwarted.

It is not obvious that more abstract concepts or symbols are always more effective in eliciting an emotional reaction than less abstract symbols. Extreme fear may be conditioned to the very abstract concept of redness. People develop phobias about open spaces, itself a fairly abstract concept. Neither is it clear that the most difficult concepts to fully represent are always the most abstract: it may be easier to form an image of the colour green than it is to represent to oneself all the important features about one's wife, friend or brother, and again these are objects of much emotion. We can imagine that changes in some of the

abstract features of the world would strike terror into the most insensitive: if, for example, people could walk through normally impenetrable objects. The terror would not be lessened by the fact that these changes are very abstract.

Psychological research, on other animals at least, shows that the range of conditioned responses that can be established depends on the species of animal. Animals display a certain selectivity in which stimuli can be paired with which responses. Rats, for instance, will learn to avoid saccharine-flavoured water whose ingestion has been followed by illness induced by X radiation, but visual or auditory stimuli cannot be so conditioned. Contrariwise, an avoidance response to electric shocks to the feet can be conditioned to auditory and visual stimuli but not to saccharine. (Garcia & Koelling, [1966], pages 123-4.) Perhaps there is selectivity of emotional learning to certain ranges of stimuli in Man, a selectivity which is not so easily captured, as Durkheim suggests, in the contrast between abstract and concrete concepts. The selectivity in man's emotional response may, as with the rats, cut across the distinction between abstract and concrete.

Both Chakotin and Durkheim rely on the notion of a purely noncognitive emotion, which presumably is equivalent to the physiological arousal we associate with emotions. But it is hard to see what use purely physiological arousal can be to either a politician like Hitler or someone concerned with long-term propaganda. If the aim is to induce people to organize and work toward a given goal, then simply increasing their respiration rate and heart beat etc will be futile. If the aim is to spread ideas then, again, a purely physiological stimulus with no ideas behind it will be useless. A major weakness of Chakotin's and Durkheim's theory is that the relationship between emotion and cognition is insufficiently explored. In order to assess

Chakotin's and Durkheim's theory it is appropriate to explore this avenue in more detail.

3.3.1. Evidence from Psychology

Experimental research into emotion suggests that in a normal state cognition and emotion are invariably connected.

Everyone agrees that an emotion can involve both physiological states - blood pressure, heart rate, perspiration etc.- and thoughts, for example, feeling angry toward someone for some reason. Now research seems to show that these two aspects of emotion can only be separated under the influence of drugs or surgery. In these abnormal conditions people can for example, know that they are in great danger, but remain quiescent; or when injected with a drug that causes the above physiological perturbations, 70% of subjects report no emotional experience, the rest report what may be called pseudo-emotions, that is, they say such things as "I feel as if I were angry". (Maranon, [1924].) More recently, Schachter and Singer tested the theory that both cognition and physiological arousal were necessary for a genuine experience of emotion. Simplifying their report somewhat, they found that subjects injected unknowingly with epinephrine, a drug that stimulates the above physiological correlates of emotion by activating the sympathetic nervous system, experienced anger or euphoria depending on their interpretation of these physiological conditions plus environmental clues. Subjects knowingly injected with epinephrine and with an explanation of its effects on physiology did not experience anger or euphoria. Subjects not injected with epinephrine but presented with the same environmental clues also did not experience anger or euphoria. Both arousal and interpretation were necessary and sufficient for emotional experience. (Schachter & Singer, [1969], pages 379-99.) Schachter conjectures that arousal of the sympathetic nervous system is necessary for emotion

but does not provide any distinctive cues with which to tell different emotions apart. The various emotional states are distinguished by our cognitions about the world.

3.3.2. High Arousal Interferes with the Transmission of New, Complex Ideas

High levels of arousal will certainly interfere with propaganda. Experiments have consistently borne out what is known as the Yerkes-Dobson law relating learning efficiency to degree of cortical arousal, and this law is not dependent on the type of learning involved. As arousal is increased from a state of sleep performance increases up to an optimum point beyond which further arousal leads to a deterioration in performance. Plotted on a graph the relationship is expressed as an inverted "U" shape. The Yerkes-Dobson law is really a precise statement of common observation. People rarely excel when half asleep or paralysed by fear or anger. It is ludicrous to suppose that Kautsky, Lenin, Trotsky, Stalin etc absorbed Marx's writings in a frenzied state of emotional arousal. *Das Kapital* alone takes weeks of sober, concentrated reading.

3.3.3. Intense Emotion Transmits Ideas Already Accepted

We must not reject Chakotin's theory without trying sympathetically to salvage some truth from it. While high arousal may be detrimental to the learning of complex and novel ideas, it may assist the transmission or reinforcement of simple, more familiar ideas. Experiments have shown that the more familiar or simpler the items to be learned the higher is the optimum level of arousal. So the propagandist's method of whipping up of emotion (and I grant that the type may not matter much) could assist in getting people to do something simple and / or that they are already

predisposed to do. The ironic result is that emotionally charged speeches are only useful in getting people to act on ideas that they already accept or on some watered down version of the full-blown doctrine.

Intense emotion may help sustain a position once acquired. Racism, for example may be instilled with calm argument or assertion, but once acquired may generate intense emotion that interferes with the understanding of critical arguments. But intense emotion cannot be used in general to instil the new idea in the first place (whether this is a radically new idea, or a subtle combination of old ideas). What the irrationalist thesis gains on the roundabout it loses on the slide.

It must be noted, however, that this barrier only applies in those cases in which the racist has correctly identified the critical bearing of a message. This leaves open the possibility that he can learn something that is only later identified as having a critical bearing. This is a common phenomenon. It is common because almost everyone possesses a vast number of moral and factual assumptions about the world which cannot themselves be fully surveyed, let alone checked for all the implications that would flow from combining new ideas and theories in various logical ways with them. Simply determining whether c follows logically from a theory T is often an extremely difficult task. (See chapter 1 and chapter 4 on the unfathomable content of theories.)

3.4. Suggestion as Simple, Groundless Assertion

Chakotin's notion of suggestion is vague, so we can only propose alternative defensible interpretations and examine each in turn. The notion seems to be open to two interpretations: suggestion as groundless assertion, and suggestion as implicit argument. On either interpretation, however, Chakotin's theory can be undermined.

If suggestion is simple assertion, then it cannot really be called non-intellectual, unless Chakotin is stressing a matter of degree: that some people are better able and inclined to cope with more complex and abstract arguments and debate. But in that case the force of his argument is vitiated. All explicit arguments are connected series of assertions; one could call them complex assertions. In this sense reason is still required for interpretation of the assertions and there is not a great gulf between argument and suggestion. If suggestion is meant to refer to what is implied by the propagandist's assertions, then again it seems inapt to describe this as non-intellectual or as purely emotional, because the implications of an assertion are a matter of logic, and the mind's answer, right or wrong, to a problem of logic cannot be reduced to physiological arousal, but quite obviously involves reasoning. And if it involves reasoning, there is then an avenue for criticism to undermine the ideology sustained by suggestion.

Western culture is permeated by what Bartley has called justificationism, the idea that reason or rationality is equivalent to the giving of grounds for one's assertions (plus the idea that to criticize a position is to show how it violates a standard of justification). (cf. Bartley, [1962].) Bald assertions without reasons are taken to be

less rational or reasonable. This may have been one of the ideas guiding Chakotin when he contrasts suggestion and reason and Pareto when arguing that if ideologies are unsupported by proven propositions they must be supported by irrational feelings. Others who have attributed great importance to suggestion have explicitly defined suggestion in this way. For example, J A C Brown defines suggestion as

the attempt to induce in others the acceptance of a belief without giving any self-evident or logical ground for its acceptance. (Brown, [1972], page 25.)

Others have taken the use of simple assertion in propaganda as irrational. Bertrand Russell had this to say:

Non-rational propaganda, like the rational sort, must appeal to existing desires, but it substitutes iteration for the appeal to fact. The opposition between a rational and an irrational appeal is, in practice, less clear-cut than in the above analysis. Usually there is some rational evidence, though not enough to be conclusive; the irrationality consists in attaching too much weight to it. (Russell, [1938], page 144.)

And how are people lead to attach too much weight to it? By their desire and the frequent repetition of the message:

Belief, when it is not simply traditional, is a product of several factors: desire, evidence, and iteration. (Ibid. page 144.)

Pareto went so far as to define ideologies as scientifically unprovable positions and therefore based on irrational faith, which in turn can only be based on feelings. Behind every ideology there are simply feelings, the ideology is simply an attempt to rationalize these feelings by invalid scientific reasoning. Such spurious reasonings Pareto called "derivations". Pareto thought that people did not want to admit that their feelings on an issue were without

scientific proof because they thought that an unprovable position was without authority.

Brown's and Pareto's position is quickly vitiated once it is realized that there can be no self-evident grounds for a belief or assertion, and in general no certain proof of any statement. Moreover, the merit of science does not lie in its being able to prove its conjectures, but in its being able to offer better explanations of the world. Popper and Bartley have argued that there are no self-evident grounds for any belief. The idea of self-evidence was introduced to avoid the main problem of justificationism. If every assertion has to be justified then there is no end to justifying any assertion since the assertion provided to justify the first assertion itself requires another for its own justification, and so on (see section 1.2.2.). The notion of self-evidence was meant to stop this infinite regress. But no candidates for self-evidence have survived a critical examination. Intuition is liable to error and perception is liable to illusions and hallucinations. Even work in mathematics and logic is hypothetical, since one never knows what one has overlooked. All positions are incorrigibly hypothetical; as Xenophane said: everything is but a woven web of guesses.

It follows that Chakotin's division of the community into those susceptible to and those not susceptible to suggestion collapses if suggestion is defined simply as the assertion of some position, for as we saw in chapter 1, all argument (no matter how complex) must take some assumptions for granted.

Russell's position does not rely on the notion of self-evidence, but of rationally apportioning weight to evidence. It is thought that to have one's beliefs grow stronger or weaker in proportion to one's desire is irrational.

However, if one views wishful (and fearful) thinking as a way in which we can pursue our goals more efficiently, the appearance of irrationality dissolves (section 2.4.). Humans, like other animals, seek their goals by producing and testing hypotheses about the world. Because we are fallible and are liable to make mistakes not only in our initial hypotheses but also in assessing the evidence provided in the tests (e.g., we may wrongly interpret the non-sighting of some prey as the non-existence of prey in the neighbourhood) we might attain our objectives if we hold on to our beliefs even in the face of some apparent counter-evidence. If our ancestors had been disposed to give up their search for food or shelter at the first disappointed expectation, they would not have been our ancestors.

3.4.1. Suggestion as Implicit Argument

We could also interpret Chakotin's suggestion as referring to the fact that, particularly among those with little interest in ideas, much argument remains at an implicit level. Often, one or more of the premises of an argument will be left unspoken, the speaker leaving it up to his listener to supply the suppressed premise(s). The speaker may even neglect to assert the conclusion, again leaving it up to the listener to supply the suppressed item. Either of these omissions may be for rhetorical effect or simply convenience. Now in all of this reason is evidently needed, albeit operating covertly.

But one might still ask if the suppressed premises are protected from criticism on account of being hidden from view? This is unlikely, as they are unvoiced precisely because both parties know that both parties accept them; each knows what the other is thinking. But what of outsiders, potential new converts? They are ignorant of the suppressed items and so communications directed at them

cannot make use of them. Hence we have the paradoxical conclusion that suggestion cannot be used to obtain new recruits to the movement. They cannot easily be transmitted outside the initiated to a wider public, so any ideology that assumes this form will run a grave risk of extinction. Moreover, it is more difficult to police implicit assumptions and interpretations, which may then easily stray from the original position. So although they may be safe from outside criticism, they are also safe from maximum propagation and are subject to transmission errors within the initiated. Such is the logic of the propagandist's situation.

3.5. Influencing versus Determining Public Opinion

Chakotin's idea that the masses are the puppets of their leaders, of their "soul engineers", seems to be a gross exaggeration. A more defensible position is that the authority that any leader has is imputed to him by his followers by virtue of a theory they hold about him, and the "followers" accept or reject commands from the leader in accord with this theory. Moreover, this theory is open to revision in the light of arguments and experience, both moral and factual. This position is in accord with the modern economic theory of democracy.

Boudon assumes that both Durkheim and Weber agree that charismatic leadership overrides reason. However, Weber's position is closer to my own since he attributes a leader's authority to his actual performance: if the leader fails to lead his followers to victory or to prosperity etc., his authority will be taken away from him by his disappointed followers:

He must perform miracles if he wants to be a prophet, acts of heroism if he wants to be a leader in war. Above all his divine mission must "prove" itself in that those who entrust themselves to him must prosper. If they do not, then he is obviously not the master sent by the gods. (Weber, [1922], page 229.)

As an example, Weber cites the Chinese Monarch's extreme deference to his people, sometimes shown by committing suicide, on failing to extricate his people from a calamity such as a flood or defeat in war.

Durkheim's almost mystical position can be taken as representative of theories attributing charismatic leadership to factors impervious to reason:

We say that an object, whether individual or collective, inspires respect when the representation expressing it in the mind is gifted with such a force that it automatically causes or inhibits actions, without regard for any consideration relative to their useful or injurious effects. When we obey somebody because of the moral authority which we recognize in him, we follow out his opinions, not because they seem wise, but because a certain sort of physical energy is imminent in the idea that we form of this person, which conquers our will and inclines it in the indicated direction. (Durkheim, [1915], page 207.)

At least Durkheim, unlike Chakotin, recognizes that moral authority is given by the follower and not imposed on him by the leader. Durkheim fails to analyse what this "idea that we form of the person" may amount to.

Boudon agrees with Durkheim's analysis, adding the qualification that the feeling of respect for a leader may have something to do with his message. Nevertheless, Boudon says, what is said is believed because it is the leader who says it, and this is because leaders are often thought to be infallible. (Boudon, [1986], page 56.)

I have already dealt in chapter 2 with the general question of whether humans can act without regard to the feasibility and costs of their actions. However, we might ask whether a command from a charismatic leader would always be obeyed if either the follower thought that obeying it would render him incapable of obeying any more commands or he thought that the command conflicted with another command, or that obeying it would endanger his chosen leader. Given conflicting

commands, the follower must make the choice by himself since there can be no reliance on command.

As I argued in the introduction, even identifying a leader is a theoretical achievement. Whether someone is the leader is a question that cannot be settled conclusively on immediate inspection, and certainly not just on his say so, just as identifying one's father is a theoretical achievement whose implications go far beyond even a complete physical description. Boudon admits that if the Ayatollah Khomeini were to repudiate Islam his authority would suffer. But he could lose his authority if people simply thought he was an impostor. If the person called "Ayatollah Khomeini" were discovered to be an impostor, a finding that might require very subtle, abstract detective work, his authority over "his" people might vanish.

A difficulty for the almost mystical theory of charismatic leadership is that the authority of a leader is always circumscribed to a particular field of competence, something of which Weber was aware. The Pope or the Ayatollah would not be asked for their opinion on car maintenance. Their judgement on matters outside their ascribed field is not thought to be privileged or special. This is easily explained on the assumption that we choose leaders on the basis of a theory about them and their abilities.

Clearly, if one leader could determine the opinions of his audience, then there would be no room for contrary views, for criticism. Some small communities might approach this state of affairs. In 1978 more than 900 people died in Jim Jones's Jonestown, Guyana. At first it was thought that they had all committed suicide on Jones's command as part of a religious ritual. This alleged mass suicide has strengthened many in the belief that charismatic leaders can completely control the minds of their followers. However,

this initial theory has been undermined. Some have argued that no more than 200 died voluntarily, the rest being murdered by the administration of poison in to the upper arm in a position that it would have had to have been administered by someone else. Tape recordings of the killings also support this interpretation. (Barker, [1989], page 54.) But even if one accepts that all the members committed suicide on Jones' command, it does not follow that he controlled their minds. One could argue that the followers of Jones already shared much of his world view before they joined the Peoples' Temple and that his influence consisted principally in channelling these beliefs into certain activities.

Moreover, even if an individual can control the minds of a thousand people, no leader could ever be so influential as to determine the opinion and feelings of millions of people, even if we confine ourselves to matters of important governmental policy. The turn-of-the-century German Social Democrats illustrate this ineradicable intransigence of the "masses". The German Social Democrats were lead by Marxists but the mass of social democratic voters reserved some opposition to their leaders despite their support of the party. The Marxists advocated proletarian internationalism and an opposition to war, but the rank and file were no less nationalistic than the voters of other parties in Germany and elsewhere, and some were quite prepared to die on the battlefield for their nation. Again, the overwhelming majority of politicians and opinion leaders in Britain for decades have been strongly against capital punishment; but the majority of the population have steadfastly favoured it.

Still, there is some truth in the important role that Chakotin attributes to intellectuals, but it is not simply in converting other intellectuals (the 10%) to new ideas. The truth is that the ideas of intellectuals form the

framework, the background assumptions, in terms of which the masses identify, interpret, accept and reject leaders and their messages. Walter Laqueur in his book on the Weimar Republic mentions that views similar to National Socialism were popular in the universities before they became generally popular. Hayek makes the same point in his The Road to Serfdom, [1944]. In general as Keynes said:

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. (Keynes, [1936], page 383.)

3.5.1. Long-term Propaganda versus Political Canvassing

Hitler, Edmund Wilson and Chakotin were lead into their position on the immutability of political beliefs because they took the politician's view of ideological change: from one election to the next there is little fundamental change in peoples' views and values. The politician's aim is power for his party at the next election. There is no time to change public opinion on fundamentals, so his only alternative is to try and convince the public that he already holds their views and that his party will most effectively implement them. The politician operates on a stage already fitted-out by a long process of abstract intellectual argument. Politicians who have flouted this constraint, who have been more concerned with promoting an unpopular opinion, have suffered a loss of actual power. Enoch Powell, Goldwater and McGovern are politicians who have forsaken power for their greater concern with trying to persuade the public of their policy ideals. On the other hand, Johnson, Heath, Harold Wilson and Nixon, all of whom adapted to public opinion rather than try to change it, were notably more successful at gaining power. Now that he is no longer in the race for leadership Heath is now more

concerned with long term objectives, such as a federal European state.

This view of the behaviour of politicians is borrowed from the new economics approach to politics, substantially developed in the University of Virginia, particularly by Gordon Tullock. (cf. McKenzie & Tullock, [1975] & Tullock, [1976].) In this model voting and buying are seen in the same light: the same man behaves in an economic way whether in the supermarket or the voting booth; he will choose the product or candidate he thinks is the best bargain for him. Seen in this light, Enoch's, Goldwater's and McGovern's approach to politics is like trying to sell the Ford Edsell and the new version of Coke long after they flopped. Of course, political policies do not strictly coincide with popular opinion, as the earlier example of capital punishment shows, but unlike Chakotin's theory, the Virginian theory does not have to assume that there is strict control running from the controllers (in the Virginian School, the voters) and the controlled.

Edmund Wilson's Nazi and Tory were reasoned into their positions. Decades of abstract argument by intellectuals such as Oswald Spengler, Werner Sombart, and Friedrich List preceded and made possible Hitler's rise to power. The German people have been depicted as puppets of Hitler's emotionally stirring speeches. But perhaps Hitler was expressing in a clear, simple and dramatic way what had already become the predominant ideology. It may have been this facility to express the "common sense" of his time that made his speeches so stirring. Hitler gained power because he was able to convince the German electorate of his superior ability to govern in accordance with goals and theories that they had already embraced, not because he was able to excite an agitated cocktail of thoughtless emotion, or because he was able, single handedly, to inculcate in a

few years in the minds of millions the ideas behind National Socialism.

3.5.2. Thinking About Abstract Ideas versus Thinking in Accord with them.

Durkheim's, Chakotin's and Hitler's intuition that there is an important difference between the ideologue and the broad masses in their attitude to abstract ideas was right but inaccurate. The masses are indeed poorly acquainted with abstract ideas, but it does not follow that they do not think in accord with them. Many of the concepts and presuppositions that we take for granted in daily life are susceptible to quite complex and intricate analysis. Everyone uses numbers to count their groceries without having to understand Russell's definition of a number in terms of the number of a given class: the class of all classes similar to the given class.

The same point can be applied to more emotive concepts. While democracy, patriotism and leadership, etc., are for the broad masses abstract principles they take for granted as means for solving social problems, for the ideologue, democracy etc., themselves are objects of thought and argument.

On the other hand, one could argue that the broad masses are more familiar with the abstract notion of democracy than with the particular institutions that effect it. Few Britons could explain how Parliament operates, but everyone is able to state that democracy is the rule of the majority. This is a problem for a Durkheimian theory for it would imply that if given a choice between the concrete (totemic) parliamentary building and abstract democracy, the populace would automatically opt for the building (itself absurd) because, in Durkheim's theory, the particular object is more

familiar and easier to represent than an abstract characterization of it.

3.6. Fitting the Theory to the Emotion

A more recent exponent of the theory that the emotion and morality in ideologies is prior to and independent of theory is Minogue. (Alien Powers. [1984].) Minogue's theory, however, differs from that of Durkheim, Chakotin's and Hitler's in that it attributes a greater role to theory. It is similar to Pareto's theory of rationalization. Minogue argues that it is moral censure that engenders the Marxist's acceptance of the labour theory of value, not the other way round. The Marxist hates capitalism anyway, with or without the economic theory. The labour theory of value is just consonant with the prior feeling that capitalism is exploitative, and the Marxist adopts it despite the fact that

An inquirer who discovers realities deserving of censure is more impressive than a censor who picks and chooses his theories to support his emotions.
(Ibid. p. 58.)

The rich have throughout history been censured for greed, luxury, idleness and much else. The ideologist simply picks and chooses his theories to fit these emotions. Therefore, even if the theory succumbs to criticism, the moral censure will prevail; censure survives theory.

Minogue illustrates his point with the labour theory of value. He quotes Bertil Ollman:

The labour theory of value forces the capitalist to justify his role and the benefits he receives in a context where no justification is possible. It puts him in a corner from which there is no escape other than the practical one of keeping the workers from realizing their situation. (Ibid. p. 57.)

Minogue attempts to show how confused such a position is. The labour theory of value, Minogue points out, is normally advanced as a scientific account of reality, revealing the laws of motion of capitalist society. But, Minogue continues, laws of motion are no basis for an indictment; on the contrary they render both indictment and justification logically pointless.

The term "capitalist", Minogue says, has acquired an ambiguous meaning. In one sense it refers to a social type created by the inexorable laws of social evolution; in the other sense it refers to the class of employers who have been caught out committing the crime of robbery. Ollman's certainty that no justification is possible derives from the supposedly scientific theory connected with the first sense; it is the second, quite different and incompatible theory, that makes it appear to Ollman that indictment is at all meaningful in this context.

Is it true, as Minogue asserts, that a scientific law cannot in principle be the basis for an indictment? The following syllogism might be taken as a possible counter-example:

Anything that necessarily involves unpaid labour
should be swept away;
Capitalism necessarily involves unpaid labour;
Therefore, capitalism should be swept away.

Compare this with a feminist argument:

Anything that necessarily involves patriarchy
should be swept away.
Capitalism necessarily involves patriarchy.
Therefore, capitalism should be swept away.

Each of these is a valid argument. One of the premises must be a value judgement, but it still seems to be a counter-example to Minogue's assertion. The point is that the law-like statement, the second premise, makes it possible to validly infer the moral conclusion, which is an indictment.

Perhaps Minogue's point is that an indictment presupposes that the indicted could act differently, and so cannot apply to strictly inevitable behaviour. However, Minogue does speak of laws as such, not of statements of inevitable developments. (However, if the Marxist abandons his talk of inevitability, and instead talks of laws in a scientific sense, then indictments are not strictly futile.

Indictments may be considered as part of the initial conditions determining human behaviour. By taking certain drugs one places oneself under the influence of certain laws of physiological psychology which predispose one to aggressive behaviour. But it is still quite appropriate for others to censure me, if the censuring is thought likely to stop me taking the drug in future.)

Vacillation between one interpretation and the other helps to deflect criticism, but the rhetorical impact of Minogue's analysis of the ideologists manoeuvres should not be underestimated. Ollman may well succumb to Minogue's dissection. Still, Minogue contends that even if Ollman's confusion were cleared up and he were also convinced that the labour theory of value is false, his censure of capitalism would survive. There is some truth in Minogue's position. George Bernard Shaw was persuaded of the falsity

of the labour theory of value, but his repugnance for and censure of the capitalist continued, albeit as a non-Marxist socialist. Two more recent examples are the Marxists John Roemer and Ian Steedman:

...the labor theory of value was intended to emphasize the fact that capitalists exploit workers in a capitalist system. Although the labor theory of value is false, I think the conclusion is true. (Roemer, [1988], page 2.)

Roemer entirely discards the classic Marxist definition of exploitation in terms of surplus value and instead defines exploitation in terms of the inequality of outcome associated with the unequal ownership of property.

Steedman has explicitly rejected Marx's theory on the grounds that even if Marx had succeeded in transforming input prices his argument is internally inconsistent. Steedman has opted for the theory developed by Straffa, in which the conditions of production and the real wage paid to workers, both specified in terms of physical quantities of commodities, suffice to determine the rate of profit. In this model labour values are not proportional to prices, and neither is the total surplus value equal to total profit. The connection with exploitation in Steedman's eyes, like Morishima's, is retained because in Sraffa-like models it can be shown that profit will be positive if and only if there is surplus value, i.e. capitalist exploitation. (Steedman, [1977].)

But is it true that the censure would survive the demise of any theory? Popper has emphasized that our empirical experience is theory impregnated. But equally, theoretical interpretation also pervades all our moral experience. It is sometimes difficult to point to the exact theory that lies behind a moral position, if only because people's

avowed reasons for holding a position are not always the same as the real reasons. Matters are further complicated by the fact that in many cases an emotion is supported by more than one theory. It might be that though the emotion can prevail in the absence of one or more of its theoretical supports, it cannot prevail if they all collapse. Nevertheless, in saying this it is admitted that the reasons are there. Through this admission we again have an avenue for the impact of theoretical criticism.

Although Minogue may have represented accurately later Marxist intellectuals, he fails to capture one of the reasons behind the original Marxist repugnance towards capitalism. What offended Marx and Engels most about capitalism was that it is unplanned, a conspicuously intellectual complaint. There is a lot of planning within the market, for instance in the way labour was organised within each factory, but there is no overall planning. Each car company might plan to make a certain number of cars per year, but the total number of cars produced in any one year is not planned. To Marx this was irrational, and socialism would replace this anarchy of many plans with a rational system based on a single plan. This attitude explains why they saw a trend to larger companies as a welcome move toward socialism. The cartels or "trusts" that Engels witnessed toward the end of the nineteenth century were the germ of socialism within a moribund capitalism. The labour theory of value is perhaps an attempt to give some theoretical embroidery to the already existent feeling that the wealthy exploit the poor. The wealthy, as Minogue says, had always been censured for this, but they had rarely been censured for being disorganised before. Such a complaint bears little kinship with the much more spontaneous untutored envy that Minogue speaks of; Marx's complaint requires more intellectual sophistication. (On this neglected aspect of Marx's thought see Steele's forthcoming

Book, Marx and Mises: Socialism and Economic Calculation.
Open Court.)

Minogue's account makes a mystery of the ideologist's use of theory, for if the requisite emotions exist willy nilly, why bother with the theoretical embroidery? To appear academic or scientific, perhaps, and thus steal some of the authority of academia and science. But does not the authority of science derive from its success at discovering truths? Perhaps truth, and thus reason, is important to ideologies, after all. Now if one grants that theory lies behind all our moral and emotional experience, then why not take the Labour Theory of Value as at least one of the factual theories behind the Marxist's rejection of capitalism?

3.7. Moral and Amoral Feelings and Factual Assumptions

Marx's and Engels' advocacy of communism is based on the theory that it is possible. Thus Roemer clearly takes this for granted when he says that

The private property system is just one possible way of organising economic activity; it may have been the best way for a certain period but is probably not the best way today, nor will it be in the future. (Ibid. page 11.)

This is typical of moral ideals: they are rarely advocated if they are thought to be unattainable. Some ideals are advocated as goals to be approximated, but if they could not even be approximated the injunction would lapse. Even the advocacy of ideals in a cynical manipulative manner is based on certain factual assumptions.

All moral and amoral feelings are based on factual assumptions. All cognition is emotional and all emotion is cognitive. Emotions such as anger, love, disgust etc have objects to which they are directed by thought. One does not simply feel anger, one feels angry about some object of one's thought. The fact that someone holds an emotional, perhaps even violent, position does not mean he is irrational: for these emotions are under the control of that person's conjectures about the factual state of the world.

As David Hume put it:

The moment we perceive the falsehood of any supposition, or the insufficiency of any means our passions yield to our reason without any opposition. (Hume, [1739], page 158.)

If a Marxist is convinced by argument that the market system is not the cause of poverty, or of the other things he loathes, his righteous anger against the market will

subside. The moment the Marxist is convinced that communism is impossible his ardour for revolution will wane (unless, of course, the revolution becomes a means to other ends, but then the same argument applies to these new ends). To obtain the Marxist's approval of or resignation toward capitalism it need not be denied that capitalism exploits workers, for there may be no better alternative. To return to our syllogistic moralizing, one might have the argument:

Anything that involves murder should be abolished.
Society involves murder.
Therefore, society should be abolished.

Of course, no one is going to suggest that we all voluntarily kill ourselves or live as hermits. A certain amount of unpreventable murder is accepted as a necessary price for all the benefits of living in societies, along with the possibility of contracting contagious diseases etc. So we may conclude that the Marxist's argument, even if it did establish that capitalism were exploitative, would not be conclusive. One would have to look at his alternative. So Ollman is wrong to say that the defender of capitalism is "in a corner" without any escape but deception.

If all emotions are cognitive, it follows that if ideologues succeed by appealing to emotions, they must do so by appealing to reason. But they can only do that through theory and argument. As a corollary, the fact that ideologies are based on emotion does not protect them from factual criticism.

The only possible counterexamples that I have been able to think of to the theory that all emotion is cognitive are perhaps moods and the psychological states brought on by certain drugs (e.g. Caffeine apparently induces anxiety). It is hard to imagine caffeine having anything to do with the acceptance or rejection of an ideology. A mood can be

understood as a succession of similar thoughts. For example, a depressed mood is a series of depressing thoughts. Alternatively, a mood may be interpreted as a disposition to entertain emotions of that mood because of some temporarily accepted theory which colours a person's interpretations of events. It is not uncommon for people who have been burgled, for instance, to find themselves in a depressed mood, and this because of a temporarily lowered opinion of people in general.

The moral element to ideological systems might seem to rule out factual criticism right from the start. The Fascist feels that the state is morally good; the anarchist feels the state is morally bad; and that is an end to the matter. Many philosophers have denied any logical connections between moral and factual claims. They have taken to heart Hume's conclusion that no moral position can be logically derived from a factual statement.

Many have gone as far as to endorse G.E. Moore's verdict that

No truth about what is real can have any bearing upon the answer to the question of what is good in itself. (Principia Ethica, [1903], page 118.)

Hume's conclusion still stands, and so does Moore's verdict. Suppose it had been established that humans are instinctively prone to aggression; it would not follow logically that humans ought to be aggressive. Equally, if they were shown to be instinctively communal; this would not license the logical derivation of the idea that humans ought to be communal. However, we have no reason for concluding that facts have no logical bearing whatsoever on moral positions. Although no moral position can be derived from factual statements, facts may undermine moral injunctions.

If one advocates communism and communism, however defined, happens to be impossible, then one's moral injunction is undermined by the facts. The injunction that one ought to help bring communism about seems to imply that one can actually contribute to its emergence, and is therefore undermined by the impossibility of complying with it. In many cases "ought" seems to imply "can". Bartley supplies an instructive example:

Suppose that it is argued that one ought not to punish criminals but to treat them all psychologically in order to cure them of criminal tendencies. To this proposal it is retorted that "ought" implies "can", and that there exist some criminals - for example those with certain genetic defects - whom it is impossible to cure by psychological treatment. The example is not fanciful: the XYY chromosomal abnormality has been widely associated by researchers with criminal behaviour and/or low intelligence in adult males; and recent studies show that one male in every 300 may be born with just this abnormality. This factual information, which bears logically on the original proposal for a different public policy, will if taken seriously lead to a modification of the proposal. Thus Dr Park S Gerald of the has urged that a large scale study of XYY incidence should be done because "a great deal of social planning could be related to this. These people (with XYY syndrome) might still get into trouble despite present welfare programs. (Bartley, [1962], page 200.)

Still, Moore's position represents a problem for my approach since it would imply that different ideologies simply have fundamentally different values. There are ends of human action and there are means to those ends. One can argue about the correct or most efficient means to a given end, but when it comes to those given ends themselves, there is no fact of the matter.

My answer to this problem is as follows. The adoption of a moral end is like the adoption of a factual position in this respect: they are both conjectures. In the one case we guess what is true; in the other case we guess what is morally good. In either case we can be wrong. (The idea that morals are conjectures is neutral as to whether morals are feelings, tastes, or objective realities.) How do we check our guesses? Well, in the case of factual guesses, we can compare what we think with the world in observation and experiment. Perhaps we cannot do this with moral guesses, but we can compare one guess with another to check for coherence. We can also check the costs of each moral value in terms of the others. Often the relationship between our morals and our factual assumptions is not obvious and needs an argument or a different perspective to bring it to light. For example, Roemer concentrates on the alleged greater inequality of income and ownership in capitalism on the assumption that this is the decisive issue between capitalism and socialism. (Ibid. page 3.) In taking this approach he neglects to examine an unconscious assumption: that inequality and poverty go hand in hand. This explains why he fails to consider the following moral choice between two types of society: a society of great inequality and a society of great equality, but whose poorest (or average) are even worse off. The type of society that produces the greatest inequality may also be that which lifts the poorest (and/or the average) the highest. If this relationship does hold then any choice between the societies would have to check the cost of each of two moral values in terms of the other: the marginal cost of an increment in equality in terms of a loss of income on the part of the poorest (or the average). My point is that any such balancing of moral values depends on the assumption that their satisfaction in reality is related, and that this makes relevant factual criticism of a moral position.

Another answer is to point out that there are no fundamental differences in values. What are taken as fundamental differences in values are differences of opinion on factual matters. Why should we adopt such a position, since it seems to fly in the face of the myriad varied religions, moralities and political positions that we see in the world? Such a position will appear less strange once we bear in mind that all human beings evolved from the same ancestors, and although their anatomy and physiology varies, along with their tastes, their most urgent values are the same the world over. Ludwig von Mises argues that all peoples have the most urgent values in common:

This fundamental fact is often ignored. People believe that differences in world view create irreconcilable conflicts. The basic antagonisms between parties committed to different world views, it is contended, cannot be settled by compromise. They stem from the deepest recesses of the human soul and are expressive of a man's innate communion with supernatural and eternal forces. There can never be any cooperation between people divided by different world views. However, if we pass in review the programs of all parties - both the cleverly elaborated and the publicized programs and those to which the parties really cling when in power - we can easily discover the fallacy of this interpretation. All present day political parties strive after the earthly well-being and prosperity of their supporters. They promise that they will render economic conditions more satisfactory to their followers. With regard to this issue there is no difference between the Roman Catholic Church and the various Protestant denominations as far as they intervene in political and social questions, between Christianity and the non-Christian religions, between the advocates of economic freedom and the various brands of Marxian materialism, between nationalists and internationalists, between racists and the friends of interracial peace. It is true, that many of these parties believe that their own group cannot prosper except at the expense of other groups, and even go so far as to consider the complete annihilation of other groups or their enslavement as the necessary condition of their own group's prosperity. Yet, extermination

or enslavement of others is for them not an ultimate end, but a means for the attainment of what they aim at as an ultimate aim: their own group's flowering. If they were to learn that their own designs are guided by spurious theories and would not bring about the beneficial results expected, they would change their programs. (Mises, [1949], pages 180 - 181.)

However, Mises did not explain why this should be so. Darwinian theory combined with the common origin of the world's races would seem to suggest that all humans should have broadly the same set of urgent wants and dislikes. Hominids seem to have originated in Africa. Most of the detectable evolution of the hominids from pre-hominid to Homo sapien sapiens occurred in the African population. Circumstantial evidence for a great overlap of preferences is the fact that the market for mass-produced goods is world-wide, and the rapidity with which Western technology and consumer goods are absorbed even by primitive societies. The world-wide clamour for western goods is so conspicuous that it has been called "cultural imperialism". But two temples made of the same brick may be temples to different gods. Better evidence are the so-called social universals found by anthropologists: sanctions against murder and theft, the institution of marriage, the acceptance of patriarchy, etc. An overlap in values also explains why Christian missionaries have had so much success in every society known to anthropology.

3.8. The Role of Intense Emotion

Although I think it has been exaggerated, emotion does have a role to play in the evolution of an ideology. I argue that emotion presupposes theory, and therefore cannot be the source of an ideology. If this were so then one might expect original ideological texts to be poems or novels, since these forms of literature evoke the most powerful emotions. But they are not. Nevertheless, poems and novels may well help to perpetuate an ideology already accepted by applying it to particular circumstances and thereby evoking strong emotions. This seems to be the case with the works of Dickens, Zola, Jack London, Upton Sinclair. As I argued in the introduction to the thesis one should distinguish between movements and the ideologies that those movements help to perpetuate. There are new movements with new ideas, and old movements with old ideas; there are also old movements with new ideas, and there are new movements with old ideas. According to the theory of emotion expounded above, intense emotion, provided by poets, orators and novelists, would be most useful to old and new movements with old ideas.

Hitler was wrong to think that the most intense emotions are the most long-lasting. Emotions of the agitated sort - the emotions of parades or riots - cannot alone be responsible for the creation and the initial fostering of an ideology, for they are too short lived to sustain the intellectual creator of the ideology through the thousands of hours of writing and arguing his case. Neither can the perpetuation of the ideology once accepted be imputed to intense emotion alone. It is psychologically impossible to be intensely emotional for more than half an hour or so. Of course, a disposition to intense emotion may persist for years. But in that case, why should "love be less subject to change than

respect", or "hatred more lasting than mere aversion"? Respect may outlast love and aversion may outlast hatred because love and respect require less effort. The long-term propagandist must have a profound taste for theory and argument themselves, independent of the excitements of righteous anger and missionary zeal. Emotion arises when a person applies his ideology to a particular right or wrong. Contemplation of the abstract structure of the ideology itself arouses little agitated emotion, save that connected with the beauty of the theory.

Good novelists and journalists know well that it is concrete and particular things which most excite interest and emotional involvement, although as I said in connection with Durkheim, the difference between more and less emotive writing is not fully captured by the abstract/concrete distinction. If ideological change were a matter of exciting agitated emotion, one would expect a high proportion of novels and other literature concerned with particulars to be among the original texts of ideologies. However, there are none, yet poems and films are amongst the most evocative forms of art. I do not want to deny that some poets and novelists can be counted among the originators and contributors to mass movements. Bernard Shaw, influential member of the Fabian Society, and Ayn Rand, founder of the Nathaniel Branden Institute, are examples. But to the extent that their respective intellectual movements had distinctive ideological content one must look less to their emotive work and more to their abstract arguments and treatises to explain this. The more abstract an argument is the more difficult it is to incorporate it in popular novelistic or poetic work, although there are some works of popular fiction that contain fairly abstract argument: the Ragged Trousered Philanthropist being just one notable example. The most popular novels and poems take the prevailing ideology for granted, and are preoccupied by

particular people, their hopes and fears, their successes and failures - in short by the vicissitude of their day to day existence.

Eric Hoffer, author of The True Believer, said that

the readying of the ground for a mass movement is done best by men whose chief claim to excellence is their skill in the use of the spoken word. (Hoffer, [1958].)

In the introduction to his book My Struggle, [1933], Hitler expressed his belief that more converts to mass movements had been won through the spoken word than through the written word. The suggestion is that the spoken word is more moving than the passive text and hence is more important for the emergence of an ideology. But it is not the man of words as such but the man of abstract theory and argument who lies behind the origin of mass movements. A flood of words may mask an arid and theoretically infertile mind. On the other hand, if we bear in mind the distinction between a movement and its ideas, we may agree with a more precise statement of Hoffer's and Hitler's view: that the spoken word is important for the creation and maintenance of a movement with old ideas. Hitler's error lies in the assertion that all of "the most tremendous revolutions on this Earth" were created by intense "hysterical" emotion.

Hitler asserts that none of the tremendous revolutions have been inspired by scientific teaching. Yet the abolition of the mercantile restrictions on trade and the rise of liberalism is in no small measure attributable to Adam Smith's abstract economic analysis The Wealth of Nations, a work not lacking in abstract argument.²⁶ Hitler's assertion suggests that the creator of the basis of a mass movement must be concerned with particulars, which I have tried to undermine. I do not want to deny, however, that those

preoccupied by particulars have an important role in the evolution of ideologies. Historians and journalists, for instance, often provide information about particular events which may serve to refute the factual assumptions of an ideology and thereby undermine its authority. But even here in the field of refutation as opposed to theory creation, it is often the connoisseur of abstract theory and argument who makes the most of the material provided by the journalist and historian. As a rule, the journalist and historian take for granted the abstract theories they use, of which they may only be dimly aware, while they focus on the uniqueness of the historical phenomena they have chosen to describe or explain.

3.8.1. Intense Emotion and the Theory of Advertising

Even though emotion is not the source of an ideology, perhaps it still has some role in the acceptance and rejection of ideas? An objective account must tease out what truth there may be in those theories in which emotion plays such a central and often exclusive role. There is good and bad poetry - effective and ineffective, quite apart from the logical rigour of the poem. Perhaps there is something analogous to poetry that could be used to manipulate people.

Contrary to Hitler, Chakotin, Wilson, Sargant and many other writers, the effect of intense emotion - parades and dramatic speeches etc - is not the direct inducement of belief, but simply the conveyance of a message. Effective advertising packages the message in an attention-grabbing and memorable form, and all propaganda faces the same problem. Most writers underestimate the problem of simply conveying a message, and have attempted to discern all kinds of strange and insidious powers behind modern advertising techniques. The power of advertising is easily

overestimated because we do not often see the advertisements for goods that fail to sell, simply because such goods are taken of the market. Successful goods make for successful advertisements.

The extravagance and eccentricity of much advertising is seen as a sign that it appeals to the irrational in man. But the attraction and maintenance of attention, and the making of a memorable message seem to be the main function of successful advertising, something that is eminently rational. There is no implication here that the recipients of such communications are led to endorse an idea independently of their reason's grasp of some theory, and thus no suggestion that what they endorse or their endorsement itself is immune to criticism.

This minimal theory of advertising can help us see the relevance of evocative forms of literature and art to ideologies. Producing a best-selling novel can attract attention to a writer's other more abstract work which only later catches on. Ayn Rand seems to be such a case: she was a very successful popular writer before she founded her "Objectivist" theory of ethics. Her early books put her in contact with other intellectuals who were then persuaded of Objectivism.

I would summarize the role of emotion in ideologies as:

- (1) Facilitating advertising: making an attention capturing and memorable message.
- (2) Eliciting already available or easily learnable behaviours.
- (3) Inducing relatively simple messages. (recall the discussion about the Yerkes Dobson law.)

Chapter 4

Can an Ideology be Saved from Criticism by Immunizing Stratagems or by other Clever Reformulations?

- 4.1. Popper's own examples of immunizing stratagems.
- 4.2. The demarcation problem.
 - 4.2.1. Problems with the demarcation criterion and the criticizability of metaphysical theories.
 - 4.2.2. Empirical versus metaphysical criticism.
- 4.3. Damaging versus eliminating a network of ideas.
 - 4.3.1. Do all immunizing stratagems abandon the theory for whose protection they were introduced?
 - 4.3.2. Hard-core versus protective belt.
 - 4.3.3. Duhem's problem.
 - 4.3.4. Changing demarcation between the hard-core and protective belt.
- 4.4. Factionalism generated by unpredictable emergence of incompatible immunizing stratagems.
 - 4.4.1. Unfathomable implications of an ideology.
 - 4.4.2. The General structure of immunizing responses to criticism.
- 4.5. Case study: Marxism
- 4.6. Labour theory of value.
 - 4.6.1. The problem the labour theory of value was meant to solve.
 - 4.6.2. A series of inadvertently self-inflicted injuries to the Labour Theory of Value.
 - 4.6.3. Summary of development of the labour theory of value according to our schema.
 - 4.6.4. Abandonment of the theory of exploitation and profit.
- 4.7. Case study: Freudianism.
 - 4.7.1. The criticizability of Freud's basic theory
 - 4.7.2. Empirical interpretations and refutations of Freud's basic theory must appeal to background knowledge and problem situation..
- 4.8. Refutation versus elimination of ideologies.
- 4.9. Conclusion.

Introduction.

A ubiquitous assumption is that an ideology can set up logical barriers to criticism, giving it an evolutionary advantage in the competition of ideas. The possibility of setting up such logical barriers to criticism can be explored in connection with the so-called immunizing stratagem. I shall also explore the implications for the propagandist of Duhem's and Lakatos's argument that a theoretical system can only be tested and criticized as a whole because any part of it may be made safe from criticism by suitable adjustment to other assumptions of the system. My aim is not to show that a network of ideas cannot deflect criticism in any way by logical means, but rather to show the limitations and costs of trying to do so. Immunizing stratagems either abandon the theoretical system they are supposed to protect and/or lower the survivability of the system. Duhem's and Lakatos's arguments cannot be used to show that a privileged part of a system may be guaranteed from criticism because of the unfathomable content of theories and hence the unforeseeable evolution of their defence. In chapter 1 I touched on the difficulty of achieving conformity in the interpretation of a theory. In this chapter (4.3.) I will expand in detail how this leads to the emergence of factions that disagree on how best to defend an ideology and even on what to count as the privileged part of an ideology and what to count as the dispensable part.

Karl Popper originally used the term "conventionalist stratagem", but then adopted the term "immunizing stratagem" from Hans Albert to describe an aspect of the unscientific methodology of certain ideologies claiming to be scientific, Marxism and Freudianism. **Apparently Arther Pap anticipates this usage.** 27 Popper argued that Marxism, which originally

was an empirically testable theory, had been recast in the form of empirically irrefutable metaphysics. This manoeuvre, Popper argued, saved Marxism from refutation and immunized it against further attacks. (Popper, [1976], page 43.) Freudianism was, Popper says, irrefutable from the beginning. The basic theory of Freudianism does not need any immunization to make it irrefutable. Nevertheless, it does incorporate immunizing stratagems. Popper contrasted these two theories with the theories of Newton and of Einstein which were full of testable (i.e. falsifiable) content. Thus the term "immunizing stratagem" arose in connection with Popper's attempt to solve the problem of distinguishing scientific from pseudo-scientific theories - the so-called demarcation problem. Popper's solution was the methodological rule to allow into science only empirically falsifiable hypotheses, and subject these to severe criticism. In addition, theory development was to proceed from less to more testable, i.e., more informative theories. If a theory is refuted and an alternative sought, it had to be more testable, not less, and the more testable the better. For to reduce testability is to reduce knowledge, but in science we desire the growth of knowledge. An immunizing stratagem is a development in theory that reduces testability.

4.1. Popper's Own Examples of Immunizing Stratagems

Popper says that immunizing stratagems save theories from refutation. However, Popper's own examples of immunizing stratagems undermine the claim that an ideology can maintain itself against criticism by logical means. Popper's examples are not examples of saved theories but examples of repudiated theories: to immunize a theory in these cases is to abandon it. The two main effects of these immunising stratagems are (1) Saving the theorist from embarrassment at the price of abandoning the original theory; (2) clouding

the issue and reducing information content. The latter obviously interferes with the growth of knowledge. I think that Popper was dimly aware that immunizing stratagems do not strictly save theories (in some cases he puts the word "saved" in scare quotation marks), but he did not see the full implications of this, especially for the survival of an ideology.

To illustrate points (1) and (2) I have chosen the simplest of Popper's examples. Popper [1934] asks us to consider the case of a man who makes the bold claim that all swans are white, but on being presented with a black swan promptly denies that it is a swan. After all, he says, whiteness is part of the definition of the word "swan". Popper says that the theory has been saved from refutation. However, what had been an empirical theory about the world was turned into part of a definition. This is more accurately expressed this way: the original theory, supposedly protected by the immunizing stratagem, has been replaced by an implication of a vacuous definition.

This logical point is worth expanding. The original theory was empirical in Popper's sense: it was capable of clashing with reality. The statements "All swans are white" and "There is a black swan" cannot both be true. A definition or implications derived exclusively from a definition, however, cannot clash with reality for they say nothing about the world. Thus there could not have been a more drastic repudiation of the original theory: only the words are the same. But the repudiation is implicit and unacknowledged, thus saving face despite abandoning the original claim. Once this is accepted we can derive some interesting implications about the evolution of an ideology under criticism.

Of course, in a real life people do not simply make such bold assertions out of the blue. Rather, they are made with a certain intention, background assumptions and more or less clearly formulated problems. It is this context of assumptions and problems that both guides us in identifying an immunizing stratagem and in refuting the original assertion. For example, the sentence "All swans are white" might be derived from a biological theory of colouring in birds. Knowing this allows us to exclude a whole range of immunizing stratagems that contradict this biological theory or seem to make irrelevant the intention of maintaining the biological theory as a solution to the problem of colouring in birds.

Provisionally, we may define an immunizing stratagem as an evasion of falsification by the reinterpretation of a theory or the modification of its assumptions so that the modified theory is then consistent with the critical evidence. The reinterpretation or modification must consist in a reduction of information content, which is defined as the class of all and only those statements that are logically excluded by the theory.

Scientific development can be described in terms of concepts, theories, problems, method and evidence. We can classify immunizing stratagems with respect to these categories.

Conceptual immunization. For example, conventionalist interpretations of Newton's laws of motion portrays them as definitions and thus taken alone are rendered uncriticizable by empirical tests.

Theoretical immunization. A theory that is contradicted by a true observation report e may be weakened just so that it no longer implies not e , or it may be weakened in this way but

also strengthened by the addition of a new auxiliary hypothesis so that e becomes a consequence of the altered theory. (Note that the theory cannot be made consistent with e simply by adding extra assumptions, something I examine below.)

Immunitization through change in problem. A theory may escape a specific criticism by a change in the problem supposedly being solved by the theory. We will see that Freud does this with his theory of dreams in order to deal with the counterevidence of anxiety dreams.

Methodological immunization. One's theories might be associated with a method which, either deliberately or unwittingly, excludes certain domains of potential falsifiers. For example, if a Freudian only considers evidence from the couch, then, providing he sticks doggedly to this method, lots of non-analytic evidence will be made impotent. He may be frightened to discover that he has been wrong for many years, or he may be simply ignorant of the relevance of such evidence.

Reinterpreting or denying the evidence. The evidence may simply be denied or reinterpreted.

Metaphysical immunization. One's theories may be attached to a metatheory that interprets them in a certain way. For example, one might combine catastrophe theory with the metatheory that all argument is illusory. (This hybrid is purely hypothetical.) If taken seriously and heeded, this would amount to an exclusion of all possible criticism of catastrophe theory since it would exclude all possible criticism of any theory.

I argue that Popper's demarcation criterion is useful methodological advice if our objective is to promote the growth of knowledge. The term "immunizing stratagem" helps us to designate those moves in theory development that flout the criterion. But as protection against criticism, "immunizing stratagems" have serious limitations, and certainly do not provide an easy and thorough logical means of ensuring the survival of an ideology. Many immunizing stratagems involve abandoning the ideology for whose protection they have been introduced, an unplanned, often unforeseeable, process that consists of numerous successive slight modifications extending sometimes over hundreds of years. Other immunizing stratagems seriously lower the survival value of the ideology through the acquisition, sometimes over a long period, of a burdensome and confusing "protective belt" of hypotheses, each of which acted at least in the short-run, to deflect criticism away from a privileged sector of assumptions.

Moreover, I see the use of immunizing stratagems not as a sign of an ideology in Bartley's sense, as a complete disregard of truth, but rather of a confused and incompetent attempt to take account of criticism. Those resorting to immunizing stratagems are rather like the American Officers in Vietnam who said that they had to destroy a village in order to save it. Thus I also disagree with Anthony Flew. Flew characterizes evasions of falsification as involving "surreptitious" and "arbitrary" manoeuvres. (page 48.) They also show "that your concern is with what you would like, rather than with how in truth things are." (Anthony Flew, [1975], page 54.) My argument is that the changes may not be designed, but may be the unintentional consequence of an attempt to deal with criticism and retain the theory. To the extent that the manoeuvres abandon the original doctrine in response to the specific falsification involved they cannot be wholly arbitrary. This comment reinforces my

point that falsification can act as a Darwinian-like filtering device on ideologies even if evasive (intentional or unintentional) moves occur. It may be that although each successive immunizing stratagem is intentional and introduced in the knowledge that the ideology is being altered in a slight respect, the whole sequence of immunizing stratagems and their accumulated effect is unplanned and unforeseeable. An analogy with the evolution of language might clarify my point. Even if every change in the language were a conscious innovation, the total effect of all the unintentional ramifications of these intentional changes cannot be foreseen. No one living in Medieval England, for example, could have predicted the shape of today's English language.

If ideologists are indifferent to truth then why do they employ immunising stratagems at all? There may well be cynical ideologists who have more dominant concerns than of truth, who are more interested in the perpetuation of their doctrine. But their audience is interested in truth. Perhaps the use of immunizing stratagems is an attempt to satisfy these conflicting interests. In any event, whatever the intentions of the propagandist his audience selects those elements that pass the filters of rationality that I discussed in chapter 1. The rationality of the propagandist's audience is part of the logic of his situation. Thus I see this chapter as reinforcing my general thesis that truth acts as a Darwinian-like filter device on ideologies.

Marxism and Freudianism are vast rambling structures, so I intend to focus on the Labour Theory of Value and Freud's theory of dreams. On the other hand, with the aid of the notion of the immunizing stratagem I aim to show that Marxism and Freudianism are less rambling than they appear. The immunizing stratagem helps us to link up the various

stages of evolution of these structures by relating the changing theories to the changing problem situation facing Freud and Marx, a sequence of problems itself partly created by the use of immunizing stratagems.

There seem to be two types of theoretical development that involve a reduction of information content: dishonest and unwitting. The term "immunizing stratagem" suggests a dishonest move. Popper is concerned to promote intellectual honesty, partly because this would go a long way to prevent content-decreasing evasions, but even from the point of view of the growth of knowledge a dishonest and an unwitting reduction of information content have the same effect. And since I am concerned with how the propagandist's audience selects elements from his message, a process independent of his intentions, there is no loss in generality if I speak of an immunizing move rather than stratagem. In most cases "immunizing stratagem" can be interpreted as immunizing move.

4.2. The Demarcation Problem

To appreciate the significance of my argument it is important to understand the demarcation problem and Popper's proposed solution.

Popper expressed his wish to characterise a heroic conception of science, a conception that captured the spirit and method of great scientists such as Galileo, Kepler, Newton, Einstein and Bohr. (Popper, [1974], Sections 5-8 of *Replies to my Critics*.) It must be understood that Popper's main concern in his philosophy of science is to account for and to promote the growth of knowledge. It is Popper's idea that such men made possible a tremendous growth of knowledge by championing bold ideas and subjecting them to severe attempts at refutation. Popper's criterion of demarcation is the outcome of a logical/methodological analysis of what has counted as bold ideas and severe criticism, and thus of what promoted the growth of knowledge.

Popper begins with a rough characterization of bold ideas: a theory is bold if it is a new, daring, hypothesis. It is daring if it takes a large risk in being false. Popper argues that this risk can be analysed ultimately in terms of the amount that the idea excludes, the degree to which it forbids states of affairs. Severe attempts at refutation are severe critical discussions and severe empirical tests.

Popper illustrates these ideas by examining the development of cosmology, from the heliocentric theories of Aristarchus and Copernicus to Einstein's general theory of relativity. Popper argues that this development illustrates not only the growth of knowledge but an improvement in method, in which theories become ever more daring and subject to severer

tests. It becomes apparent that riskiness and testability are linked: the greater the former the greater the latter.

Aristarchus and Copernicus conjectured that the sun sat at the centre of the universe, in opposition to the prevalent earth-centred view of their own times. The heliocentric theory was exceptionally bold because it clashed with both common sense and the *prima facie* evidence of the senses.²⁸ It went beyond the appearances to posit an unobserved reality; the appearances were explained in terms of this unfamiliar reality. This was bold in itself, for it broke with the Aristotelian idea that to explain something is to reduce it to the familiar.

However, Popper says, neither Aristarchus nor Copernicus were fully scientific because neither of them was bold enough to predict new observable appearances and thereby expose their theories to new empirical tests.²⁹ They explained the known appearances, but did not explicitly suggest the existence of unknown appearances, appearances that might decide between the heliocentric and earth-centred views. If they had made such predictions their theories would have been much more informative, and therefore have taken a larger risk of being false, but they would also have promoted the growth of knowledge.

Kepler comes closer to Popper's idea of good science. Kepler had a bold theory of the world, but he also made detailed predictions of new appearances. Not only that, he abandoned many of his ideas in the light of the observations furnished him by Tycho Brahe. In accordance with a promise he had made Tycho, Kepler tried to fit Tycho's model of the solar system to these observations. Tycho accepted neither Copernicus's nor Ptolemy's model, but like all other astronomers Tycho took for granted their Aristotelian/Platonic assumption that orbits must be

circular. Nevertheless, he subjected this idea to empirical testing. Kepler made seventy different trials to fit the model to the data and failed. He then took the bold step of proposing that the orbits of the planets were elliptical. The data fell snugly into place.

Kepler's three laws, though good approximations to the truth, have been refuted. But, Popper says, though false, Kepler's theory is regarded as scientific. Newton's theory is also regarded as false but scientific. Hence it is not truth which decides whether a theory is scientific. Why should this be? Each theory, though false, represented an attempt to increase knowledge, and did so because even though each was false, it had greater truth content than its predecessor and exposed itself to more tests. Popper's answer, then, is that it is a theory's openness to empirical refutation that makes it scientific. But more generally, it is whether the theory is an attempt to expand our knowledge, whether it represents an increase of information on the theory it replaces.

We may infer from this that Marxism or Freudianism would not be counted as unscientific simply because they have been refuted, but because of the way Marxists and Freudians have dealt with refutations. What is most important for the demarcation criterion is a critical attitude and the proposal of increasingly falsifiable theories in response to refutations. Kepler's elliptical orbit hypothesis represented just this sort of increase of information content in response to empirical refutation. 30

What impressed Popper most about the theory of relativity were the following characteristics:

(1) Like Kepler's and Newton's theories, Einstein's theory was very bold, differing fundamentally from Newton's outlook.

(2) Einstein derived from the theory three predictions of vastly different observable effects, two of which were radically new, all of which contradicted Newton's theory.³¹

(3) Einstein explicitly declared in advance of the experimental tests of his theory, that they were crucial: if the results did not precisely match his predictions, he would abandon them as false.

(4) Einstein regarded his theory as simply a better approximation to the truth. For a number of reasons he was convinced that it was false. He specified a number of characteristics that a true theory would have to satisfy. (Popper argued that Einstein's attitude to his theory clearly showed that belief in the truth of a theory was unnecessary to working on it as a promising candidate. It is worth noting, though, that Einstein believed that the theory was closer to the truth than its rivals; so it could not warrant the inference that belief is irrelevant to explaining why Einstein worked on the theory.)

Popper's proposal was that science was distinguished from non-science by two things:

(1) The boldness of predicting as yet unobserved phenomena; especially phenomena which will pit the theory against its competitors and allow us to decide between them. Einstein was acutely aware of the need to compare his theory with its competitors.

(2) The boldness of looking for tests and refuting instances. (I would also add: the boldness of accepting refuting instances, which is not implied by the boldness of looking for them.)

We may generalise the methodological conclusions of Popper's investigation as follows:

1. Propound empirically testable theories; 2. Aim to refute them; 3. Given any theory T, aim to replace it by another theory T' which is more general and precise (i.e., has higher information content.³²), one that explains the success of T, explains the refuting evidence of T and is moreover independently testable.

In his early writings, [1934], Popper would have phrased 1. as "propound only empirically testable theories". We will see that Popper later put much more emphasis on the importance of non-empirical theories, while retaining empirical content as the ultimate goal of theory development.

These are purely methodological rules. But there is also an historical thesis connected with it. It is Popper's conjecture that these ideals are responsible for some of the greatest leaps of man's scientific knowledge. Many commentators have confused Popper's methodological/normative analysis with his historical hypothesis. Kuhn is perhaps mostly responsible for this confusion, and others (for example, Boudon) have been lead astray by relying on secondary sources. Chalmers also makes this mistake. ³³

It is worth emphasising that there are two aspects to the demarcation criterion: one of attitude and one of pure logic. Firstly, the scientist must try to find falsifying instances to his theories. This is a matter of the correct attitude; the critical attitude. Secondly, the scientist must have at his disposal refutable theories. The possibility then arises of a scientist earnestly following the first injunction without realizing that the theory he is dealing with is empirically irrefutable. Equally, a body of theory may be logically capable of refutation, though its

adherents have refused or neglected to look for refuting instances.

Since Popper is interested in the growth of knowledge he is most concerned to discourage the use of immunizing stratagems that flout the demarcation criterion, effectively reducing the information content of our theories. (the term "information content" will be defined later.) Kepler, for instance, could have described the planets that did not fit his master's model as not really planets. After all, he might have said, planets do not behave like that: a planet is essentially an object with a circular orbit. This would have been an example of what Popper calls an immunizing stratagem.³⁴ Such a manoeuvre, Popper would say, saves the theory but at the price of a reduction in information content. As we have seen Kepler's actual response greatly increased the informative content of astronomy, and is rightly admired for that.

Not all evasive moves are on the wrong side of the demarcation criterion. Some auxiliary hypotheses introduced to deflect a refutation from a valuable assumption have added greatly to our knowledge. One such auxiliary hypothesis was the prediction by Adams and Leverier of the existence of the planet Neptune. It had been observed that the orbit of the planet Uranus was not in accord with Newton's core theory (the laws of motion and the law of gravity) plus the then known initial conditions (ie assumptions about the gravitational influence of other planetary bodies). Newton's theory could have been regarded as falsified by this anomaly. However, Adams and Leverier proposed the existence of a previously unknown planet to account for the failure of the predictions, thus saving Newton's theory. But this particular evasion brought increased information content to the Newtonian system as was clear from the fact that the hypothesis was empirically

testable by independent means (i.e., not simply by checking whether the hypothesis agreed with the already observed perturbations of Uranus).

My point, contrary to Popper, is that "immunizing stratagems" are auxiliary hypotheses that are on the wrong side of the demarcation criterion and precisely those that while saving the original theory from refutation effectively abandon it, replacing it with another theory. In our hypothetical example, Kepler's redefinition of planets as essentially circular in orbit would introduce a radically new theory and jettison the original claim. I will expand on this point in a later section, after we have seen how Popper deals with the problem presented by metaphysical theories to his demarcation criterion.

4.2.1. Problems with the Demarcation Criterion and the Criticizability of Metaphysical Theories

Popper was from the beginning aware of several problems with his demarcation proposal, whose solution is very pertinent to the idea that ideologies such as Marxism and Freudianism are safe from empirical criticism. I argue that Marxism and Freudianism do not save themselves from empirical criticism by assuming metaphysical form, and that even in the absence of empirical criticism there is potential criticism from other metaphysical theories.

Popper realized as early as 1934, the year of the first edition of the Logic of Scientific Discovery, that a metaphysical idea can inspire the creation of an empirically testable theory. In that book he gave a number of examples, such as atomism (which inspired John Dalton's atomic theory which explained the regular proportions in which elements combine); the corpuscular theory of light (which inspired Planck's photon theory); and the theory of terrestrial

motion. (Popper, [1934], page 278.) However, Popper notes that he was not fully alive to the fact that metaphysical ideas are rationally arguable and in spite of being empirically irrefutable, criticizable. (cf. Ibid. page 206. footnote 2.) The boundary between science and non science is a vague one. More importantly for methodology, we may infer that a theory should not be discarded simply because it is metaphysical, for it may well inspire the formulation of a theory with more empirical content, one that can clash directly with experimental results. Many brilliant theories must begin their lives as half-baked, rough and ready formulations that flout the demarcation criterion. I infer from this that if the demarcation criterion were understood as a proscription on entertaining such ideas they would not have time to develop. I am unsure as to whether Popper would agree, but I suspect that the demarcation criterion is better understood as an ideal to strive for, simply because satisfying it brings more knowledge within our grasp.³⁵

In 1957 Popper became very interested in the fact that Metaphysical theories could be not only inspiring, but also arguable and open to criticism. He argued that doctrines such as determinism that do not admit of empirical refutation are nevertheless open to criticism as to their effectiveness at solving the problem for which they were proposed. (Popper, [1958])

In the light of this discussion I would like to suggest that the three methodological rules discussed in the previous section may be simplified by eliminating (1). Rule (3) takes into account the injunction to move from metaphysical speculations to empirically testable theories, as well as the injunction to move from less to more informative metaphysical theories.

If it is accepted that what is important is the move from less to more informative theories, then interesting conclusions follow. For example, even if Marxism has been made into untestable metaphysics, it could be made testable again. Equally, Freudianism could be made testable. A Marxist or Freudian could be shown how their theories could be interpreted empirically and promptly refuted. This need not be as arbitrary as it seems. Even lovers of metaphysics are constrained in their speculations by a whole network of what they regard as background knowledge (which may consist of both empirical and metaphysical theories) and their problem situation.

Popper also realized that there is a rational function to resistance to criticism; one can be too sensitive to criticism. Clearly, if refutation is avoided at all cost, then one gives up science. But on the other hand, if a theory is abandoned too easily in the face of apparent refutation, then the theory has no opportunity to show its strengths, which may only become apparent later in the course of debate. Popper concludes that there is room in science for dogmatism, by which he means sticking to a theory even against very strong arguments. Moreover, it may require considerable debate to discover that what at first seemed purely metaphysical is actually empirical. The actual information and logical content of a theory is not only a conjectural matter, but is mostly unfathomable, a point I touched on in chapter 2 and will take up later. The late physicist, Feynman, made a similar point when he stressed how difficult it is sometimes to work out how a new physical theory might be tested in the laboratory because it is often not even clear what, if any, empirical implications it has. Another example is Planck's reinterpretation of Kaufman's experiment of 1905, the result of which at the time was taken by everyone as bearing unfavourably on the Lorentz/Einstein theory and favourably on Abraham's

classical theory of how an electron should behave in an electromagnetic field. Planck discovered that the failed Lorentz/Einstein prediction was no longer derivable from the theory if one were to reject an auxiliary assumption that both theories shared. We may draw the inference that the apparently "irrational" stubbornness of some ideologues may in some cases be scientifically rational. The refutation of a complex theory is not an obvious and mechanical procedure. Certainly, stubbornness per se is not irrational.

4.2.2. Empirical versus Metaphysical Criticism

But more to the point, it does look as though the ideologies most infamous for their apparent obstinacy in the face of criticism, take on a metaphysical form. Marx held that for all economies based on wage labour and a market in factors of production (i.e. capitalism) there is a tendency for monopolization of factors to increase and for an expansion and integration of workers' organisation. When monopolization had created one supreme world employer, the workers would take over its administration and institute communism. Apparently, Marx thought the revolution was imminent, certainly within his lifetime. The Marxist, however, can always say, it is often said, that communism will arrive eventually: the tendencies to monopolization, he might protest, have been temporarily countered by opposing tendencies. Other utopian systems can escape direct refutation by making their prophecies apply to some eventual future rather than by putting a definite date on the coming of the new era. Can they be criticised in that form without first interpreting them empirically?

To clarify the logic of the sorts of systems we are talking about and the possible empirical criticism to which they could be put, let us take an example from chemistry. A

classic metaphysical sentence is: gold has an acidic solvent. This is an irrefutable statement, for however far and wide one looks for such an acid without finding it, it is always possible to say that it exists at some other time or place. So is experience, our strongest critic, irrelevant to this type of statement? Professor John Watkins has pointed out that experience can be brought in as a critic here indirectly via a well tested scientific theory which is directly testable. (Watkins, [1958].) The metaphysical sentence in question is in fact incompatible with the well tested theory that gold has no acidic solvent.

But is such an analysis relevant to the Marxist's attempt to evade criticism? Yes, for like the spatio-temporally unrestricted singular statement about gold, the Marxist's apology is also a spatio-temporally unrestricted singular statement. Both would require a systematic search of the whole of space and time for a direct empirical refutation (or confirmation), which is obviously impossible. (Of course, the Marxist's assertion covers only future time, though it might be made to cover the past if he were desperate enough.)

A Marxist is unlikely to adopt such an unrestricted prediction, at least not at the time of writing. Such a position might emerge after innumerable attempts to evade criticism, perhaps taking 50 to 100 years to evolve. By that stage the moral of the apologist may well have sunk to an unrecoverable low. But even if a Marxist did resort to this desperate manoeuvre, he would still be open to an indirect empirical refutation. Ludwig Von Mises argued that without a price system, which communism would eliminate, there is no even equally adequate way to allocate resources. ("The Impossibility of Economic Calculation in the Socialist Commonwealth". [1930].) Against the desperate hope in the

possibility of communism Mises pitted economic theory, a theory which makes many detailed empirical predictions.

One might argue that economics does not make predictions of the same empirical precision as does chemistry. One might even argue that economics is not empirical at all, but a very suggestive and true metaphysical theory. The analogy with chemistry would then be weakened. But we can certainly say that economics has greater informative content than the Marxist's unrestricted singular prediction, and may still undermine the Marxist's case.

It is easy to assume that empirical observation is the strongest critic. The implication would be that if a network of ideas succeeds in shielding itself from empirical counter-evidence, it will have evaded, if not all sorts of criticism, at least the most damaging both psychologically and logically. This may not be true. An interesting possibility is that perhaps opposing metaphysical theories are sometimes of greater weight than empirical observations. Watkins has shown how metaphysical theories serve to filter out some possible theories before they even enter the body of science; these theories do not even get discussed because they conflict with the prevalent metaphysical background assumptions.

Watkins' discussion of the influential role of metaphysical doctrines ('haunted universe doctrines') is highly suggestive in this context:

...what informs and integrates the heterogeneous ideas of Augustine, or Bossuet, or Condorcet, or Burke, or Comte, or Marx is in each case a distinctive view of history which both shapes each of their interpretations of historical facts and suggests a certain kind of moral and political outlook...the moral-political suggestiveness of haunted universe doctrines indicates that large clashes of belief in the moral-political sphere

need not have their origin in disagreement over moral principles or over observable facts. They may be generated, partly or wholly, by conflicting metaphysical interpretations of the world. (Ibid. p. 360.)

There are other methods of criticism that can be applied to metaphysical theories. Galileo suggests a charming way to criticise doctrines that fail to exclude rivals by empirical test. Galileo was able to report that his telescope showed that the Moon was not a perfectly smooth sphere as the Aristotelians expected, but was instead marked by craters and mountains. One of Galileo's adversaries tried to defend the Aristotelian doctrine by suggesting that an invisible substance filled up the craters and covered the mountains so that the Moon was actually spherical. When Galileo asked him how the substance was detectable, he said it was undetectable. Galileo responded by saying that he was quite prepared to accept the hypothesis of the invisible substance, but insisted that it was in fact piled up high on the mountains of the Moon in such a way that the Moon was even more uneven than the telescope could reveal. Galileo's rejoinder allows one to see the inadequacy of the immunizing move, of making empirical testing irrelevant. The same type of rebuttal can be applied to conspiratorial theories that have assumed an empirically untestable form. For example, suppose some cynic asserts that all the set-backs in the workers' movement are instigated by undetectable groups of capitalists operating behind the scenes. One could counter this by saying that the set-backs are real and there are conspiratorial capitalist groups working against the workers' movement. However, their efforts are always unsuccessful, because they are always thwarted by undetectable renegade workers' groups who are the actual cause of the set-backs in the workers' movement. If the conspiratorial theory is successful on account of its lack of empirical testability, then the propagandist is prompted

by the logic of his situation to try to counter the rival conspiratorial theory. But he can do this only by augmenting his theory with testable content.

We may conclude that even if an ideology assumes the form of a metaphysical doctrine it may yet be criticised, not only by unproblematically empirical theories, but also by scientifically acceptable metaphysical assumptions. The Marxist's retreat to unrestricted prediction, does not save his position from criticism, but only creates other grounds for criticism.

4.3. Damaging versus eliminating a network of ideas.

In correspondence the late W.W.Bartley III, partly conceding my point, argues that:

in a strict sense, the introduction of an immunizing stratagem may be tantamount to abandoning the position; but in practice it is more likely to be tantamount to damaging the position. (Feb 13th, 1988.)

Dr Shearmur (Senior Research Fellow of the Institute for Humane Studies) has made a similar criticism of my thesis. I think this is true, but misleading. Drastic revisions of a theory through the use of an immunizing stratagem are rare, for they are too obvious and unconvincing. The revisions are more often of a marginal nature.

Bartley's and Shearmur's disagreement with me rests on an unexamined assumption of theirs that there is a difference between modifying a network of ideas and making a new set of ideas, a form of essentialism that is false. One might say that a network of ideas may evolve yet survive, in the sense that the fundamentals are retained. My immediate response

to this would be to ask how fundamentals of a network of ideas would be defined other than as: those elements of a modified network of ideas that are retained? Definitions are rarely important, but asking for a definition here could be revealing.

Even if we accept for the purposes of argument that to damage a position is not to eliminate it, the distinction breaks down when we look at the history of ideas.

Metaphorically speaking, a sufficient number of injuries to a theory is equivalent to its death. Each intentional or unintentional concession made by an ideologue may be individually insignificant; but a sufficient number of insignificant differences makes a significant difference. As was pointed out in chapter 1 when discussing Hattiangadi's comments on conformity, numerous, successive, slight modifications may lead from orthodoxy to radically different interpretations - to heresy. This is clear when we look at networks of ideas over the centuries, over periods of time in which the accumulation of injuries due to criticism has become conspicuously fatal. Take an example from religion. The Jehovah's Witnesses, for example, interpret each of the seven days of creation as being 7,000 years long. Moreover, the creation is interpreted as referring only to the creation of the Earth. The original Genesis account of creation has been abandoned. I am not sure whether this current position was arrived at by a great number of marginal revisions, but one can easily imagine such a process.

This example prompted me to the thought that in analysing the evolution of a network of ideas we ought to distinguish the following:

- (1) The uninterpreted terminology of the doctrine as embodied in books etc;
- (2) The interpretation placed on the terminology;
- (3) The interpreter's theory about how his interpretation compares with previous interpretations (his own and others').

(If we wish to include ceremony etc, we can substitute "symbolism" for "terminology". The notion of an uninterpreted term is purely conceptual; in nature perhaps everything attended too gets some kind of interpretation.)

It is important to recognise that (1) and (3) may remain constant while (2) changes quite dramatically. For example, in the simple case discussed, the words "all swans are white." are retained, but the interpretation placed on them is altered considerably. We can also imagine that the person who proposed the claim about swans thinks that his later interpretation of his statement is exactly the same as his earlier interpretation - when challenged he might retort: I thought that all along.

The fact that old symbolism is kept for new ideas is partly responsible for the overestimation of the stubbornness of ideologies. For example, the present day British Liberal party shares very little of the original Liberal party's doctrine. These distinctions are particularly important in assessing the relevance of Lakatos's notion of a hard core versus protective belt in a theoretical system to ideological survival in the face of criticism.

4.3.1. Do all Immunizing Stratagems Abandon the Theory for whose Protection they were Introduced?

It is not my aim to show that criticism cannot be deflected in any way by logical means. My aim is to show that many so called immunizing stratagems actually abandon the theory they were introduced to save, while many others often lower the chances that the theory in question will be reproduced and successfully compete with other theories. But to take account of Bartley's and Shearmur's criticism I need to distinguish more precisely between a privileged subset T of a set of assumptions, and a useful but dispensable subset A. The more subtle claim then is that by tinkering with the subset of dispensable assumptions A, any T may be preserved in the face of any counterevidence.

Suppose T & A yields as a consequence the implication e, but the accepted counterargument implies -e. If the response of an ideology to criticism is to modify its assumptions then it may replace A by A' in one of three ways:

- (1) T & A' I- -e, where A' = -e. .
- (2) T & A' I- -e, where -e is not derivable from either T or A' alone.
- (3) Such that neither T & A' I- -e, nor T & A' I- e.

If (1) then information content will be lowered and each successive theory will become increasingly a burdensome hotchpotch of unrelated hypotheses, sacrificing by incremental steps the preference for systematic organisation. The system also becomes more difficult to learn and pass on. Moreover, there is no proof that a replacement A' that is consistent with T can always be found (T and -e may be inconsistent).

If (2) then T is retained and also used systematically in the derivation of -e. There may even be an increase of information content. But this latter would make T & A' even more open to criticism. Again, there is no general proof that for any counterevidence -e against any theory T & A there is always a suitable A' that in conjunction with T will yield -e.

If (3) then there is clearly a loss of information content. Weakening A so that T & A' no longer implies e may also necessitate a loss of other implications that were important in solving problems for which T & A was initially adopted.

As I have indicated, not all immunizing stratagems involve modification to the information content of a theory's assumptions. Some that at first do not seem to fall into this class can be interpreted this way, but not all. It would be helpful if I made a list of the types of immunizing stratagems and then examine which one's involve the abandonment of the original theory, and which impair the theory's chances of spreading.

- (1) Denying the refuting evidence, e.
- (2) Reinterpreting the theory as a definition or the implication of a definition.
- (3) Adding other assumptions to T in the presence of which the resulting theory is consistent with or implies e.
- (4) Subtracting assumptions from T such that the remaining set of assumptions is consistent with or implies e.
- (5) Reinterpreting the theory as essentialistic.
- (6) Introducing the idea that the theory is beyond the capacity of human reason to criticize or test. (e.g., God moves in mysterious ways.)
- (7) Introducing ad hoc exclusion clauses to T for special cases.

(8) Reorganising the conceptual structure of the theory.

(1) An example of the denial of evidence is Marx's attitude to the price of goods offered for sale that are not mass produced commodities, such as honour, conscience or unworked land etc. In these cases, Marx asserts, the prices are imaginary, like certain quantities in mathematics. (Marx, [1867], Vol.I, page 105.) In saying this Marx expresses his confusion. It may look as if he is saving the labour theory of value but he is substituting another theory instead, one that may well be implied by the original theory but certainly one of much lower information content.

Suppose the refuting evidence, *e*, is denied under all circumstances. For example, in the swan case, the person who advanced the theory that all swans are white may simply deny that any black swan presented to him is black.

Prima facie, this does not look like a case in which the original theory is abandoned. But let us look more closely. At least some of the information content of an empirical statement is logically equivalent to the class of basic statements with which (perhaps in the presence of other assumptions) it is inconsistent. In other words, the basic statement that constitutes *e* would be part of the meaning of *T*. Now if no basic statement is treated as inconsistent with a purported empirical statement, then we may infer that it is, after all, non empirical. As a corollary, it follows that the original claim was either wrongly presented as empirical, or was empirical and was later abandoned for another theory with the same terminology. In either case, the original claim has been abandoned.

(2) Reinterpreting a theory is in some cases abandoning the earlier theory; in some cases it is simply changing the conceptual structure without changing the theory. We will

see in the case of Marx's Labour Theory of Value how the crucial term "socially necessary labour time" is reinterpreted several times, the total amounting to an abandonment of both the original theory and the original problem.

The assumption that one can modify a theory without abandoning it does have some truth to it. One can completely reorganise the conceptual structure of a theory without changing its empirical content. Popper himself has been keen to make this distinction between a theory and the concepts in which it is expressed. (Popper, [1982], Quantum Theory and the Schism in Physics, page 42.) The same theory may be formulated in many different ways and may use different conceptual schemes.

Changes in the conceptual system employed by a theory may function as protection against criticism, since it may disarm the critic - it may appear to the critic that the theory has been abandoned under the pressure of his criticism, whereas in fact the old theory is retained under the (intended or unintended) camouflage of the new concepts. However, such an effect has costs for the ideology's survival value that may be overlooked: (a) the ideology has to be relearned - a transmission cost; (b) to the extent that the change of concepts is unintentional there is a loss of understanding of the theory. After all, if the ideologue believes that the conceptually transformed theory really is a different theory he cannot have a good grasp of the theory.

Can a propagandist guarantee that by introducing ad hoc purely abbreviative definitions to evade criticism that the system will not incur new unpredictable commitments that are themselves open to criticism? One might think that a purely abbreviative definition adopted as camouflage would be

neutral, but as Popper argues, some abbreviative definitions are creative in the sense that they alter what can be derived from the theory. (Popper, [1982b], page 170.) A definition is creative if there are theorems not containing the defined term that cannot be derived without the help of the definition of the term. There is no routine way of telling whether a definition is creative or not, so even seemingly trivial evasive redefinitions may have unwanted but unforeseeable repercussions in the rest of the system, perhaps creating other more serious avenues for criticism.

(3) Adding assumptions. One might at first think that there are two main ways in which a theory T may be immunized through changes in the assumptions of the theory: (i) a move from T to T' (where T' is the conjunction of T and one or more auxiliary assumptions, denoted by B); (ii) a move from T to X (where X is T minus some of its assumptions, perhaps with replacements). Only (ii) represents the abandonment of assumptions of T , and its replacement by another theory. One might argue that (i) preserves the original theory within the substitute, and therefore immunization can preserve an ideology. Thus Lakatos says:

For instance, we may have a conjecture, have it refuted and then rescued by an auxiliary hypothesis which is not ad hoc in the senses which we have earlier discussed. It may predict novel facts some of which may even be corroborated. (Lakatos, [1970], page 175.)

But (i) is not a logically possible immunization. The modified theory cannot be consistent with the falsifying evidence if one simply adds extra assumptions that increase information content. For suppose theory T is false with respect to evidence e ; then, since a conjunction is false if and only if one of its conjuncts is false, any conjunction consisting of T and an extra assumption B will also be false with respect to e .

This general point can be applied to Boudon's treatment [1986]. Boudon's analysis suffers from a lack of logical sensitivity, which grossly misleads him. His failure to distinguish between different components of a theory allows him to infer that a refuted theory can be consistently retained by adding extra assumptions:

Suppose that a physicist of Newton's time discovers that a planet is deviating from the orbit assigned to it by theory T. T could nevertheless be kept thanks to an adventitious hypothesis. (Ibid. page 161.)

and because of exit costs of leaving T for T' (an alternative theory) and entry costs (learning a new language etc.) of adopting T',

people will try to keep T going by trying to reduce the inconsistencies between T and the facts of the real world by means of adventitious hypotheses. (Boudon, [1986], page 162.)

This argument amounts to a simplification of Lakatos's argument, discussed below. As we will see, Lakatos makes a careful distinction between different components of the theory at issue.

To make this point clearer consider the case of Leverier and Adams. They did not reject Newton's laws of motion and gravity. Newton's theory, consisting of the laws of motion and of gravity conjoined with auxiliary assumptions regarding the number, mass, position and acceleration of the planets and the Sun, was inconsistent with the observation reports of the motion of Uranus. Leverier and Adams introduced another assumption: the existence of the planet Neptune, with a certain mass, position and acceleration. Now if an ideology adopted this tactic it would be adding to knowledge and sustaining itself. But it must be born in

mind that the augmented theory is now more open to criticism, so is hardly being guaranteed from it.

But the above is not accurate enough. What Adams and Leverier did was to deny one of the auxiliary assumptions of Newton's theory: that there were no other planets in the solar system but Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus. Therefore, the modified theory of Adams and Leverier actually contradicted Newton's theory (though not the laws of motion and gravity alone). If any ideologist did this he would be abandoning his ideology.

(4) Subtracting assumptions that reduce the information content of an ideology effectively means that the original theory is abandoned. Though subtracting disjuncts may increase information content, for a statement p is logically stronger than p or q . We will see below that Lakatos effectively replaces a conjunction of premises in Newton's theory by their disjunction and thereby empties the theory of much content.

(5) Reinterpreting the theory as essentialistic. As we will see in the case of Kepler, if he had tried to sustain his masters' position on the circularity of planetary orbits by asserting that the orbits of planets are essentially circular, he would have replaced a hypothesis with much content with one of possibly zero content. But not all essentialistic hypotheses are completely devoid of content. Hume says of the paraptetics that when they were asked for the cause of a phenomenon, they would resort to faculties or occult qualities. They would say that bread nourishes by virtue of its nutritive faculty and senna purged by virtue of its purgative powers. (Hume, [1779], page 73.) Hume took these hypotheses as devoid of content, but in fact they could be interpreted so that they rule out some possibilities, such as the class of causes which lie outside

the bread or senna. But as with the swan hypothesis, in making the interpretation, one would have to check it against the proposers' background knowledge and problem situation. However, if the theory is empirical in Popper's sense, then replacing it with an essentialistic theory will abandon much content. I argued in chapter 1 that man prefers to adopt ideas of higher information content. Essential explanations often imply an ultimate explanation. Essentialist immunizations run the risk of offending the desire for more information because they rule out further generalisations, explanations of greater depth. It may then lose in a competitive struggle with other ideas that address the same problems.

(6) This sort of tactic is very interesting. Neither Marx nor Freud resorted to it as it would have been completely anathema to their enlightenment inclinations, but it is a common practice in religious circles. It is an example of what W W Bartley would call a retreat to commitment. But its strength can easily be exaggerated. To function properly it must be kept under control, for it may backfire. For example, a sceptic may retort: if God moves in mysterious ways, how do you know that it is God and not the Devil that speaks to you on any given occasion? God's command to Abraham that he sacrifice his son Isaac was, I suppose, a mysterious way of acting. But when Abraham obeyed God's command he did not first try to establish the identity of the voice that spoke to him. But why not? It could have been the devil, as far as he knew - if, as you say, God moves in mysterious ways. So there is a counterargument. But the original theory - that God exists - looks as though it has been retained: has it? Well, at first we have the confident assertion that a unique being answering to a definite description exists (ie all powerful, completely benign, .) Whatever else may be true of this being, it does follow necessarily that if he did exist there could be no

evil for he would not suffer evil to exist. But in the face of counter-evidence this implication is denied. In so far as it is denied we have a different theory before us. The doctrine that there is a completely unfathomable mysterious something seems to be almost no doctrine at all.

(7) The introduction of ad hoc exclusion Clauses is also a case of abandoning the original claim. For example, suppose someone advances the theory that bread nourishes, but then notices that a certain batch of bread kills some people. If he then says bread nourishes, except that particular batch which killed those people, then he has reduced the content of his claim and therefore abandoned the original theory. As more counterinstances are dealt with in this way the theory becomes increasingly a hotch potch of unrelated hypotheses, losing its systematic character. It not only becomes clumsy in application but more difficult to learn and pass on.

(8) The propagandist may alternate between two or more theories. This is an interesting case in which the original theory is not completely abandoned. It is quite possible that two interpretations of the text are maintained, each being brought to the fore when powerful criticism makes it difficult to assert the other. Frank Cioffi has noted this phenomenon in connection with Freudianism:

It is characteristic of a pseudo-science that the hypotheses which comprise it stand in an asymmetrical relation to the expectations they generate, being permitted to guide them and be vindicated by their fulfilment but not to be discredited by their disappointment. One way in which it achieves this is by contriving to have these hypotheses understood in a narrow and determinant sense before the event but a broader and hazier one after it on those occasions on which they are not borne out. Such hypotheses thus live a double life - a subdued and restrained one in the vicinity of counter-observations and another less inhibited and more exuberant one when remote from them. (Cioffi, [1970], page 474.)

The bold version is still prized for its richness of information content and so is brought forward in certain circumstances.

How does this phenomenon fit in to the evolution of an ideology? We may conjecture that this is a typical stage in the response of an ideology to powerful criticism. First we have the pristine doctrine promulgated faithfully with great confidence. Then, in response to criticism, we have the original doctrine supplemented by the immunized version, brought forward in appropriate circumstances. Most commentators have overlooked the increased burden of the excess theoretical baggage that this alternation involves: new converts have to learn not only the original theory (usually quite cumbersome in itself) but also the adapted one. The likely consequences are (a) increased errors of transmission and (b) simple confusion, neither of which contribute to the morale of the movement and may impair the propagation of the ideology.

It is my guess that this stage tends to be followed by one in which the original doctrine is completely supplanted by the adapted version. Thus we have:

- (1) Original doctrine;
- (2) Original doctrine plus adapted doctrine;
- (3) Adapted doctrine.

In many cases the ideology may reach stage two in the course of a single book. This seems to have happened with Freud's theory of dreams and with Marx's Labour Theory of Value.

To further explore Bartley's suggestion that the use of immunizing stratagems may only amount to a modification and not an abandonment of the theory being "protected", I must also examine Lakatos's distinction between a hard-core and protective belt and Duhem's problem, since both of these seem at first sight to show that by tinkering with a system of hypotheses, refutation may be avoided and therefore a privileged sector of an ideology may be retained regardless of the facts. These ideas make more precise the suggestion that the "essentials" of a system might be guaranteed from criticism and perpetuated even though the system evolves in response to criticism.

I intend to argue that all I need to sustain my thesis that no system of ideas can be guaranteed from criticism is no more than Bartley and Shearmur concede: that the immunizing stratagem may simply "damage the position".

4.3.2. Hard core versus Protective belt

Lakatos makes the distinction between the hard-core of a theory, which is preserved in the face of unfavourable evidence, and a protective belt of hypotheses which may be changed to accommodate any unfavourable evidence. Lakatos argues therefore that no core scientific theory forbids any observable state of affairs. If this were true an ideology could in principle adopt this kind of stratagem to deflect criticism from a privileged portion of its structure. I argue that not only is this not always logically possible, but even if it were it assumes superhuman powers of memory and reasoning. First, most commentators have been too quick to assume that finding a suitable change in the protective belt is easy: creating such a protection may require more time, effort and genius than creating an alternative core theory. Second, any attempt to guarantee that the changed protective belt will not adversely affect the hard-core is

doomed to failure: the line drawn between hard-core and protective belt is a conjecture, and one cannot always rule out the possibility that some remote logical consequence of the change to the protective belt will not be in conflict with the core theory. The same points apply also to Duhem's argument.

We can explain Lakatos' distinction between the hard core and the protective belt with the help of a story about an imaginary series of problems in Newton's research programme. (Lakatos, [1979], pages 100-101.) A Newtonian using Newton's mechanics, law of gravitation plus generally accepted initial conditions, calculates the trajectory of a newly discovered planet. However, the planet deviates from the calculated trajectory. The question then is does our Newtonian place the blame on Newton's theory? No, he attributes the failure in prediction to his statement of the initial conditions: there is an as yet unobserved planet p' which perturbs the trajectory of p . The Newtonian calculates the mass, orbit etc of this planet p' and asks an astronomer to try and detect it. The astronomer fails to observe it, but undeterred the Newtonian sustains his allegiance to Newton's theory and conjectures that the planet p' is too small to be observed even with the most powerful of current telescopes, and applies for a research grant to build a more powerful telescope. In three years the new telescope is built and is trained upon the sky. The planet p' remains undiscovered. Yet, our Newtonian persists to deflect criticism from Newton's theory, suggesting that a cloud of dust hides the planet from us. He calculates the properties of the cloud and a satellite is sent up to detect it. By now the reader will be able to continue the story for himself for a while without much trouble. Lakatos' point is that with resolution and enough ingenuity, the Newtonian can select a part of his set of accepted

statements as a privileged sector to be made safe from criticism by appropriate changes in other beliefs.

Lakatos supplies historical illustrations of research programmes whose protective belts have gotten into trouble, but then saved not by revising the initial conditions, as in the above example, but by very fruitful advances in either fundamental theory (Soddy's contribution to Prout's programme) or mathematical technique (Pauli's contribution to Bohr's old quantum theory). A modern version of Lakatos's story might focus on the hunt for the so-called dark matter, matter whose existence is postulated on the assumption that the universe is expanding despite gravitational attraction, but at a rate too slow given the relatively small amount of observable matter in the universe. This search has had a number of disappointments, but the researchers continued to search for a suitable particle, the most hopeful being the neutrino. However at first neutrinos could not even be detected, and when they were it was thought they were not heavy enough. Within the last year, however, several researchers have replicated the detection of heavy neutrinos.

Lakatos drew the conclusion that in fact no scientific theory can be refuted because the theorist can always introduce auxiliary hypotheses to deflect criticism from the theory:

exactly the most admired scientific theories simply fail to forbid any observable state of affairs. (Ibid, page 100.)

However, Popper has undermined this contention. Lakatos promises to back his "characteristic story" up with a general argument, but this general argument can only succeed if the most admired theories are denuded of part of their fundamental content. In assessing Lakatos's argument,

Popper says, it is important to be clear that his thesis does not depend on arguing from defective observations:

...even if there were a firmly established empirical basis to serve as a launching pad for the arrow of the modus tollens: the prime target remains hopelessly elusive. (Ibid. p. 100.)

Lakatos feels that he can generalize from the "characteristic story" to the most respected theories, such as Newton's. But, Popper argues, this would require the assumption that any deviations of a planetary orbit from its predicted path can be accounted for by Newton's theory by postulating the influence of some other planet (more generally, massive body). However, as Popper points out, there are an infinite number of planetary orbits which cannot be accounted for in this manner. (To be precise, there is an infinite set of measure 1 such orbits.) For example, Newtonian gravitational theory cannot explain a square or a triangular orbit, no matter what is assumed about the mass, position etc of other planets. Lakatos's story, Popper concludes, cannot therefore be characteristic, but is in fact quite exceptional.

Lakatos asserts that

some theories forbid an event occurring in some specified finite spatio-temporal region (or briefly, a "singular event") only on the condition that no other factor...has any influence on it. (Ibid. page 101.)

Putnam argued the same point in Popper ([1974], page 221). Lakatos draws from this the conclusion that such theories never alone contradict a basic statement, but at minimum (he says maximum, but the meaning is clear) the conjunction of a basic statement with a universal non-existence statement saying that no other factor is at work. What Lakatos overlooks is that his result is obtained at the price of

emptying Newtonian theory of important content. Popper argues that Newton's theory of gravitation amounts to the thesis that all bodies in interplanetary space not only move according to Newtonian dynamics, but their movements can be explained by an appeal to gravitational forces alone. (Popper, [1974], page 1008.) If this is true, then Newton's theory does not allow the possibility that other factors may be at work, as Lakatos's *ceteris paribus* clause suggests, but actually denies their operation, making the theory much stronger logically. And this is why Newton's theory was refuted by the first rocket that travelled outside the earth's atmosphere.

O'Hear makes the same mistake as Lakatos. O'Hear criticizes Popper's counterexamples to Lakatos' thesis, saying that the peculiar orbits of the planets could be produced by powerful rockets on the planets involved. We will ignore for the moment that this state of affairs is ruled out by Newton's gravitational theory for the reason I have just discussed, to see how strong O'Hear's argument is in other respects. It is not clear that such an arrangement could produce rectangular orbits, and O'Hear supplies no argument here. O'Hear finds it sufficient to say that Lakatos's general point is grasped: "that such explanations are always possible...". (O'Hear, [1980], page 102.) But O'Hear seems not to have taken heed of Popper's reply to Lakatos in the Schilpp volume, where he points out that Lakatos provides no general argument for such possibilities: it is far from obvious that such explanations are always possible.

Watkins [1984] agrees with and elaborates O'Hear's argument, making use of his notion of observational predicates. Watkins begins with a useful distinction between the "fundamental" assumptions of a scientific theory and "subsidiary" assumptions, which Popper calls the initial conditions. In Watkins' account the "fundamental"

assumptions of a scientific theory are universal statements. In the case of Newton's theory the fundamental assumptions are the law of gravitation and the laws of motion. The subsidiary assumptions would be, for example, statements concerning the position, mass, number and acceleration of the planets. Watkins calls the fundamental assumptions taken alone the "core theory" T, and the combination of this with subsidiary assumptions the "fleshed out theory", T & A. (page 324.) If we make this distinction, Watkins argues, then we may say, along with Lakatos, that all core theories fail "to forbid any observable state of affairs". This, Watkins says, is because the "core theory lacks the observational predicates needed for a possible conflict with observation reports." (page 325.) Only the subsidiary assumptions can supply these predicates. He infers from this that Popper's proposed examples of potential falsifiers of Newton's core theory do not count as such.

Paraphrasing O'Hear's conclusion Watkins writes:

Newton's laws of motion plus his law of gravitation say nothing about the physical makeup of the planets; in particular they do not rule out the possibility that the planets are enormous rocketlike devices that can accelerate themselves in all sorts of ways. (page 326.)

In a straightforward sense, it is true that Newton's core theory says nothing about the chemical constitution or size or mass or structure of the planets. However, the laws of motion rule out an infinite number of logically possible accelerated motions of objects with mass, and therefore motions of planets or rockets. According to Newton's core theory, therefore, rockets cannot "accelerate in all sorts of ways". Newton's core theory may not have the predicates "rocket" or "planet" but it certainly has the predicates "acceleration" and "mass", and all one needs to know about the planets is that they have mass for the core theory to

rule out infinitely large classes of their possible motion. One could say, for example, that the second law of motion rules out the possibility of masses moving in accord with the law $F=ma^2$. This is a little unconvincing because in order for these laws to contradict one another one has to assume that bodies with mass exist.

But I have a more convincing argument. A rocket cannot accelerate from zero to any finite velocity instantaneously. To modify Popper's rectangular orbit example, we can imagine a rocket moving at constant velocity v along each of the borders of the rectangle, stopping instantaneously at each corner, remaining stationary for an hour, then moving off instantaneously with constant velocity v to the next corner. (v could be any one of an infinite number of finite velocities.) We can imagine this, but according to Newton's second law of motion alone it is impossible. Since force equals mass times acceleration an instantaneous change in velocity would require an infinite force. Could an obstinate Newtonian just postulate the existence of infinite forces? No, for that would make the mass of the rocket indeterminate because an infinite quantity divided by another infinite quantity is indeterminate. (For example, aleph zero divided by aleph zero can have any value from 1 to aleph zero.) But the meaning of Newton's law is that given any two of the values, F , m , a , the equation will yield a determinate answer for the third. Therefore, Newton's second law of motion taken alone rules out infinite accelerations.

In arguing against O'Hear and Watkins here I have allowed their argument considerable latitude and still found it wanting. I ignored the fact that the core of Newton's system contained the assumption that all the forces acting on the planets were gravitational. But this assumption is implicit in the way Newtonians solved their problems. It

effectively rules out O'Hear's rocket propelled planets; a report of such phenomena would constitute a falsification of Newton's core theory and so could hardly serve to protect it. Watkin's should note here that Newton's core theory does not have to mention rocket propulsion for it to deny by implication rocket propulsion of the planets, since such propulsion implies that planetary motion is governed (at least partly) by non-gravitational forces.

A similar argument applies if instead of rocket propulsion the forces applied are gravitational. Taking the law of gravity : $F = Gmm'/r^2$. (Where F is gravitational attraction; G is a constant; m & m' are the masses of two objects; and r is the distance between these masses.) Substituting for F : $am = Gmm'/r^2$. Substituting $*$ (infinity) for a , and cancelling m : $Gm'/r^2 = *$. Hence, either G or m' would have to be of infinite size, and we would again have the problem of indeterminacy for one of the variables.

In this counterexample I have excluded Newton's atomistic theory of matter, for when it is conjoined with the laws of motion instantaneous accelerations follow as a consequence, which in turn leads to an absurdity. If Newton's atoms or corpuscles are infinitely hard and incompressible, one may ask what happens when two of them collide? Since momentum is conserved they would have to rebound from one another with an instantaneous acceleration. Now, since Newton's second law of motion states that force equals mass times acceleration, such an instantaneous rebound would imply that repulsive forces of infinite magnitude were involved in all collisions, which is absurd. (Kant seems to have been the first to notice this. See his Metaphysical Foundations, General Note to the Mechanic.) ³⁶ But it again brings up the problem that the masses of the atoms become indeterminate.

4.3.3 Duhem's Problem

Duhem's problem is the problem of attributing the failure of a prediction. Suppose someone wants to test a theoretical statement B_1 . If a set of assumptions B_2, \dots, B_n , are required in conjunction with B_1 to deduce a prediction g , and the result of the experiment, e , contradicts g , one cannot conclude that B must be false. One can, however, deduce the falsity of the conjunction $B_1 \& B_2 \dots \& B_n$. Therefore, Duhem concluded:

the physicist can never subject an isolated hypothesis to experimental test, but only a whole group of hypotheses. (Duhem, [1954], page 187.)

Even if we know that exactly one hypothesis is false, no experimental outcome will enable us to attribute the fault exclusively to one of the hypotheses.

To make this clearer let us examine one of the problems that confronted Mendeleev's theory of the periodic table of elements. Mendeleev's Periodic Law states that if the elements are arranged in order of their atomic weights, a periodic repetition of properties is observed. The table that Mendeleev constructed actually makes many very precise predictions about the specific heats, boiling points, densities, reactivities etc. of elements. However, early on Mendeleev noted that according to its valence and other chemical and physical properties iodine should be placed after tellurium and before xenon, but this would then put their atomic weights in the wrong order, contradicting the Periodic Law. These anomalies, of which there were several, were called reversed pairs.

Mendeleev could have rejected the Periodic Law but he realized that the predicted position of iodine was based not

only on the periodic law but also on assumptions to do with the observations and measurements of some of the properties of iodine, tellurium and xenon. He had a choice of where to direct the blame for the failed prediction. Mendeleev chose to deny that the gaseous iodine used to calculate the vapour density and hence the atomic weight of iodine was pure. Noting that the gas was dried over anhydrous calcium chloride, he guessed that some of the iodine had been replaced by lighter chlorine, bringing down the measured vapour density and hence the calculated atomic weight. The important point is that Mendeleev faced a number of options left open by the experiment.

The relevance of Duhem's argument to ideology is this. The ideologist may seek to protect a privileged part of his system of assumptions in response to empirical criticism by jettisoning those assumptions he regards as of little importance. This privileged part of the ideology would then be guaranteed against empirical criticism. Popper tries to show how in some circumstances such a defence would be ruled out because we could focus the criticism onto just one hypothesis by comparing two systems:

Admittedly, Duhem is right when he says that we can test only huge and complex theoretical systems rather than isolated hypotheses; but if we test two such systems which differ in one hypothesis only, and if we can design experiments which refute the first system while leaving the second very well corroborated, then we may be on reasonably safe ground even if we attribute the failure of the first system to that one hypothesis in which it differs from the other. (Popper, [1957], page 132, footnote.)

If this were valid it would also further undermine Lakatos's argument, for the crucial experiment may focus on what he calls the hard-core.

However, Watkins has shown Popper's argument to be invalid. Watkins begins by paraphrasing Popper's description of the two systems to be compared by a crucial experiment:

denote that one hypothesis by B_1 and the large number of hypotheses common to both systems by B_2 ; and let B_1' be the hypothesis which replaces B_1 . (Watkins, [1984], page 321.)

Watkins compares theories to recipes. Suppose we have two recipes for a pudding, one uses cinnamon P and the other P' uses nutmeg instead of cinnamon. P' proves to be a better pudding. But this does not mean that nutmeg is gastronomically superior to cinnamon. Perhaps by keeping cinnamon and varying other ingredients in P the chef might produce a pudding even better than P' . Something analogous holds for theories:

Perhaps B_1 is true and B_1' is false, but B_1' is the better partner for B_2 because there is an error in B_2 that is cancelled out by a compensating error in B_1' . (Ibid. page 322.)

One may quibble with the assertion that the errors in the assumptions are "cancelled out", for the falsity content of B_2 & B_1' is no less than (and possibly greater) than the sum of the falsity contents of B_2 , B_1' taken separately. Watkins' point may be stated more accurately: a conjunction of two or more false assumptions can yield true deductive consequences that none of the assumptions taken separately could yield.

An example in political theory would be the following:

B2 = Communism will emerge in a society if and only if more than 70% of workers in that society are employed in industry and involved in unions.

B1' = Russian society in 1987 had less than 20% of its workers employed in industry and involved in unions.

(Suppose B1 = Russian society in 1987 had 71% of its workers employed in industry and involved in unions.)

Even though both B2 and B1' may be false, together they imply the true statement that communism did not emerge in Russian society in 1987. Whereas if the true statement B1 is conjoined with B2 we may deduce the false statement that communism emerged in Russian society in 1987.

In Watkins' interpretation of Popper's argument the two theories are treated as if they were telephone numbers of the same length, so that two theories differing in at most one hypothesis is analogous to two telephone numbers differing in at most one number position. But it seems not to take account of the situation in which the two theories that are put to the crucial test are exactly the same except one has an extra hypothesis, symbolically T and T&A. But this is not a possible interpretation of Popper's suggested exception, for it is logically impossible to have both T I-e and T&A I-e. The theories in Popper's proposal must be representable as T&A and T&-A.

I freely accept that it is sometimes possible for an ideologist to protect a particular sector of his assumptions from some counterevidence that undermines his assumptions taken as a whole by tinkering with what he regards as trivial auxiliary assumptions. But no one has yet proven that this can always be done for any particular system for

any counterevidence. It has yet to be shown, therefore, that an ideology can always in principle be guaranteed from criticism on account of Duhem's thesis.

There is also a purely practical problem for the propagandist in protecting his privileged sector of assumptions. Propagandists have a limited reservoir of immunising stratagems, especially in the short run, and persistent criticism will tax the most inventive apologist. Alan Musgrave makes a similar point in regard to theorists in science. Arguing against Lakatos's idea that scientists can always defend the hard core of their research programme, Musgrave points out that outstanding Newtonians tried for fifty years to explain Mercury's perihelion without having to abandon Newton's laws, but despite their undoubted ingenuity they failed. (Musgrave, [1978], page 195.) Moreover, each movement faces competition for adherents from many other movements; each has more critics than defenders. The "protective belt" may then collapse.

4.3.4. Changing Demarcation between the Hard Core and the Protective Belt

Again, in assessing the relevance of Duhem's and Lakatos's idea to ideological survival, one must take a long-term view. Who is going to police the distinction between hard core and protective belt of an ideology down the centuries? As I pointed out at the beginning of section 4.3, the terminology of a system of ideas needs interpreting, so it is a conjectural matter as to whether the system of ideas is being reproduced or not. Thus error in a doctrine may be eliminated by error in transmission. Moreover, later adherents may well disagree, wittingly or unwittingly, with earlier adherents about what constitutes the privileged sector of beliefs, especially when the earlier adherents are no longer around to argue the point. These disagreements may be genuine mistakes in interpreting the work of their predecessors.

Marxism is a particularly good example here. Marx had a very definite idea of what communism was: an industrially advanced society much more productive than our own without the buying and selling of factors of production. There would definitely be no market in factors of production: this was regarded as the indispensable part of Marxism. In the 1920s and 1930s a devastating attack on the possibility of communism in this sense was launched by Ludwig von Mises and his pupil Friedrich von Hayek. (Mises, [1935], pages 87 to 130.) ³⁷

It took time for their arguments to sink in, but by the 50s and 60s so-called Marxists were advocating "market socialism". There had been no explicit acknowledgement of error, but the old message had been dropped by many. Not many Marxists today are aware of the fact that they are no

longer reproducing what Marx said. Many self-styled Marxists are in fact espousing some form of pre-Marxist socialism; they are Owenites, Proudonists, etc, but rarely non-factor-market society Marxists. Many new forms of "Marxism" have also emerged, further threatening the original demarcation between the "hard core" and the "protective belt".

I would like to develop a general argument to show that there are limits to the ability of a propagandist to defend that part of an ideology that Lakatos might call a "hard core" and Watkins a "core theory". The logical ramifications (i.e., the information content and logical content) of a theory cannot be fully surveyed. Therefore, when modifications are made to the protective belt or subsidiary assumptions A, the theorist cannot always conduct a consistency proof to ensure that remoter consequences of the changes in A plus other assumptions remote from the core theory will be consistent with the core theory.

In the following argument I will adopt Watkins' terminology and distinctions with additions, but the same argument would carry through using Lakatos'.

T = The core theory of the ideology.

A = The subsidiary assumptions of the ideology.

A' = Modified A.

W = Total world view. The set of all assumptions, implied and asserted, that the individual maintains either in belief or in argument.

b = $A' \setminus A$ (that which is in A' but not in A).

Assume that T & A implies e, but a counterexample c, which implies not e, is responded to by the replacement of A by A', which in conjunction with T implies not e (or is at least consistent with c). Assume that the modification of

the subsidiary assumptions A to make A' amounts to the assumption b. Now, it is quite possible for b to be consistent with W \ T&A' and consistent with T, but for W & b to be inconsistent with T. For the propagandist to guarantee, therefore, that the adoption of A' would save T, he would have to survey the whole of his world view, which is at least practically impossible. I have assumed that the world view W of the ideologist includes and is larger than his ideology T&A. (Both Gellner and Shils have pointed to the fact that the ideologist exists in a surrounding culture that they cannot fully divest themselves of. (Shils, [1968], page 67.) This seems to be an inescapable part of the logic of the propagandist's situation: even if one assumed quite unrealistically that the propagandist himself was but a cipher of his ideology, his audience and converts have a much broader and richer belief system that may interact in unforeseeable ways with the ideology.

But the difficulty is even worse for the real life propagandist. Ideologies are adopted by people partly because they provide explanations or interpretations of new and unforeseen events and developments. These may include particular events - coup d'etats, wars, economic slumps etc - or theoretical developments. To do this an ideology has to adopt changes in the world view of its adherents and new subsidiary assumptions A' to interpret or explain these. Even granting the propagandist superhuman powers that enable him to eventually perform a consistency proof for each modification it may be some time before the contradiction comes to light. By that time the assumption b may then have acquired great importance for explanatory and/or rhetorical reasons in maintaining adherence to the ideology. Costs in terms of learning alternative interpretations without b may also be considerable. Some of the content of T may then be sacrificed in order to retain b.

The history of Marxism supplies an illustration. In [1908] Enrico Barone developed a system of simultaneous equations that described in formal terms the structure of input/output functions and prices in an advanced industrial economy. Many Marxists who had been stung by Mises' argument mistakenly welcomed his paper as a vindication of their hope that an advanced industrial economy might be run according to a single plan. But Barone's paper actually helps one to understand how complex the problem of economic calculation is and to better understand Mises' argument. One could argue that having learned Barone's paper with the intention of bolstering their position Marxists became as an unintended consequence more open to counterargument.

This argument takes Watkins' distinction between the core theory and the subsidiary assumptions for granted. It then shows that even with this clear distinction between the part of the theory to be preserved and the expendable part, there is no guarantee of maintaining doctrinal integrity and propagational success. But with ideologies such as Marxism and Freudianism, there is no clear distinction between the core theory and the subsidiary assumptions. Thus these ideologies are even more open to such self-destructive developments than would appear at first sight in the light of a straightforward application of the analyses of Watkins, Duhem and Lakatos to ideologies.

4.4. Factionalism Generated by Unpredictable Emergence of Incompatible Immunizing Stratagems.

There is a tendency for different members of the original group to favour different stratagems, with the typical rise of conflicting factions which battle it out between them, often with a tenacity and vehemence worthy of a family feud. Indeed, the intensity with which factions squabble among themselves is greater than their quarrel with incompatible but non-heretical groups. Factions hate most those heretics most close to them. Thus a Stalinist has more venom for a Trotskyist than he has for a Classical Liberal. These factions in turn may split under the intensified criticism. The greater concern with close heretics than with distant opponents is a tacit acknowledgment that marginal deviations, if not checked, can eventually add up to great schisms. Hence the frequent resort that Christianity has made to special Councils to lay down explicitly what is to count as dogma. This is a very definite cost to the employment of immunising stratagems. With the formation of such factions the original demarcation between the "hard core" and the "protective belt" can easily become blurred and abandoned. In any living ideology there is a continual struggle between the attempts to achieve conformity and the unintended deviations tending to the formation of factions. It is a form of unstable equilibrium in two senses. Firstly, even in the most stable reproduction of the ideology, there is a continual oscillation between deviation and correction. Secondly, once a faction is formed the forces leading to deviation increase dramatically. The best analogy in mechanics is a balancing act.

4.4.1. Unfathomable Implications of an Ideology

The question naturally arises: could not some very determined propagandist settle the problem as to what stratagems will be needed and used in advance and so keep the faithful on the one true path? All new recruits could be specifically enjoined to keep to these and only these stratagems. This would be analogous to Lakatos's "positive heuristic". However, this problem of propaganda is in principle unsolvable.

This circumstance springs from certain logical properties of theories which make it impossible for any individual or group to foresee what specific immunising stratagems will be needed in response to awkward questions and criticism. The work of Church and others can be used to show that no ideologist could construct such a proven complete set of immunizing stratagems.

What our propagandist needs in order to guarantee his position in advance is an effective method of listing all and only the possible counterexamples to his ideology, so that he can check whether any proposed set of immunizing responses would meet all these possible difficulties. An effective method is one that can in principle be carried out by a machine: at any stage the method unequivocally determines how the computation shall proceed and terminate. According to Church's theorem of the undecidability of the predicate calculus this cannot be done. Imagine an arbitrary set of sentences constructed according to the rules of the predicate calculus. Church's theorem amounts to saying that there is no mechanical way of sorting these sentences into two sets: the set consisting of those sentences that are tautologous consequences and the set of those sentences that are not tautologous consequences. Because although any

tautologous theorem will eventually be placed in the tautologous set, there is no way of telling of any sentence not so placed whether it is non-tautologous or whether the method has yet to class it as such. A consequence of Church's theorem is that any theory with universal and existential quantification ("all" and "some" statements) plus unambiguous cross-referencing cannot be supplied with an effective negative proof of theoremhood. In the propositional calculus the truth-table method can determine eventually whether any particular sentence is a logical truth or not. The truth-table method is an effective positive and negative test of logical truth for this system. However, only a positive test is available for the predicate calculus. But the predicate calculus describes the formal structure of the most interesting part of ideologies: the claims to universal significance.

Now, every non-tautologous theorem of a theory is false in some interpretation; i.e. every non-tautologous consequence has a possible counterexample. It follows that there cannot be an effective method of constructing counterexamples, for if there were then there would be a effective method of determining of any sentence whether it is not a tautologous theorem, contrary to Church's thesis. Our propagandist cannot therefore determine in advance a set of immunizing stratagems that would deal with all and only the possible counterexamples to his ideology because he cannot even determine the set of possible counterexamples to check them against. Of course, the argument does not exclude the possibility of the propagandists' simply guessing correctly what the possible counterexamples to his ideology are. However, we will see below that even in principle such counterexamples cannot be listed: they are indenumerably infinite.

The non-trivial implications of any theory are infinite. No individual or group could therefore survey all possible criticisms and prepare standard responses to deal with them. To develop this argument it is helpful to distinguish between two associated but different senses of the content of a statement or theory, which Popper has called 'logical content' and 'informative content'.

The logical content of a theory consists of the set of all (nontautological) consequences which can be derived from the statement of the theory. The informative content of a theory consists of the set of all those statements which are logically incompatible with the theory. The latter idea derives from the intuitive idea that a theory tells us more the more it prohibits or excludes.

There is a one-to-one correspondence between the informative content and the logical content of a theory, for to every element of the one class there is an element in the other class that is its negation. Thus whenever logical content grows, informative content grows also and to the same degree.

Now the argument for the infinite size of the logical content of any theory can be presented as Popper presents it:

Let there be an infinite list of statements a, b, c, \dots , which are pair-wise contradictory, and which individually do not entail t . Then the statement " t or a or both" is deducible from t , and therefore belongs to the logical content of t . From our assumptions regarding a, b, c, \dots , it can be shown that no pair of statements of the sequence " t or a or both", " t or b or both", \dots , entail one another. It then follows that the logical content of t must be infinite. (Popper, [1976], pages 26 & 27.)

The following is a proof of the assumption that no pairs of the infinite sequence of statements entail one another.

The statement "b or t or both" follows from "a or t or both" if and only if it follows from a; that is, if and only if it follows from "a and non-b". But this last statement says the same as a (because b contradicts a). Thus "b or t or both" follows from "a or t or both" if and only if t follows from a; and this, by assumption, it does not.

Popper argues that since the information content of any theory is infinite, we can never know all that we talk about. Thus since Einstein's theory is incompatible with Newton's theory it must be part of the information content of Newton's theory. Newton could hardly have been expected to know this. Indeed, there are an infinite number of complex, non-trivial theories which are part of the information content of Newton's theory.

"t" could be: "Communism will be realized when market monopolization has increased to the point where there is only one capitalist agency. And under present trends p, this will occur in exactly n years". (Where p is a specification of the characteristics of the trend, and n is a finite number.) Then the infinite sequence of pair-wise contradictory statements can be constructed by substituting $n+1$, $n+2$, $n+3$, .. $n+y$, and so on for the rest of the natural numbers. Clearly, however large n is there remain an infinite number of logically possible years in which communism could be established. The same can be done with the hypothesis about trends, p. But all these theories, even though they are but a variation on t, constitute an infinite set and every one of them contradicts t.

Each of the above arguments is sufficient to show that Manning made a very serious error in saying that ideologists

...see all in the way of their belief and see all of what they believe. (Manning, [1976], page 141.)

In putting his ideas into text the ideologist changes in a very special way the logic of his situation. He creates a set of ideas whose implications and ramifications go far beyond his comprehension and thus control. He cannot completely foresee how they will fare in argument, what sort of criticism they will provoke etc. In fact, this problem goes far beyond the capacity of any abstractly conceived predictor. In an important sense the ideologist becomes alienated from his own thought. (Bartley was well aware of this implication, but in some respects did not apply it to the evolution of an ideology under criticism. See especially Bartley "Alienation Alienated", chapter XVIII of [1987].) More importantly for our problem, no leader of a movement can control how the various propagandists will deal with criticism, specifically which immunising stratagem (in our example, which substitutes for n or p) will be created in response to each criticism.

As I argued in chapter 1 the logic of the propagandist's situation is such that if an ideology is to survive and propagate, its chances of doing so are increased if its adherents actually propagandise. The various propagandists will then meet various counterarguments. But at least some of these counterarguments will be unpredictable. As Popper has argued, new ideas - which includes criticisms and defences - cannot be predicted. (Popper, [1957].) If the number of propagandists is quite small, then they may continually consult with each other about the appropriate response to each criticism. On the other hand, if the number of propagandists is significantly large, then their

responses to counterargument cannot be controlled by some kind of democratic decision or from a centre. The responses must be improvised there and then in debate. The possibility is then open for different propagandists to improvise quite different "immunizing stratagems". This will, of course set up the basis for the emergence of factions. But the gulf between such various factions runs deeper. In understanding a criticism one is understanding the theory being criticised, either because the criticism brings out a previously unnoticed implication or because one sees that it does not. If different propagandists improvise different immunising stratagems, they are at the same time developing (perhaps overlapping but) different understandings of the original canonical theory. As is clear from the above example of a Marxist style t, a propagandistic theory allows infinite room for divergence of opinion on what figure, $n+y$, to substitute for a falsified prediction n . (The substitution may occur not in response to a failed prediction but as a necessary consequence of other changes in the overall doctrine.)

In addition, each new immunising stratagem brings its own problems. And since the argument is general, each problem may be solved in any of an infinite number of ways. So we have a rapid accumulation of possibilities for the emergence of factions, the various propagandists possibly holding increasingly divergent interpretations of the same symbolism.

4.4.2. The General Structure of Immunizing Responses to Criticism

I have maintained that the introduction of an immunizing stratagem will bring with it its own problems, which will need further immunizing moves. I have also maintained that this process gets us further and further away from the original theory. If I am right and the succession of immunized theories are in fact different theories how do we account for the appearance of continuity, for the relatedness of the theories? Once we grasp the general structure of the process that spurs the ideologist on from one theory to the next, we will have the answer to this question.

The general pattern of ideological evolution under criticism conforms to a schema proposed by Popper [1965] for the development of science:

Problem 1 → Theory 1 → Error Elimination → Problem 2

The original theory is an attempt to solve a problem. But this solution often has unforeseen problems of its own, so we have problem 2. This new problem then prompts the modification to the original theory to yield a different theory, theory 2. The pattern is infinitely iterative. Popper argues that even the problems are theory impregnated, and this is also true, though not at first sight, of practical problems. It might at first seem that some practical problems, such as pain or severe cold, are just felt. However, practical problems arise, Popper argues, because something has gone wrong because of an unexpected event. But this means that the organism has previously

adjusted to its situation by some expectation, a pre-linguistic theory. (Popper, [1976], pages 132 - 133.)

To illustrate how this schema can be applied outside of what Popper would regard as science, we may point to the evolution of the idea of original sin. This example is taken from Wells [1988]. The belief that God is just naturally leads to the expectation that the virtuous will be rewarded and the wicked punished. (Theory 1.) But the suffering of innocents makes it hard to believe that happiness and unhappiness are distributed according to this principle. Christians, therefore, had a problem in reconciling their belief with the world. (Problem 1.) Now the idea that God will compensate the innocent sufferer in heaven and punish the happy wicked in hell was unavailable to the early Hebrews because they had no belief in immortality. So the Christians supposed that the innocent sufferer was paying for the sins of some wicked ancestor. After all, it is always easy to imagine some wicked ancestor; any possible refuting evidence is more difficult to collect since one can hardly survey the whole of anyone's ancestry. The Christians were then armed with a new and "immunized" theory. (Theory 2.) But this in turn brought its own problem, since it implies that the good in every succeeding generation must be punished until the end of the world, and that there is nothing one can do about it. (Problem 2.) This then prompts the emergence of a revision in the earlier doctrine, an elimination of error. The Christian idea of Atonement is such a revision: we are cleansed of our inherited sins by the death of Jesus, providing we have faith in him. (Theory 3.)

The logic of the situation is often much more complex, as is hinted in the above analysis of how immunizing stratagems may lead to the break up of a movement. The situation is perhaps better rendered with a branching structure in which

each node represents an emerging faction dealing with the same problem in a different way (or with different problems, since factions may even disagree on what are the problems).

The above schema will help us to understand how Marx and Freud were led from one position to another in response to criticism. The schema helps us to see how the successive theories are, though different, related to one another. The thread that seems to tie them together is a problem: specifically the sequence of unpredictable problems that the attempt to solve an original problem leads to. We also see that since the way criticism is dealt with cannot be predicted, any living doctrine must in one sense be a rambling structure. The rambling nature of the doctrine through time is no obstacle to our analysis, but its very object. (It is interesting to note at this point that over considerable time the importance of the various problems may shift considerably, either because later generations have forgotten the original primary problem or have different interests.)

The schema will also help us to identify immunizing stratagems. When identifying immunizing stratagems it is not sufficient to analyse individual statements. One has to relate the sequence of theories to the original problem that the first theory was meant to solve. (In some cases we are fortunate to be able to relate the alleged immunizing stratagem to the explicitly formulated objectives of the theorist and his intentions to solve it. We will see that we can do this quite clearly in the case of both Marx and Freud.) For example, in the case of the swan hypothesis talk of essence could be identified as an immunizing stratagem if the original problem was to give empirical information about all swans - which in the hypothetical example is taken for granted.

4.5. Marxism

Now let us deal with a less trivial example of Popper's. In the Open Society Popper argues that Marx's theory of social development was refuted by the Russian revolution of 1917:

According to Marx the revolutionary changes start at the bottom, as it were: means of production changes first, then social conditions of production, then political power, and ultimately ideological beliefs, which change last. But in the Russian revolution the political power changed first, and then the ideology (Dictatorship plus Electrification) began to change the social conditions and the means of production from the top. The reinterpretation of Marx's theory of revolution to evade this falsification immunized it against further attacks, transforming it into the vulgar Marxist theory that the "economic motive and the class struggle pervade social life. (Popper, [1976], page 43.)

Popper's claim here is quite bold and interesting:

- (1) The original theory is saved from falsification; and
- (2) Immunized against further attacks.

It must be clear that the reinterpretation that Popper is speaking of here is no mere change of conceptual baggage; there is a change in informative content as one theory is replaced by another. The vulgar Marxist theory is a new theory which did not exist before the Russian revolution and in preference for which the original economic historicism was repudiated. In the competition of ideas, Marx's theory of revolution has lost, and this is true even if Marxists are unaware that they are no longer reproducing Marx's theory.

Is the theory immunised against further attacks? In a way it is, for it is no longer presented in debate for criticism (although the text is still accessible to criticism).

Vulgar Marxism clearly is subject to less criticism for it has less information content. Indeed, it may not be open to empirical refutation. This is the important truth in Popper's claim that the substitute theory (for that is what it is) is not open to further attack. But in so far as it makes any claim, it is still open to some possible criticism, and is therefore open to future attacks. Moreover, even if it is not open to criticism with respect to the truth, it is open to the methodological criticism that the substitution is unacknowledged and reduces information. We should not overlook the possibilities here for confusion, and the notion of the immunizing stratagem may do a lot to clarify to the Marxist what his theoretical manoeuvrings amount to.

4.6. Labour Theory of Value

Marx's labour theory of value affords another example of a theory whose immunising stratagems served to abandon the original theory. In *Capital* Marx argues that in equilibrium prices of commodities, including that of labour-power, are proportional to the amount of labour currently required in their production. It was Marx's intention to probe beyond the two factors of supply and demand which many economists in his day thought sufficient to explain market phenomena. Marx called this reliance on supply and demand vulgar economics. However, in developing the theory in Vol.I of Capital [1867] Marx introduces a number of restrictions and qualifications which effectively repudiate the original theory, absorbing into the very conceptual structure of his theory supply and demand. The main immunising stratagem is carried through changes in the interpretation of the term "socially necessary labour time". These changes are not simply changes of conceptual structure, but changes in informative content.

In discussions about immunising stratagems it is normally taken for granted that the immunising stratagem is introduced much later than the original theory, only after the original has encountered much embarrassing criticism from outside sources. Part of the charm of Marx's theory is that it was issued with its own stratagem. Despite his failure, one can see in this Marx's sincere attempt to come to terms with facts and possible objections. It certainly can not be said of Marx's theory that it disregards criticism.

4.6.1. The Problem the Labour Theory of Value was meant to Solve

As I pointed out in section ... to identify immunizing stratagems we must first understand clearly what the theorist's problem is and how he intends to solve it.

Marx begins his exposition of the labour theory of value in Vol I of Capital with this rather interesting argument:

Let us take two commodities, e.g., corn and iron. The proportions in which they are exchangeable, whatever those proportions may be, can always be represented by an equation in which a given quantity of corn is equated to some quantity of iron: e.g., 1 quarter corn = x cwt. iron. What does this equation tell us? It tells us that in two different things - in 1 quarter of corn and x cwt. of iron, there exists in equal quantities something common to both. The two things must therefore be equal to a third, which in itself is neither the one nor the other. Each of them, so far as it is an exchange value, must be reducible to this third. (Marx, [1867], page 45.)

Thus Marx's problem is to discover this third quantity which will explain the exchange ratio of commodities, and hence their price. Marx conceived of his project as similar to John Dalton's work in explaining the ratios in which different chemical elements combine by postulating an underlying factor. However, Marx was also under the influence of Hegelian dialectic, which sometimes made Marx think that he could prove and derive scientific theories by mere argument. (On the other hand, Marx was not cocooned within this Hegelian approach and was not altogether insensitive to empirical facts.) In private communication David McDonagh has made the interesting suggestion that Marx's use of such aprioristic arguments has more to do with Marx's admiration for the work of Aristotle, especially, in

this connection, his method of intuiting the essence of things. ³⁸ Thus Marx proceeds with an argument by elimination to establish what this third quantity can be:

This common "something" cannot be a geometrical, a chemical, or any other natural property of commodities. Such properties attract our attention only in so far as they affect the utility of those commodities, make them use-values. But the exchange of commodities is evidently an act characterised by a total abstraction from use-value. If we leave out of consideration the use value of commodities, they have only one common property left, that of being products of labour. (Ibid. page 45.)

It is less my concern here to point out the fallacy in this argument than to note that Marx begins by assuming that prices are equal to values, defined as quantities of labour-time. Defenders of this bold assumption from superficial criticisms have been keen to point out that Marx regarded this initial statement of the theory as a starting point for further development. (Recent examples are Roemer [1988], page 47; Elster [1987], page 121; Sowell [1985], page 103.) What they have not noticed is that Marx not only qualifies this conclusion but completely contradicts it, finally producing a theory in which labour hours play no explanatory role at all. Marx begins by explaining prices in terms of labour time, but through a number of redefinitions of the term "socially necessary labour time" he produces a theory which explains labour time in terms of prices. The final theory makes essential use of use value (or utility), which Marx here explicitly excluded.

Marx's theory of value was also intended to explain the following problem: how can a capitalist buy capital and labour at their equilibrium market value then sell the finished product at equilibrium market value and still make a profit, without the aid of theft or fraud? This problem

had to be solved in tandem with showing that the profit thus made in accord with justice is made by exploiting workers. (Roemer [1988], page 2, takes this to be the only point of the labour theory of value.) This special part of Marx's project is effectively abandoned by Volume III, which presents a cost of production theory of price and profit, though ostensibly maintaining the ultimate determining influence of labour time. Nevertheless, independently of this Marx abandons his project in Volume I because of the way socially necessary labour time is eventually defined. Let us first examine this abandonment.

4.6.2. A Series of inadvertently Self-inflicted Injuries to the labour theory of value.

On the way to the final theory in Volume I Marx can be seen struggling with counterexamples. And it is in trying to take account of these recalcitrant facts that Marx step by step abandons the original theory.

Marx begins by taking account of two obvious objections. If the labourer is lazy or inefficient, or uses inferior technology, then he would spend longer producing his product. Would this make his product more valuable, ie, fetch a higher price? Marx gets round this by stipulating that it is not any labour that counts, but only *socially necessary labour*.

Some people might think that if the value of a commodity is determined by the quantity of labour spent on it, the more idle and unskillful the labourer, the more valuable would his commodity be, because more time would be required in its production. However, the total labour-power of society counts as one homogeneous mass of human labour-power, composed though it be of innumerable individual units. Each of these is the same as any other, so far as it has the character of the average labour power of society, and takes effect as such, so far as it requires for producing a

commodity no more than is needed on average, no more than is socially necessary. The labour-time socially necessary is that required to produce an article under the normal conditions of production, with the average degree of skill and intensity prevalent at the time. The introduction of power looms into England probably reduced by one-half the labour required to weave a given quantity of yarn into cloth. The hand-loom weavers continued to require the same time as before, but for all that, the product of one hour of their labour represented after the change only half an hour's social labour, and consequently fell to one-half of its former value. What determines the value of any article is the amount of labour socially necessary. Each commodity is to be considered as an average sample of its class. (Ibid. pp. 46-47.)

Marx is saying that to calculate the value of each commodity we should take the total labour required to produce the whole supply of commodities of that particular kind, and divide by the number of commodities of that kind.

But even if we only count socially necessary labour as here defined, some labour - skilled labour - clearly produces more value than other labour. Marx's response to this problem is to treat skilled labour as multiples of unskilled labour - "simple, average labour". But by what means do we reduce the one to the other? Marx says that "Experience shows that this reduction is constantly being made". (ibid. p. 51.) That is, the reduction is made by the process of exchange. The ratio of skilled labour to unskilled labour is the ratio in which their products exchange. Marx has forgotten that the problem is to explain price in terms of labour time, not labour time in terms of price. Bohm-Bawerk seems to be the first to have noticed and criticised this aspect of Marx's argument. (Bohm-Bawerk, [1896]) It is true that Marx tries to deal with this in another way later by reducing skilled to simple labour via the labour expended by teachers in developing the skills. However, as Elster

points out, this and subsequent attempts by defenders of the labour theory of value, have failed. ³⁹

Suppose a great deal of socially necessary labour has been spent on a thing which is useless. No one will buy it, so it will have no exchange-value at all. Marx sees this obvious objection, but his solution is far from happy. He simply stipulates that:

...nothing can have value, without being an object of utility. If a thing is useless, so is the labour contained in it; the labour does not count as labour, and therefore creates no value. (Ibid. p. 48.) (We are reminded of the man who denied that black swans were swans simply because they contradicted his theory.)

Here we have a simple contradiction of what Marx had said earlier:

...the exchange of commodities is evidently an act characterised by a total abstraction from use value. (Ibid. p. 45.)

We no longer have the original theory, but one which makes essential use of utility.

Is usefulness just a necessary condition, given the satisfaction of which the exchange ratio is then determined by the number of socially necessary labour hours spent? Apparently not. Marx says:

Suppose that every piece of linen in the market contains no more labour than is socially necessary. In spite of this all the pieces taken as a whole may have had superfluous labour-time spent upon them. If the market cannot stomach the whole quantity at the normal price of 2 shillings a yard, this proves that too great a portion of the total labour of the community has been expended in the form of weaving. The effect is the same as if each weaver had expended more

labour-time upon his particular product than is socially necessary.

Thus we finally learn that how much labour counts as socially necessary labour time is itself defined in terms of the results of exchange, in terms of what it was supposed to explain! The semblance of a labour theory of value is maintained throughout by using the term "socially necessary labour time", but in the development of this notion the original theory is jettisoned, and replaced by one that actually contradicts it. It is significant that ammunition for the criticism of Marx's doctrine can be found in the canonical text, and this fact has been very important in the evolution of Marxism - specifically, its lack of success in the British socialist circles.

In 1884, the economist, active socialist and Unitarian Minister, the Reverend Philip Henry Wickstead criticized of Marx in a socialist journal. George Bernard Shaw replied to this article, defending Marx's labour theory of value. A debate ensued and Wickstead, drawing on the material in *Capital*, convinced Shaw that the labour theory of value was false and the new marginal theory true. (By marginal theory I mean the theory of marginal utility developed in the 1870s by Jevons, Menger and Walrus.) This played a considerable part in ensuring that British socialism never became Marxist.

Wicksteed pointed out that Marx himself had said that, to produce value, labour must be *useful* labour. It followed that it is not true that the only thing in common between commodities is labour; they also have usefulness:

If only useful labour counts, then when the wares are reduced to mere indifferent products of such labour in the abstract, they are still *useful* in the abstract, and therefore it is not true that "nothing remains to them but the attribute of being products of labour", for the attribute of being useful also remains to them.

Marx only completed and published Volume One of Capital during his lifetime. The other three volumes were composed by Engels from his notes and published after his death. Even though Marx had explicitly worked out the analysis in volume III of Capital several years before he published volume I, it was 16 years after the publication of volume I that volume III was published. Many have supposed that it was ill-health that delayed Marx. However, there is another possibility. One could argue that Marx's slowness in getting Capital finished was due to his seeing the faults in the whole enterprise. The problems with the labour theory of value became increasingly obstinate, leading Marx into contradictory positions which eventually demoralised Marx. It was only through Engels' pestering Marx continually that Volume One was completed.

4.6.3. Summary of Development of the Labour Theory of Value in Vol I According to our Schema

Problem 1.

What determines the price of commodities in
capitalism?

Theory 1.

Amount of labour time in producing the commodity.

Problem 2.

But any labour will not count: namely lazy or
inefficient labour.

Theory 2.

It is the socially necessary labour time that
determines the price of a commodity. (socially
necessary labour time defined at this stage only
in terms of technical conditions of production.)

Problem 3.

But skilled socially necessary labour fetches a
higher price than unskilled socially necessary
labour.

Theory 3.

Skilled labour is just a multiple of unskilled
labour. We can calculate this from observing the
ratio in which skilled labour is exchanged for
unskilled, that is, the ratio of their prices.
Supply and demand introduced and original
intention violated. We therefore have an
immunizing stratagem, and moreover one that
abandons original theory.

Problem 4.

If a commodity has no use, it will not sell. But we have defined S.N.L.T. independently of use value.

Theory 4.

The labour that went into its production does not count as labour. Socially necessary labour is now defined as necessarily useful. Use value is introduced and therefore original the intention is violated. We therefore have an immunizing stratagem. This also abandons the original theory.

4.6.4. Abandonment of the theory of
Exploitation and Profit.

My central concern in section 5.6.3. was to show how Marx abandons his labour theory of value in Vol I of Capital. I should, however, say something about how Marx abandons the theory of exploitation derived from his general theory of prices, and also how this collapse in Marx's project together with Bohm-Bawerk's classic refutation has affected contemporary "Marxists".

Recall that the purpose of the theory of surplus value is to explain how, without resort to fraud, theft or violence, a capitalist, buying and selling goods at their value, can make a profit by exploiting workers. Some intellectuals before Marx, such as the English socialist John Bray and the notable contemporary of Marx, Pierr-Joseph Proudhon, argued that interest and profit were made through swindling the workers. To prevent this, Proudhon even proposed that interest be eliminated by making prices conform to labour values. Marx's method is to build a model of capitalism

that ignores violence and fraud, in order to show that even so workers are exploited.

Marx first points out that labour itself is a commodity, and so its value will be proportional to the amount of socially necessary labour time required to produce it. This in turn will amount to the labour required to furnish the labourer's subsistence. Marx then makes a distinction between labour and labour power. It is labour power that the labourer sells, not labour as such. This arises because a capitalist contracts a labourer to work for a period of time and can within this period legally command the labourer to produce more than his means of subsistence. The difference between the labourer's means of subsistence, counted in labour time, and the extra labour time the capitalist makes the worker perform is what Marx calls surplus value. (He also takes this as a measure of exploitation.) Because prices are proportional to labour time, then it follows that profits will be proportional to surplus value. Moreover, since Marx had also maintained that labour time is the sole determinant of value and therefore price, it follows also that machines, raw material and factories etc, though made by labour, do not add any new value to the product, but simply pass on their labour values to the product. Thus surplus value is a necessary and sufficient condition of profits. It follows that profits should be proportional only to the amount of labour used; capital intensive industries should receive lower profits.

Marx noticed, however, that in a competitive market profit rates between industries are equalized with respect to the amount of total capital irrespective of the amount of living labour that a given capital represented. This meant that profits could not be proportional to surplus value, except in unusual circumstances - when the ratio between variable and fixed capital is the same in all industries, and when

profit is zero. Bowm-Bawerk showed that Marx's attempt to save the theory of value from this hard fact in Vol III of Capital is unsuccessful. Marx substitutes a cost of production theory for the labour theory of value, but tries to maintain the semblance of the original claim by various arguments intended to show that prices are in some sense still ultimately governed by what he still calls "the law of value".

Contemporary Marxists such as Steedman and Morishima have to a large extent absorbed the impact of Bowm-Bawerk's classic refutation of Marx's labour theory of value. However, they try to retain some of the flavour of Marx's theory of profit by asserting that there still is some relationship between surplus labour and profit. Thus Morishima, for example, maintains, as the "fundamental theorem of Marxist economics", that a positive rate of surplus value is a necessary and sufficient condition of a positive rate of profit. But as Elster points out, a similar theorem can be demonstrated for any commodity employed in production, and so does not show anything special about labour. Obviously, profits are possible only if workers do not consume the whole net product. Similarly, profits are possible only if the electricity bill does not consume the whole net product. Moreover, such a theorem does not establish a causal connection. (Elster [1987], page 141.) Thus, in order to retain some credible element of the labour theory of value the proportionality between value and price is jettisoned. The result is a replacement theory of vastly less information content than its predecessor. But more interestingly, one that is also open to obvious objections.

Many other so-called Marxists have trod a similar path from the original theory propounded in Capital. For example, Clarke ([1982], page 99.) reduces the labour theory of value to the observation that within the labour contract

characteristic of capitalism the capitalist can require the labourer to perform more work than necessary to furnish his subsistence. Clarke fails to notice that in emasculating the theory in this way he jettisons a determinate theory of price and profit.

My conclusion to this section must be that through many twists and turns and obscure incremental concessions to both internal and external criticism, the labour theory of value has been substantially jettisoned either explicitly or by implication.

4.7. Freudianism

In this section I argue the following points:

(1) Some components of Freudianism are open to empirical falsification.

(2) The basic theory, whatever that is, may not be falsifiable; it may be metaphysical in Popper's sense. But it is nevertheless open to sound arguments, and therefore its persistence is not guaranteed by its being closed to sound criticism in general.

(3) On the basis of conclusions reached in previous chapters, I argue that these sound arguments can be psychologically/sociologically effective in undermining Freudianism. The perpetuation of Freudianism cannot be guaranteed, therefore, by immunizing stratagems, or by adopting a metaphysical structure.

Popper's first argument against the scientific status of Freud's theory was propounded in 1919. This argument is intended to show that contrary to a good scientific theory, Freud's theory cannot clash with any particular empirical behaviour: whatever the conceivable behaviour the theory can account for it. Popper argues that Freud's theory is different to Marx's theory, because whereas Marx's theory was empirical at first and only later became empirically irrefutable, Freud's basic theory was irrefutable from the beginning. Popper says that the theory does not need any immunizing stratagems to make it irrefutable. Thus in Popper's terminology it is a pseudo-scientific theory from the start.

Popper illustrates this with two radically opposite types of behaviour. A man pushes a child into the water with the intention of drowning it; and another sacrifices his life in an attempt to save the child. According to Freud the first man suffered from repression (possibly of some element of his Oedipus complex) while the second man had achieved sublimation. The same fault characterises Adler's theory. According to Adler the first man suffered from feelings of inferiority (making him want to dare to commit a crime); and so did the second man (who wanted to prove to himself that he dared take a risk). Popper is saying that the basic theory of Psychoanalysis does not have any basic statements.

This argument only shows that Freudian theory does not predict specific behaviours. It does not show that Freudian theory is devoid of empirical implications which can clash with experiment. (But is this same as having potential falsifiers?) The theory may still be open to statistical tests. To illustrate what I mean, consider Eysenck's theory of personality. This theory predicts that most variation in personality between persons can be explained as occurring along two dimensions - extroversion/introversion and emotionality. This theory does not predict specific behaviours. Any particular behaviour may be interpreted as either extroverted or introverted. Nevertheless, we do not reject this theory as being without empirical implications, since if a population of people is assessed by questionnaire for their specific position along these poles of variation we can then go on to make predictions about how the more extroverted, for example, will differ in their responses to various other tests from the more introverted. The predictions will concern more or less response to the different tests, not precisely delineated behaviours; for example, that the more introverted will respond more to alcohol than the more extroverted.

Does Freud's or Adler's theory rule out any possibilities? Popper seems to accept S. Bernfeld's suggestion that Freud's theory predicts that the man will either repress or sublimate, but cannot tell which. (Popper, [1983], Vol I. page 169.) Is this verdict unfair? For example, it might be said Newtonian theory will not predict any particular event without the assistance of initial conditions: we do not thereby regard it as unscientific and closed to empirical refutation. Likewise, a Freudian interpretation must include details of the individuals whose behaviour is being predicted or interpreted. Given such details we may then be able to decide in advance whether a sublimation or a repression is to be expected. But as we saw in our discussion of Lakatos's views, Newtonian theory does make some kinds of prediction without initial conditions; it does exclude some states of affairs within its domain. Indeed any empirical theory, Popper argues, allows the derivation of what we might call "negative predictions". For example, from the theory "All swans are white" we can derive the prediction "You will not observe a black swan at 10 am at place p on the 14th February, 1992". (example adapted from Popper [1974], page 998.)

The important question for Popper is: do Freudians supply such initial conditions in a way that is governed by the general theory? Newtonian theory will tell you what the variables are whose values must be specified; does Freudianism do this? It would appear that for the basic theory no such initial conditions are specifiable. Moreover, there do not seem to be even observable negative predictions. One might say that one can derive the negative prediction "Tomorrow at 10 a.m., if Jones is performing any psychologically important action, then he will not fail to be either sublimating or repressing". But such a prediction is unobservable, and therefore cannot be refuted.

So we cannot argue that Freudianism is on the same footing as Newtonian theory. Clearly its predictions are more vague. Can it be argued that like the interpretations of everyday life, Freudian interpretations can be right or wrong and the subject of severe criticism, albeit criticism that is not as severe as that to which Newtonian theory is subject?

Jim Hopkins discusses this issue in his article "Epistemology and Depth Psychology". Arguing against Grunbaum's position that Freud's ascription of motives stands in need of inductive support, Hopkins says that Psychoanalytic theory seems to be an extension of commonsense understanding, and therefore if commonsense does not need inductive support - and Hopkins assumes it does not -, then neither does Psychoanalytic interpretations. In an extension of folk psychology, we try to extend motivational explanations to phenomena not covered by commonsense. Hopkins illustrates his point in connection with Freud's theory of dreams:

In rational action motives produce willed intentions and real actions aimed at satisfaction. Here they produce wishes and mere representations of satisfaction, on the pattern of wishful imagining. (Article in Clarke and Wright, eds, [1988], page 41.)

Hopkins's argument is endorsed by Peter Binns ([1990], pages 531 - 552.). See also my discussion of Sabastion Gardiner's talk at the 1990 Annual Popper Conference, footnote 10. The argument seems to be invalid. A lot hinges on the extent to which psychoanalysis is an extension of commonsense. Grunbaum might argue that if Hopkins' argument were allowed then one could argue by analogy that physics is in some sense an extension of commonsense, and could therefore jettison its inductive procedures - clearly a non sequitur. Grunbaum might also retort that commonsense

employs induction, or even that Neo-Baconian rules of induction are an extension of commonsense, so that Hopkins' recourse to commonsense would not rule out Neo-Baconian rules of induction. Hopkins fails to examine the possibility that commonsense is at fault. As I point out in my comments on Gardiner's argument, Popper's proposal is not that Freudianism be abandoned, but that its advocates try to enhance its empirical content. Now while psychoanalysis may be an improvement on commonsense in this respect (for it may at least be moving in the direction of increased content, if not quite empirical), it is not sufficient to say that it has improved on commonsense, if this is thought to exonerate it from any further demands. This last point is especially important if Hopkins thinks that the last word on psychoanalytic method is commonsense.

Popper has accepted Bartley's critical point that Freud's theory of paranoia is refutable. Freud's explanation of paranoia in term of repressed homosexuality would seem to rule out active homosexual paranoids. (Popper [1983], Vol.I, page 169.) However, Popper says that this hypothesis is not part of the basic theory he was criticizing.

Nevertheless, whether Freudianism is refutable or not, my main contention holds: Freudianism, like Marxism, is criticizable and, moreover, has been abandoned in response to criticism. But we can say that at least some important components of Freud's theoretical edifice are refutable. To illustrate this thesis, I will focus on one of Popper's own examples: Freud's theory of dreams. We will then examine whether Freud's "basic theory" is refutable, and if not, the extent to which it is criticizable.

There is one theory of Freud's which is eminently refutable, since it is refuted every night: the theory of dreams. Popper argues that it is not refutable, or at least that it

has been made irrefutable by the addition of a number of immunizing devices. Specifically through the distinction between manifest and latent content, and finally by rejecting the original problem Freud set for his theory of dreams. Popper would accept that the theory is still open to criticism, for after all, that is the point of the term "immunizing stratagem". The adherent can still be taken to task for resorting to the immunizing stratagem. He may simply be unaware that the theory contains an immunising stratagem; in which case, pointing it out may have a considerable impact on his belief. However, we may also argue that Popper's own analysis shows that interpreted properly, Freud's theory of dreams is empirically refutable too, and that Freud effectively gives up the theory, "without explicitly saying so". (Popper, [1983], Vol.I, page 165.)

In his The Interpretation of Dreams Freud embarks on the project of "proving that, in their essential nature, dreams represent fulfilments of wishes." (Freud, [1900], page 286.) These frustrated instinctual impulses makes use of residues of the day's experience to produce a symbolic visual representation of their satisfaction. The symbolic form of the satisfaction is a disguise to get passed what Freud called the censor, another name for the super-ego or conscience, and to save the sleeper from waking. A dream, for Freud, then was a substitute gratification of impulses that are denied satisfaction in overt action because they contravene the dictates of conscience. More abstractly considered, Freud thought that a dream is a special way in which the psyche displays its general tendency to discharge tension.

As Popper points out, Freud was aware of the obvious objection to his theory: the existence of anxiety dreams and nightmares, dreams which represent the opposite of the fulfilment of a wish, the fulfilment of a fear.

In the Interpretation of Dreams one finds that Freud quotes several writers who are keen to point out that dreams are often of a distressing nature. He even makes reference to a study done by Florence Hallam and Share Weed on their own dreams which showed a preponderance of unpleasure in dreaming. They found that 57.2% of dreams are disagreeable and only 28.6% positively pleasant. Freud writes:

It does in fact look as though anxiety-dreams make it impossible to assert as a general proposition (based on the examples quoted in my last chapter that dreams are wishfulfilments; indeed they seem to stamp any such proposition as an absurdity. (ibid. p. 215.)

Here Freud looks like a model of the forthright scientist confronting and openly discussing the strong objections to his theory. Rather like Kepler trying to fit the circular hypothesis to the facts. In this he conforms to Popper's demand that a scientist look out for refutations. Popper would accept this, but, as is clear from our discussion of the demarcation problem, would also point out that it is the way the scientist deals with the apparent refutations that is just as important. Popper argues that this objection is dealt with by introducing a very powerful immunizing stratagem. The following is partly indebted to Popper's analysis of Freud's methodology, but my account differs to some extent in the hypothesized means whereby the shift from one theory to another is effected.

It is important to stress the meaning of Freud's earliest formulations of the theory. Careful reading of the text shows that as the problem of anxiety dreams looms larger in

Freud's account the formulation changes. The crucial word which is dropped from the later formulations is "representation". Originally, the theory is about what dreams represent; what dreams picture to us. In the end the theory is about what they are essentially, with little talk of what they represent.

Popper points out that in an analysis of one of his own dreams, Freud concludes that

The dream represented a particular state of affairs as I should have wished it to be. Thus its content was the fulfilment of a wish and its motive was a wish. (Ibid. p. 196.)

Clearly the focus of Freud's discussion is what dreams depict, with their content. To reinforce Popper's point, this concern is reflected in further discussion:

We have learnt that a dream can represent a wish as fulfilled. Our first concern must be to enquire whether this is a universal characteristic of dreams or whether it merely happened to be the content of the particular dream (the dream of Irma's injection). (Ibid. p. 201).

Careful reading of The Interpretation of Dreams shows that the last time we see the original formulation with Freud's original concern with what dreams represent is when he is discussing the dreams of young children:

They (the dreams of young children) raise no problems for solution; but on the other hand they are of inestimable importance in proving that, in their essential nature, dreams represent fulfilments of wishes. (Ibid. p. 286.).

I also found this to be the first place at which the notion of essence comes in to play and which is meant (in a Popperian kind of interpretation) to function as protection from criticism.

Popper argues that Freud proposed to overcome the objection posed by anxiety dreams by distinguishing between the latent and manifest content of a dream. Thus what appears to be an anxiety dream (manifest content) is in reality the representation of the fulfilment of a wish (latent content). But what we have here is not a protection, but an abandonment of the original theory.

Almost straightaway Freud begins to modify (ie rejects) the original theory. We now have the theory that "...a dream is a (disguised) fulfilment of a wish." (ibid. p. 240.)

The latent/manifest distinction marks the point at which Freud's concern has moved away from the problem as to what dreams represent and on to what lies behind them, what motivates them:

There is no question that there are dreams whose manifest content is of the most distressing kind. But has anyone tried to interpret such dreams? to reveal the latent thoughts behind them? (Ibid. p. 215.).

I conjecture that the transition from the early theory to the later one is assisted by the ambiguity of the word "represent". It can be synonymous with "depict" or, more broadly, "symbolize"; but it can also be synonymous with "indicates", as a high body temperature may indicate illness. Freud uses it in the first sense in his original formulation but in the other sense in his later formulation in which the dream simply indicates the presence of a wish.

The latent/manifest distinction is supposed to be protection against criticism. Popper says that in Freud's mind this distinction solves the problem posed by anxiety dreams.

Freud writes:

The question raised was how dreams with a distressing content can be resolved into wish-fulfilments. We now see that this is possible if dream-distortion has occurred and if the distressing content serves only to disguise something that is wished for. (Ibid. p. 227.)

In Freud's theory the disguise is necessary to hide the wish from the superego, what we might call the conscience.

Clarifying Popper's point, we now see why the latent/manifest distinction is so powerful. Freud nowhere makes it plain how one would distinguish between a dream in which wish fulfilment has been disguised and a dream which is not a wish fulfilment. But this is necessary to make it an empirically testable theory. Any apparent counterexample can be dismissed as involving distortion and in fact counted as a verification. There are no limits set to the sort and extent of distortion a latent dream content may be subject to. The illusion that limits are set is created, perhaps unwittingly, by the postulation of a certain number of processes of distortion: condensation, displacement and secondary revision. But in reality the details of latent-content distortion are only constrained by the end product, the manifest dream. With sufficient intermediate steps one can condense, displace and secondarily revise any thought into any other thought. Freud's theory of dreams is rather like the theory that goblins and fairies exist, but with their magical powers they always manage to cover their tracks and always remain undetectable. Someone points out that no signs of goblins or fairies were observed despite extensive monitoring of their traditional haunts, to which the goblinologist retorts: see! I told you they always

manage to cover their tracks; they are so clever. From what you have told me, they must have escaped your view in this way....

In the light of Freud's attitude to experiment this should not surprise us. Freud was not interested in making his theories amenable to experimental testing. In a postcard to Rosenzweig in 1934 is a reply to Rosenzweig's attempts to study repression experimentally. Freud stated:

I cannot put much value on these confirmations because the wealth of reliable observations on which these assertions rest make them independent of experimental verification. (As quoted by Eysenck, [1986], page 149.)

Still, we must not lose sight of the fact that the original theory has been sacrificed in making room for an alternative theory that contradicts the original. (page 29) This is an important point, not least because eminent interpreters of Freud's theory have taken the later causal theory to be the one and only basic theory of dreams propounded in The Interpretation of Dreams. There are in fact two theories:

- (a) All dreams represent wishes as fulfilled.
- (b) All dreams have wishes as their motives. These motives are the "latent content" of the dream.

As I argue, (b) actually replaces (a) in the course of Freud's discussion. Adolf Grunbaum overlooks this important development when he asserts:

Freud's wish-fulfilment theory of dream production is clearly a causal hypothesis." (Grunbaum, "The Degeneration of Popper's Theory of Demarcation, in D'Agostino and Jarvie, eds, [1989], page 152.)

The proposition "All dreams have wishes as their motives" is a causal hypothesis, but the proposition "all dreams

represent wishes as fulfilled" is not. The latter is a universal interpretation of the content of dreams. In the case of the latent/manifest distinction we have an example of an immunizing stratagem that is tantamount to the rejection of the theory for which it was meant as protection (or that might be interpreted by Popper as protecting the theory). Moreover, it is a theory with less content for the introduction of the latent/manifest distinction brings with it no independently testable consequences: the manner of distortion is inferred purely from the ways the dream deviates from the representation of a wish.

Popper's own account of Freud's attitude to apparent counterexamples shows that Freud effectively gives up the original theory. Popper quotes a passage from The Interpretation of Dreams which shows signs of Freud's demoralisation over his theory:

in order not to confirm the impression that I am trying to evade the evidence of this chief witness against the theory of wish-fulfilment whenever I am confronted by it, I will now give at least some hints towards an explanation of the anxiety dream.
(p. 737)

This is in stark contrast to page 215, where Freud confidently says

...there is no great difficulty in meeting these apparently conclusive objections.

Now Freud can only promise "hints" at a solution.

Popper points out that the hints are unsatisfactory even in Freud's eyes, and that Freud at last concludes that the whole topic of anxiety dreams falls outside the psychological framework of dream formation.

Popper quotes a revealing sentence from the 1911 edition:

Anxiety in dreams, I should like to insist, is an anxiety problem and not a dream problem. (Quoted in Realism and the Aim of Science. p. 167.)

Thus Freud effectively abandons the theory, though Popper would like to point out that it is not a conscious correction and admission of a mistake. But there are other comments by Freud which indicate this abandonment. In section ix of Freud's paper of 1923, Freud asserts unambiguously that some anxiety dreams are not wish fulfilments but "are the only genuine exceptions". However, this acknowledgment is not included in any edition of The Interpretation of Dreams.

I think we do have a genuine immunizing stratagem in Freud's attempt to develop his theory of dreams. Remember that we must identify an immunizing stratagem by noting first what the original problem was that the theorist intended to solve and then compare this with how difficult evidence is treated. We have seen that Freud actually abandons not only the original theory - all dreams represent the fulfilment of wishes - but also the original problem.

This digression into Freud's theory of dreams has revealed that at least some components of Freud's theoretical edifice are open to empirical refutation. We may also conclude that this openness to empirical refutation was effective in making Freud abandon the original theory, though without explicit acknowledgment. Freud abandoned the theory without perhaps realizing he had done so as an unintended consequence of trying to defend it. We must now examine a further question.

The original theory may have been empirically refutable, and Freud may have abandoned it. But is its replacement criticizable? Bear in mind Popper's current position on the criticizability of metaphysical positions. My conjecture is that Freudians who embrace the replacement theory are confused and attribute more empirical content to the theory than it contains. But their confusion can be dispelled by comparing the theory with an equally weak theory that contradicts Freud's replacement. For example, one might as well hypothesize that all dreams represent not the fulfilment of a wish but the fulfilment of a fear, if not manifestly then latently. No matter what is represented manifestly in a dream one could always imagine some mechanism of distortion that would convert the latent fearful content of the dream into the manifest content. Such an argument might form a part of a set of sound arguments that would prompt the Freudians to embellish their theory with greater testable content in order to escape from the uncomfortable situation of indecision. This would be predicted on Festinger's theory of cognitive dissonance, ironically a theory much hailed by those who see ideologies as closed to argument. (See sections "Logical Rationality" and "Memetic Evolution of an Ideology" in chapter 2.) One might at first think that a Freudian could defend Freud's theory of dreams from such a criticism by pointing out that the choice of a wishful, rather than a fearful, latent content and motive is not arbitrary but is constrained by the natural assumption that humans seek to achieve their ends and avoid pain and anxiety, specifically to live and reproduce happily. This is part of what Hopkins is suggesting when he refers to the relevance of common sense. This might be true for commonsense, but there is no such recourse either in Freud's later developments of the theory of dreams in response to the problem of anxiety dreams or in the later developments of Freud's general theory. Fifteen years after the publication of [1900] Freud was driven by

the problem of anxiety dreams to say that anxiety and punishment in a dream may be exactly what is wished for, though perhaps not pleasant. (Freud, [1915-1916], page 257.) Freud maintained this position at least as late as ([1932], page 57.), where he says his division of dreams into wish-fulfilment, anxiety-fulfilment and punishment-fulfilment keeps his theory intact. The anxiety and punishment are produced not by the instinctual wishes but wished by "the other person", the censor. But this does not square with his intention quoted above of showing that the instinctual wish-fulfilling content of Irma's dream is not just an exception but "a universal characteristic of dreams". In the development of his general theory Freud postulated two fundamental drives: eros and thanatos. Eros is that instinct that strives to preserve and reproduce the organism; thanatos is that instinct that strives to return the organism to the ultimate state of quiescence - death. (Freud, [1920].) Thus the restraints on the attribution of different types of wishes are seemingly none existent.

4.7.1. Criticizability of Freud's "Basic Theory"

We have seen that at least some components of Freud's theory are empirically refutable, but we must return to the question that Popper's original criticism raised: is Freud's "basic theory" open to empirical refutation? If it were not we would have to conclude that the only sound arguments that might undermine any movement based on the basics of Freudianism could not be empirical refutations. But would it then follow that Freudianism cannot be undermined by sound argument because it is uncriticizable in any way? What might be the structure of these non-empirical sound arguments? In answering this question I will examine arguments by Grunbaum, Binns and Gellner that bear directly on this question. Binns points out that "Freud's theory" really refers to a succession of theories, and so it is

impossible to isolate the basic premises of the theory. (Binns, [1990], page 533.) Nevertheless, it is possible to analyse each conjectured basis of each theory. I will focus on Grunbaum's interpretation of the basis of Freud's theory, and argue that the theory thus interpreted is either open to empirical tests or must by implication be abandoned by attempts to save it by invoking the supposed special interpretive powers of psychoanalysts.

Grunbaum takes the centre-piece of Freud's theory to be the way that therapy is seen as confirming the truths of the theories that underlie it. This is expressed by Grunbaum in the following way:

- (a) Only the psychoanalytic method of interpretation and treatment can yield or mediate for the patient correct insight into the unconscious causes of his neurosis.
- (b) The patient's correct insight into the conflictual causes of his condition and into the unconscious dynamics of his character is in turn causally necessary for the durable cure of his neurosis. (Grunbaum, in Clarke and Wright, eds., [1988], page 14.)

Grunbaum calls this the "Necessary Condition Thesis", NCT. Grunbaum argues that when this is conjoined with a clause to eliminate the effects of suggestion, we are left with a complete necessary and sufficient condition which is both observable and thus open to refutation. Indeed, Freud accepted in 1926 that (1) was false because of the existence of spontaneous remission, and by 1937 Freud admitted that neuroses could recur even after therapy and so (2) was also false.

Since Freud made these admissions more experimental work has been done to test the NCT. There are many studies that show that control groups do as well or, in some cases better,

than comparable groups treated by psychoanalysis. (Farrell, [1981]; and Eysenck, [1985].) In many cases the control group are given a placebo. Binns has questioned whether this would isolate the control group from unintentional psychotherapy, for the subjects may think they are receiving some cure and, more importantly, they are given an opportunity to talk about their problems to a supportive councillor. If it were impossible to separate psychoanalytic therapy from a control group, then the theory might not be open to empirical testing. However, Binns inaccurately describes the purpose of the placebo. A placebo is used in this context not to eliminate the influence of all beliefs, but rather certain ranges of belief that are thought to be collectively essential in psychoanalytic treatment. Presumably, thinking that one has been given a curative drug is not essential to psychotherapy, and believing that one is being helped in conversation is not sufficient. This avenue of criticism, therefore, is still open for empirical testing.

I suspect that psychotherapists eager to maintain the integrity of their doctrine would be hesitant in adopting such a defence against the counterevidence. Because, if psychoanalysis may be given so frequently by accident, then another, seemingly more powerful defence would have to be sacrificed: what Gellner calls the monopoly of proper depth interpretation that the psychoanalytic guild claims for itself. (Gellner, [1985], page 79.) This power of decreeing what is and what is not a proper psychoanalysis and what is a cure is not constrained by publicly testable criteria and so it enables defenders to dismiss any allegedly failed psychotherapy as not really psychotherapy after all or alternative cures as not really deep cures. What Gellner overlooks is the great propagandistic cost of such a defence. If the identification of psychoanalysis becomes such an arbitrary matter, then what meaningful content

exactly is being saved and perpetuated? In order to save face, it would seem, the psychoanalyst has to abandon the doctrine.

4.7.2. Further Empirical Refutations

Eysenck [1986] has argued that Freudian theory is much more open to refutation than Popper would have us believe.

Freud's theory of repression, presumably a "basic" part of Freud's theory, is quite amenable to experimental study. According to Freud, Eysenck says, "the essence of repression lies simply in the function of rejecting and keeping something out of consciousness." Repression is a kind of defence mechanism to protect the individual from unpleasant emotional experiences. In one study two stories of a dream were used, one an Oedipal dream sequence and one a non-Oedipal dream sequence. Subjects were read either one or the other, and then had to recall the dream. Recall for the Oedipal sequence was significantly worse, as we would predict from Freud's theory. (See Eysenck, [1985], page 158.) The actual result of the experiment is unimportant; what is important for my point is that Freud's theory can be interpreted in such a way as to make it falsifiable.

On the other hand, while one might see this experiment as predicated on a plausible interpretation of Freud's basic theory, can one be sure it is the correct interpretation? Perhaps it would be better to say, have psychoanalysts agreed on some criteria of falsifiability so that we can specify at least some potential falsifiers. We can always interpret any system of symbols as an empirical theory and impose on it our own class of potential falsifiers. But we want to know what the psychoanalysts are claiming, not what we might arbitrarily take them to be claiming. On the other hand, empirically testable interpretations of Freudianism

need not be arbitrary: they can and must be constrained by our knowledge about the problems that psychoanalysis is trying to solve plus what it takes as background knowledge.

4.8. Refutation versus Elimination

The main conclusion to be drawn from the above examples of immunizing stratagems is the paradoxical one that an ideology may evolve by jettisoning its mistaken ideas in response to criticism without ever admitting a single mistake. An ideologist may abandon his ideology without explicitly recognizing that it was a refutation that lead him to do so.

The importance of these immunizing stratagem is not that they guarantees the preservation of an ideology, but that they entail the repudiation of the ideology as the price for avoiding openly admitting a mistake in the light of refutation. We now see that the immunizing stratagem offers no objection to the general claim that ideologies cannot guarantee themselves against the impact of criticism, but in fact is a way of taking account of criticism.

Popper has often made the distinction between the refutation and the abandonment of theories. He has criticized Lakatos for ascribing to him a confusion of the two. Popper has this to say:

...while the former is, given the acceptance of a refuting state of affairs, a matter of logic, the latter is a question of methodology, and will depend among other things, on what alternative theories are available. (I have often stressed the need for working with more than one hypothesis in connection with both falsification ["falsifying hypotheses"] and the growth of science in general). (Popper, [1974], page 1009.)

That Popper was aware of the distinction is clear from his remarks about Einstein in his discussion of the demarcation problem. Popper points to the fact that Einstein regarded his theory as false, as simply an approximation to the truth, but continued to work on it right to the end of his life.

To be more precise the distinction we are interested in is that between:

- (1) Accepting explicitly a refutation; and,
- (2) Abandoning a refuted theory.

Thus it is quite possible for one Marxist or Freudian to explicitly accept that one of his theories has been refuted, but quite rationally continue to work on the theory; while another Marxist refuse or simply fail to explicitly recognize a refutation, but nevertheless jettison the theory. The consequence, is that, if one could look behind the camouflage of face saving devices and simple confusion, one might see the more scientific ideologist clinging more stubbornly to his theory (while recognizing its falsification) than the immunizing-prone ideologist who simply jettisons parts or the whole of the ideology.

Part of the methodological import of Popper's discussion of the immunizing stratagem is that if one wants to promote the growth of knowledge one must explicitly recognize error. Science has grown rapidly partly because of its adherence to these rules. But from our discussion we may conclude that while these rules expedite the evolution of theories in response to refutation, they are by no means necessary to such an evolution. Refutation can have a significant influence even in a non scientific context: it may eliminate error surreptitiously, albeit with the risk of its surreptitious return.

4.9. Conclusion.

- (1) A network of ideas can evolve under the impact of refutation and criticism, with the elimination of error, without any explicit acknowledgement of error.
- (2) One of the ways this can happen is through the use of so-called immunizing stratagems. The class of Immunizing stratagems which have this structure are better seen as face savers, not theory savers.
- (3) Immunizing stratagems do not prevent the critic from analysing the ideologist's doctrine, pointing to the immunizing stratagem involved as a criticism in itself, and then providing an empirical refutation of the reinterpreted doctrine.
- (4) That therefore immunizing stratagems do not serve to preserve an ideology for which they have been instituted.

Conclusion to Thesis

Though there are barriers to sound argument, none are insurmountable. All systems of ideas and their adherents are open to sound argument, albeit a long and difficult one. Nevertheless, we should expect error to be perpetuated even in a population of humans who infallibly eliminate error, because it may be passed on more quickly than it is repudiated.

In exploring my original question I have been led necessarily into fairly diverse areas. The arguments for barriers to argument locate the barriers in areas that are traditionally the preserve of different departments: logic, psychology, sociology. The thesis, as a consequence, does not have the traditional look. However, I think my approach is sound and has some merit. My original problem has remained definite throughout and my general thesis has dominated the structure of the work, hopefully bringing disparate topics into a coherent pattern of argument. My approach has enabled me to analyse in detail relationships between the realms of psychology, logic and sociology that have so far received scant attention: for example, how the unfathomable logical structure of an ideology may influence its sociological evolution. It has been said before that the attempt to relate apparently disparate domains can be fruitful, but some truths are worth repeating. Moreover such an attempt harmonises well with an internal criticism of the work of Popper and Bartley. Popper [1983] maintains that there are no subject matters as such, but only problems and the desire to solve them. To reinforce Popper's point, consider the following examples. Discoveries in biology may contribute to breakthroughs in psychology (witness the burgeoning science of physiological psychology); breakthroughs in biology may contribute to breakthroughs in

economics (e.g. Darwin's use of Malthus's population principle); discoveries in politics may contribute to breakthroughs in biology (e.g. W.D. Hamilton's use of Axelrod's theory of games of the prisoner's dilemma type); discoveries in psychology may contribute to theories in politics (e.g. many political theorists have used Leon Festinger's theory of dissonance: e.g. Paul Verne and Jon Elsters).

The main points of contention were provided by Popper and Bartley, but in order to thoroughly assess their more suggestive assertions, I have explored the work of others whose positions are more explicit on these points. For this reason, among others, the thesis has broader implications than an internal criticism would at first suggest.

My thesis is greatly indebted to the work of Popper and Bartley. Nevertheless, I have tried to criticize their views on the limits to argument, in the hope that those who value sound argument can be more confident about its effectiveness.

Endnotes:

¹ It is appropriate here to make some methodological comments.

The question of definition has dogged many attempts to solve important problems that lie behind talk of ideology. This methodological impasse can be traced to the influence of Aristotle's doctrine of real or essential definitions. This doctrine is often associated with another baneful presumption of much social science: the idea that before one can have a rational discussion one must define one's terms.

This paper makes a clear distinction between two types of definition: the essential and the stipulative. Essential, or real definitions, were an invention of Aristotle's. They were meant to state the essence of the species defined, along with the genus that includes it (Man is a rational animal). Traditionally, they have been called real definitions since they are concerned with objects rather than words, and also perhaps because they can be thought of as asserting the existence of the essences involved. Essential definitions are answers to questions of the form "what is water?", "What is democracy?", "What is ideology?". Most work on ideology has adopted this line of attack. Whatever might be the outcome of a metaphysical enquiry into essences, this approach is methodologically unsound. As a matter of historical record, those sciences that have adopted this approach have made the least progress, and those that have abandoned it, such as physics, chemistry and biology, have made tremendous advances.

There is an explanation for this. Essential definitions lead to infinite regresses or to a dogmatic starting point (cf. Popper, [1957], pages 9-13.) If an infinite regress is followed, there is no getting beyond definition; likewise, if a stopping point to definition is dogmatically adopted there is no rational method of deciding between those proposed by different investigators. Physics, chemistry, biology, game theory, and economics have quite a different attitude to definition. When a definition is required they employ what we may call stipulative definitions.

A stipulative definition is one that furnishes us with an abbreviation of a longer, cumbersome expression. Take the well known definition: Democracy is government of the people by the people for the people. Read as an essential definition it states the essence of democracy. But read as a stipulative definition, it says that we can replace the expression "government of the people by the people for the people" with the expression "democracy". Contrary to Manning, a stipulative definition is really quite harmless. As Quine says, it is simply a method for eliminating expressions. (cf. Quine, [1976], chapter 7.)

In those sciences that have made conspicuous progress basic terms are "defined" implicitly and learned by context: for example "force", "energy", "space-time point". It was J D Gergonne who introduced the idea of implicit definition. He gave the example of someone who knew the meanings of triangle and quadrilateral but not of diagonal. If the person then read that "quadrilaterals have two diagonals, each dividing the quadrilateral into two triangles," he would know what a diagonal was without an explicit definition. It is sometimes granted that one cannot define all of one's terms, but one must define all new terms. Gergonne's example nicely rebuts even this modest position.

Since this paper is an immanent criticism of Popper's theory of ideology then this approach to definition is quite in order as Popper is a defender of this approach to definition.

² The idea that I am criticizing is held explicitly by many - though often without argument - and implicitly by many more. It is certainly not a straw man. The following quotations will show at least that writers have been very clumsy in the expression of their ideas. However, I intend to show that even if one excludes clumsy expression and hyperbole, there are still many who clearly assert or assume that some ideas are insulated from criticism.

Manning:

"An ideology cannot be challenged by either facts or rival theories."

Kolakowski:

"Not only in the 'socialist bloc', where the authorities used every means to prevent information seeping in from the outside world, but also in the democratic countries, the Communist parties had created a mentality that was completely immune to all facts and arguments 'from outside, i.e.. from 'bourgeois sources.'"

Knox (quoted by William Sargent):

"If I have dealt at some length with this single side of Wesley's character - I mean his preoccupation with strange psychological disturbances, now commonly minimised - it is because I think he, and the other prophets of the Evangelical movement, have succeeded in imposing upon English Christianity a pattern of their own. They have succeeded in identifying religion with a real or supposed experience...for better or worse, the England which weathered the excitements and disappointments of the early nineteenth century was committed to a religion of experience; you did not base your hopes on this or that doctrinal calculation; you knew. For that reason the average Englishman was, and is, singularly unaffected by reasonings which would attempt to rob him of his theological certainties, whatever they may be." (William Sargent. [1963], page 115.)

Le Bon:

"In enumerating the factors capable of making an impression on the minds of crowds, all mention of reason might be dispensed with were it not necessary to point out the negative value of its influence...It is not necessary to descend so low as primitive beings to obtain an insight into the utter powerlessness of reasoning when it has to fight against sentiment. Let us merely call to mind how tenacious, for centuries long, have been religious superstitions in contradiction with the simplest logic...Let us leave reason, then, to philosophers, and not insist too strongly on its intervention in the governing of men. It is not reason, but most often in spite of it, that are created those sentiments which are the mainsprings of all civilization - sentiments such as honour,

self-sacrifice, religious faith, patriotism, and the love of glory." (Le Bon. [1979], pages 77 - 78.)

³ Popper argues in private correspondence (1989) that Weismann's principle that the germ cell cannot be affected by the soma cannot be true for bacterial cells because the germ cell and soma are identical. However, Popper would probably agree that this caveat does not affect the present argument as it applies to humans in which the germ cells and soma cells are quite distinct.

⁴ To illustrate what I mean here I can point to the organisation called Alcoholics Anonymous. Alcoholics Anonymous is a Christian group. They used to refer to God in their meetings but they now use the phrase "higher power", apparently to avoid alienating some members. The term "higher power" is more abstract than the term "God" (used in a Christian context), and can be interpreted as referring to anything whose powers are greater than one's own.

⁵ It may also occur as a combination of the two processes. Hallpike [1988], arguing against a natural selectionist account of culture, makes much of the fact that for natural selection, variation has to be blind or random, whereas in human society variation can be the result of conscious action. However, Steele has argued that variation need not be entirely blind or random for natural selection theory to have some explanatory value. "When geneticists studying fruit flies deliberately stimulate certain kinds of mutations by, for example, radiation, this does not mean that the usual corpus of neo-Darwinian theory has to be abandoned." (Steele. "How we Got Here". in Critical Review. Volume 2, Number 1. page 126.)

⁶ Levine, in his study of over 800 members of religious movements, found that over 90% left within two years. (Saul Levine. [1984])

Bird and Reimer, in their study of 1,607 adults in Montreal, found that 75.5% of participants in new religious movements were no longer involved five years later. The defection rate ranged from 55.2% for Transcendental Meditation to 100% for the Church of Scientology. (Bird and Reimer. [1983], pages 221-2.)

⁷ The following proof of the inadequacy of Popper's original proposal is from Tichy ("On Popper's Definitions of Verisimilitude", British Journal for the Philosophy of Science, 25, [1974], pages 155-160.)

Popper's proposal, stated in terms of sets of statements, is that a system Y has more verisimilitude than a system X if:

$$(P) \quad X_t \subset Y_t \quad \text{and} \quad Y_f \subseteq X_f \quad \text{or} \quad X_t \subseteq Y_t \quad \text{and} \quad Y_f \subset X_f$$

(Where X_t = X's truth content, X_f = X's falsity content, etc..)

Suppose Y is false and has more verisimilitude than X. There must be at least one false sentence in Y, which we will call C. By the proposal (P) either $X_t \subset Y_t$, in which case $Y_f \subseteq X_f$, or $Y_f \subset X_f$, in which case $X_t \subseteq Y_t$. In the first case let B be a sentence in the difference $Y_t \setminus X_t$. It follows that B & C is false and in Y, and therefore also in Y_f . However, B & C cannot be in X_f , because if it were then B would be in X. Thus $Y_f \subseteq X_f$ does not hold.

In the second case let A be a sentence in the difference $X_f \setminus Y_f$. Then $C \rightarrow A$ is true and in X, and therefore in X_t . However, $C \rightarrow A$ cannot be in Y_f , because if it were then A would also be in Y. Thus $X_t \subseteq Y_t$ does not hold, either.

There are also problems with information content comparison as such, where the content of a theory is defined in terms of the set of all the problems that a theory can answer. (First proposed by Popper, [1974], pages 20-21.) Watkins (private communication presented in Popper [1972], pages 369-370.), Grunbaum [1976] and Miller [1975] have pointed to interesting cases where some questions that are decidable by a predecessor theory are undecidable by its successor.

Popper admits that the problems of information content comparison and verisimilitude may not be solvable by purely logical means, and that the theories may only be compared relative to relevant problems or even by reference to the historical problem situation.

⁸ In the light of scientific theories certain descriptions in the Bible of particular events have become increasingly difficult to maintain in their literal interpretation. For example, David Jenkins, now Bishop of Durham, wonders:

"whether the actual discovery of the empty tomb was one of the preludes to discovering Jesus to be alive or whether the story came to be told as a symbol of the discovery that Jesus was alive."
(David Jenkins. Living with Questions. Investigations into the Theory and Practice of Belief in God. S.C.M. 1969. page 137.)

This prompted the House of Bishops of the General Synod of the Church of England in 1986 to publish a statement and exposition of "The Nature of Christian Belief". The statement unequivocally affirms that the resurrection is "an objective reality, both historical and divine". But in partial concession to Jenkins, it allows that even though the canonical gospels assert that the tomb was found to be empty, this story may not be true. Jesus may have left his flesh and bones in the grave.

⁹ Manning asserts that what makes an illegal seizure of power a revolution rather than a coup d'etat or a counter-revolution for the Marxist is the fact that the former was committed by a Marxist and the latter by a Liberal or Nazi. This is a distinction supposedly made independently of the actions, which could be exactly the same. The argument here is invalid. From the fact that a distinction between two actions is not based on the intrinsic structure of the actions, it does not follow that the distinction carries no descriptive content about the world other than about who committed the actions. Manning has neglected to consider the philosophical argument that actions are individuated by their goals and the beliefs that the actor has about how they relate to the world, especially how they serve as means to the goals (Searle, [1984]). I may sign my name in the same way whether I am filling out a cheque or concluding a letter, but these two actions are different. Both the Marxist and Nazi may take power by the same means, but their actions are distinguished by the differences in the theories they entertain regarding the place of the seizure of power within their scheme of means and ends. According to my thesis, therefore, the actions also differ with respect to the kinds of critical argument necessary to prevent them. (See my discussion of instrumental rationality in chapter 2.)

10 Here I take for granted, in accord with an internal criticism, Popper's theory of propensities, as expounded in his book A World of Propensities. Antiquarian Books Ltd. 1990.

11 It is not formally inconsistent, but perhaps more accurately described as a case of Austin's infelicity.

12 The main criticisms of C.C.R. are (i) trivial synthetic truths and tautologies are uncriticizable; (ii) C.C.R. is paradoxical; (iii) C.C.R. is committed to logic, which is uncriticizable; (iv) some doctrines are deliberately constructed so as to be uncriticizable (reinforced dogmatisms).

(i) Watkins contends that the statement "There exists at least one sentence written in English prior to the year two thousand that consists of precisely twenty two words." is uncriticizable because of its obvious truth. Another example is "I am more than 2 years old" said by a thirty year old man. Bartley's response to this is to claim that all he needs for his thesis is that it is logically possible to criticise any position. A clearer response is that of Miller, who argues that C.C.R. no more requires that any position be successfully criticizable than Popper's demarcation criterion demands that every scientific theory be successfully falsified. We have systematic methods of checking different sorts of claim; the fact that these methods apply to both difficult and easy cases is a consequence of the systematic nature of the methods and is no argument against their applicability. I would add that trying to exclude trivial cases in a systematic way may not even be possible; certainly, Watkins supplies no example of such methods

(ii) Both Watkins and Post have produced arguments in an attempt to show that C.C.R. is paradoxical. Both Post and Watkins's claim not that C.C.R. is not criticizable, but that the statement that C.C.R. is criticizable is not criticizable. Thus they show that a consequence of C.C.R. is uncriticizable. This latter statement is known as the C.C.R. generalization. Watkins's argument proceeds as follows.

(1) All propositions that are rationally acceptable are criticizable. (The C.C.R. generalization.)

C.C.R. is meant to be acceptable, so we also have

(2) (1) is rationally acceptable.

Therefore (3) (1) is criticizable.

Suppose we have shown that (3) is false; then, given (2), we would have shown that (1) is false. This would amount to a criticism of (1). But since this is what (3) asserts, (3) would be true. Thus our initial assumption that (3) is false leads to absurdity, and therefore there is no valid argument that (3) is false, and so it must be analytic. (Watkins, [1971].)

Bartley responded by contending that C.C.R., properly interpreted, applies to people not statements alone.

(Bartley, "The alleged Refutation of Pancritical Rationalism", Proceedings of the Eleventh International Conference on the unity of the Sciences, 1983, Vol.II, page 1158.) Watkins then devised another version taking this in to account, but he gave the argument a psychological twist: he took Bartley to be asserting that people are psychologically open to the criticism of any position.

(Watkins, [1987], page 273.) Contrary to Watkins, it can be argued that Bartley's point is methodological. A sustainable interpretation of Bartley's position is that given any problem and the position that is meant to be a solution to that problem, one can always develop a method for checking whether it is in fact a solution, without falling into inconsistency, vicious circularity, infinite regress, or dogmatism.

Post's argument is similar but uses only (1) and (3). The following is a compressed version of Post's argument, highlighting its general structure. Post argue that every criticism of (3) is a criticism of (1) - because (1) implies (3). But no criticism of (1) is a criticism of (3) because a criticism of (1) would verify (3). Thus every criticism of (3) is a non-criticism of (1); there is no criticism of (3). (Post, [1983].)

One response to both Post and Watkins, due to Miller, is to argue that a Comprehensively Critical Rationalist needs to assert that all positions are open to criticism, but he need not assert that they are open to criticism in every way. C.C.R. is not obliged to hold that every consequence of a criticizable position is itself criticizable. Miller draws an analogy with Popper's requirement that all scientific statements be potentially falsifiable. All empirically falsifiable statements are not made unfalsifiable by having unfalsifiable consequences. To expand on this, I would Admit that a theory may contain metaphysical elements that reduce the theory's overall falsifiability, but our methodology can without difficulty require that such elements be removed.

(iii) It might be thought that in order for C.C.R. to be applied at all it presupposes logic, and so is committed to logic in the sense that it holds logic above criticism. Bartley himself accepts this. I would argue that even if one requires logic to carry through an argument, this does not mean that one presupposes it. One might be trying to show that logic is faulty by actually using it, as one might

try to test a machine by using it. If logic were faulty, which it is not, one might obtain from such a test a good hint as to exactly what rules of logic are leading us into error.

(iv) The question of reinforced dogmatisms I leave for chapter 4, in which I deal with the so-called "immunizing stratagem".

13 Strangely, Gellner seems to repudiate this position in another essay:

"Even in cases when they possess the political power to proscribe rivals, they do not really have the conceptual power to make rival positions unthinkable...It is a most interesting and important trait of many, perhaps of all conceptual systems, that, unlike the artificial Newspeak of Orwell's 1984, they do not succeed in making dissent or heresy unsayable, unconceptualisable". (Ernest Gellner. Spectacles and Predicaments. Cambridge University Press. 1979. page 124.)

14. The British and Irish Communist Organisation argue that the whole IRA campaign would collapse if they were convinced that the incorporation of the six counties into the Republic were impossible by terrorist action.

15 Manning sometimes asserts that ideologies have no descriptive content at all: "Ideological talk, unlike legal talk, does not give us information about the world in which we live. It cannot carry the appropriate descriptive content." (Manning, [1980], page 75.) But sometimes he admits that ideologies contain descriptive content: "Ideologists do make use of the findings of academic disciplines, but they confer on them a political significance which the methodology of those disciplines cannot confer." (Manning, [1976], page 142.)

16 Richard Gregory has given an explanation for our alternating perceptions of such ambiguous figures as the Necker cube and the girl/old hag:

We do not perceive the world merely from the sensory information available at any given time, but rather we use this information to test hypotheses of what lies before us...We see this process of hypotheses testing most clearly in the ambiguous figures...Here the sensory information is constant (the figure may even be stabilized on the retina) and yet the perception changes...as each possible hypothesis comes up for testing. Each is entertained in turn, but none is allowed to stay when no one is better than its rivals. (Gregory, [1966], page 221.)

Gregory fails to generalize this insight to other types of belief:

Why should the perceptual system be so active in seeking alternative solutions, as we see it to be in ambiguous situations? Indeed it seems more active, and more intellectually honest in refusing to stick with one of many possible solutions, than is the cerebral cortex as a whole - if we may judge by the tenacity of irrational belief in politics or religion. (Ibid. page 222.)

His answer is that

The perceptual system has been of biological significance for far longer than the calculating intellect. (Ibid. page 222.)

Here Gregory comes close to seeing that evolution has a tendency to produce organisms that test their beliefs, discarding false ones. But he assumes too quickly that political and religious beliefs escape the logic of evolution. He fails to show why there has been too little time for evolution to produce flexibility in all our beliefs, and he fails to compass an alternative explanation. The explanation may lie in the fact that political and religious beliefs do not have as immediate a relationship to direct empirical testing as our perceptual beliefs. This may necessitate more protracted or indirect argument to change belief, but there is nothing irrational in a long or indirect argument. (By "indirect" I mean an argument that appeals to empirical observation but via other assumptions. This is explained in the chapter on the immunizing stratagem.)

17 Research in psychology and physiology is consistent with this picture. All skills apparently involve scanning and correction of instantaneous belief by feedback mechanisms. It might be said (at least by someone from a geologically stable region) that it is hard to doubt the ground one walks on. But even in walking our brain continually tests its projections as to where the ground is.

18. The Green Movement, for instance, may be based on fearful thinking, the fear being over-population, destruction of the tropical forests etc. Where there is a fear there is a wish and vice versa, so we often find fearful and wishful thinking in the same movement. We may even conjecture that if a movement started by fearful thinking is unable to sustain wishful thinking (that the fearful possibility can be avoided or compensated for), then that movement would tend to collapse. Even movements like the Jehovah's Witnesses, who envision the destruction of the world, look forward to paradise. This would be an instance of instrumental rationality: if the Greens thought catastrophe were inevitable, they would see their propaganda as futile and cease to proselytise.

19 What are the relationships between agreement, criticism, commitment and understanding? It is often assumed that someone committed to a system (a theory, life-style, institution etc) will always have a greater understanding than a critic of the same system. But a critic may have a better understanding. Understanding a system consists in knowing at least some of its implications or aspects. If one makes a sound criticism of a system, this means that one has noticed an implication (or aspect) of the system that the committed have overlooked (assuming they are sincere.)

The general point is that a theory has implications that are infinite. It follows that no psychological state, such as belief, commitment or understanding, can be correlated one-to-one with a theory's meaning or content.

A theory or a contract has implications and ramifications that transcend anyone's understanding. In the case of patents this might be quite clear. It is always very difficult to describe an invention in such a way as to reap the maximum benefit from it. There always may be something that is overlooked. It therefore follows that the patentee can commit himself to something he does not fully understand.

20 This assumption is an elaboration of a much neglected discovery of John Locke's as expressed in his book An Essay Concerning Human Understanding. But there are major disagreements between my assumption and Locke's full position. I make the involuntariness of belief very general, whereas Locke puts many restrictions on it. In Locke's account a belief is involuntary if and only if an opinion is thought highly probable on the basis of the argument and evidence for it, and providing that there is no suspicion of any fallacy in the argument or the possibility of contrary and equally valid proofs yet undiscovered. Locke, [1689], page 425.) Locke allows that in cases in which the evidence for and against a belief is not clear a person may indulge in wishful thinking or suspend his judgement.

On the contrary, even if their explicit avowal may be voluntarily suspended, humans are continually making judgements that are involuntary. The process whereby a person acquires a belief never consists of a period of unbiased examination of evidence followed by a voluntary decision to accept or reject the belief. Rather, one approaches the problem guided by a prejudice. After thinking through the evidence one finds that one has come involuntarily to reject or maintain the prejudice, and that this cannot be revoked by an act of will but only by spontaneous variation in belief or by further argument.

Locke's insight that even in the sphere of so-called divine revelation reason must judge whether a supposed revelation is in fact a revelation is correct but it has more importance for the history of religious thought (and other supposed irrational systems of ideas) than he realized:

In propositions therefore contrary to the clear perception of the agreement or disagreement of any of our ideas it will be in vain to urge them as matters of faith. They cannot move our assent under that or any other title whatsoever. (Ibid. page 426.)

Locke seems close to giving argument a prominent role in the life of religious ideas. But this is not the case: predominant passions may overrule beliefs thought to be highly probable (Ibid. page 439.); belief may be induced by force (Ibid. page 435.); by early education a belief can be made unresponsive to argument (Ibid. page 437.); adherence to principles can render all argument vain against the adherent's beliefs (Ibid. page 438). If that is not a recipe for an absolutely closed system of ideas, it would be hard to think of one that was.

Locke's idea that a belief may be induced by force seems to be inconsistent with his claim that belief is involuntary. It would be stretching the imagination to suppose Locke was thinking of forcibly operating by electrical or chemical means on people's brains to induce beliefs. Let us consider a plausible interpretation of Locke. Someone puts a gun to my head threatening to blow my brains away if I do not start believing that the moon is made of cheese. Now is one to voluntarily believe this absurd proposition? I think we have to say that although force may restrict enquiry, it cannot induce a specific belief.

Others have rejected the idea that belief is voluntary: Quine, [1987], Quidities: A Philosophical Dictionary, page 19. ; Williams, [1973], "Deciding to Believe", in Problems of the Self. ; Elster, [1979], Ulysses and the Sirens, chapter II.3,B ; Winters, [1979], "Willing to believe", Journal of Philosophy, 76, pages 243-56). None of these writers, however, take an evolutionary perspective.

21. The best analogy I have thought of is that of molecules moving completely randomly within the constraints of a bottle. One cannot predict the precise position of any molecule in the bottle, but one can predict that its position will lie within the precisely delineated shape of the bottle is appropriate here to make some methodological comments.

22 My argument does not commit me to the hypothesis that somehow logical rules as such are present in the brain, but only that thought tends to occur in accord with or simulates the following of these rules. As Searle points out in his criticism of Noam Chomsky's theory of generative grammar, the fact - if it be a fact - that all human languages seem to conform to essentially the same set of grammatical rules ("deep structures") does not mean that human brains contain these rules, just as the fact that falling stones obey the laws of gravitation does not mean that stones contain instructions or rules in order to obey these laws. (Searle, [1984], page 51.) Of course, the fact that human brains evolved a tendency to think in accord with the rules of logic made it easier to develop a formal understanding of logic. Formal understanding of logic may well have made its incipient appearance as simple rules of thumb or maxims similar to modern expressions such as "you can not have your cake and eat it." These early developments would have had a feedback effect on brain structures responsible for thinking in accord with logical rules. Those australopethicines that were more logical in their thinking would presumably remember these maxims with greater efficiency and thus gain more from them.

23 Ralph Holloway uses a similar argument to link spoken language and tool-making, arguing that the cognitive processes underlying each are very similar. Both processes involve the sequential elaboration of component parts that, if inserted out of a prescribed order, make nonsenses of the final product. (Columbia University, New York.)

24 Popper's idea is expounded in his book Unended Quest. (Karl Popper. Fontana/Collins. 1976. pages 173 - 178.) Popper there ponders the problem of orthogenic trends, that is: why do so many evolutionary sequences appear to be in the same direction? This situation is contrasted with the concept of a "random walk" (for example, the track made by a man who at every step consults a roulette wheel to determine the direction of his next step.) Popper argues that changes in the organism's genetically permitted but not fixed preferences - because, say, some type of food has disappeared - may change genetically permitted but not fixed behaviour which in turn puts a selection pressure on the organism's genetically determined range of preferences. This change then puts pressure on the organism's genetically determined range of skills, which in its turn puts a selection pressure on the organism's anatomy. The process can be represented by the following schema: $P \rightarrow S \rightarrow A$. The important point is that even though a classic change outside the organism may trigger an evolutionary change, the exact sequence may be significantly controlled by the internal relationships of selection and elimination between the internal structures of preference, skill and anatomy. Popper presents a picture of organisms employing trial and error variation within the scope of their genetic make-up within their evolutionary niches. Their trials may lead them into a new niche. The organism is not a passive subject of evolutionary selection but partly the (unintentional) producer of it.

25. Walsby's book is a sustained attempt to argue that ideologies are irrational. His position rules out the rational selection of ideologies by the masses. The rational Darwinian-like filters (i - v. see Introduction.) I discuss have little room in Walsby's thesis. I am discussing Chakotin and Le Bon because Walsby uses their positions as fundamental premises in his thesis.

26 Although Schumpeter argues that The Wealth of Nations was a synthesis of ideas and not something radically new; he dismisses it as unimportant in the history of economic analysis.

27. Popper had used the term "conventionalist stratagem" in The Logic of Scientific Discovery. First published in Vienna in the autumn of 1934. Cf. Hans Albert. Marktsoziologie und Entscheidungslogik. Neuweid and Berlin: Herman Luchterhand Verlag. 1967. David Miller subsequently informed Popper of note 1 on page 560 of Arther Pap, "Reduction Sentences and Dispositional Concepts", in The Philosophy of Rudolph Carnap. ed. by Paul Arther Schilpp. La Salle, IL. Open Court Publishing Co. 1963. pp. 559-97. In this note Pap anticipates Popper's usage.

28. Cohen points out that Copernicus placed the sun slightly away from the centre of the earth's orbit. It might be preferable to speak of a heliostatic rather than heliocentric system. But this does not affect the boldness of the conjecture. (Bernard Cohen, [1987], The Birth of a New Physics, Penguin, page 44.)

29. Popper admits that this is an "oversimplification for Copernicus, but is almost certainly true of Aristarchus". Realism and the Aim of Science. Presumably, he is thinking of the bi-annual parallax of the stars that should be observable from the Earth if the Earth orbits the sun. This surely counted as the prediction of a new "appearance" and a crucial difference between Copernicus and Ptolemy's theory. It was only because of the great distance to the stars, and therefore a small parallax, that this effect was not observable until 150 years ago with the development of adequate telescopes. One could also add that with Copernicus it became possible to calculate the relative distances of the planets from the Sun, and Copernicus actually made these calculations. But though one could derive new observations from these calculations, Copernicus did not do so, presumably because the technology that would make them possible did not yet exist. Another crucial difference between the Copernican and Ptolemaic theories is that according to the Copernican theory the distances of the planets from the Earth vary and so the apparent size of at least a near planet, such as Venus, should also vary; but no such variation in apparent size was observed by astronomers.

30. From Popper's work it may be inferred that he defines empirical refutation thus: the acknowledgment that an accepted basic statement, b , is inconsistent with either another basic statement, b' , or a universal statement, U , and by inference classifying b' or U as false. A universal statement is a statement applying to every spatio-temporal region (for example, "All swans are white." , which is logically equivalent to "There are no non-white swans.") A basic statement is a singular existential statement describing an observable event at a particular spatio-temporal temporal region (for example, "There is a white Swan at place-time k ", or "There is a black Swan at place-time k). There is also the proviso that the event is a reproducible effect, so that the basic statement can be intersubjectively tested and the odd stray basic statement that contradicts the theory in question can be ignored. This kind of hypothesis is called a falsifying hypothesis. (Popper, [1934], pages 86-87.)

The term "basic" does not imply that basic statements are either (a) untheoretical; or (b) a firm grounding for science. All basic statements are regarded as theory impregnated and tentative conjectures, which may in their turn be subjected to tests and rejected. (Ibid. page 111.)

The term "observable" does not imply a reference to immediate experience, as it might do in the works of other empiricist philosophers such as Carnap or Ayer. It can be defined in terms of the positions and movements of macroscopic objects. (Ibid. page 103.) Indeed, "observation" can be defined quite harmlessly in terms of the positions and movements of macroscopic objects. This is clear when we say that a computer at Jodrell bank is making automatic observations of radio galaxies. It might even be programmed to perform refutations.

31 The predictions concerned the bending of light rays by gravitational fields, elongation of the wavelength of radiation by gravitational fields, and the precession of the perihelion of the planet Mercury. From general relativity it can be predicted that the trajectory of light from a star passing near to the Sun will be bent towards the Sun at a certain angle. It is not strictly true that the bending of light was a radically new prediction, for Johann Georg von Soldner (1776 - 1833) showed that Newton's theory predicts bending by 0.875 seconds of arc for a ray grazing the Sun's edge. But Einstein's theory predicts a figure double this value: 1.75 arcseconds and Eddington's expedition obtained a figure of 1.60 ± 0.31 arcseconds, or 0.91 ± 0.18 times the Einsteinian value. (Figures quoted from Will, [1986], Was Einstein Right? page 77 to 78.) Einstein's prediction, therefore, was closer to the test results. The second prediction is that the frequency of electromagnetic radiation should be reduced by an increase in gravitational potential. Experiments carried out by R Pound and G A Rebka showed that the frequency of gamma radiation on the roof of the physics building at the University of Harvard was higher than gamma radiation from the same source in the basement of the same building. This effect cannot be predicted from Newton's theory; Newton's theory is in fact silent on this question. The third prediction accounted for the anomaly in the precession of the perihelion of Mercury. Joseph Le Verrier discovered that Mercury's elliptical orbit rotates at 574 arcseconds a century. Le Verrier found that the Newtonian affects of the other planets were insufficient to account for all of this precession, leaving 38 arcseconds unaccounted for. (The modern figure is 43 arcseconds.) Einstein's theory gave a much closer prediction than Newton's theory; in fact, it coincides with the modern figure of 43 arcseconds.

32 The idea of information content is derived from the intuitive idea that the more a statement prohibits, the more it tells us about the world. The methodological demand for greater generality and precision may both be reduced to the demand for greater information content. (cf. Popper, [1934], page 121.) Popper defines the term "information content" thus: "the set of statements which are incompatible with the theory." (Popper, Unended Quest, Fontana, 1976, page 26.)

33. This conjecture has often been confused with the purely methodological rule. For instance Thomas Kuhn asserts:

No process yet disclosed by the historical study of scientific development at all resembles the methodological stereotype of falsification by direct comparison with nature." (Structure of scientific Revolutions, page 77.) Later on the next page, Kuhn asserts that his alleged historical examples are ..." counterinstances to a prevalent epistemological theory.

Although this is meant as an allusion to Popper's views, it is a gross misrepresentation. And if it is interpreted as suggesting that Popper's recommended methodology has had no role in the growth of scientific knowledge, then it is also mistaken. Popper may grant that knowledge has grown even when his rules have been neglected (he himself cites Copernicanism as a possible example. (cf. [1983], Realism and the Aim of Science, page xxvi.)

A.F Chalmers expresses a view similar to Kuhn's. Criticizing what he takes to be falsificationism, Chalmers says:

Given any example of a classic scientific theory, whether at the time of its first proposal or at a later date, it is possible to find observational claims that were generally accepted at the time and were considered to be inconsistent with the theory. Nevertheless, those theories were not rejected... (Chalmers. What is this thing Called Science. Open University Press. 2nd Edition. Reprint. 1988. p. 66.)

But there are hundreds of examples of where knowledge has grown through the refutation of a theory. Rutherford's refutation of Thomson's theory of the atom is a particularly striking example. See the list on pages xxvi - xxx of Realism and the Aim of Science.

Popper does not claim that science has always proceeded in the correct methodological way; just that most of the major revolutions in science have been brought about by attempts to follow the falsificationist methodology. But the methodology itself is unaffected by what scientists happen to do. As Popper has made clear as early as [1934], sections 10 & 11, he does not regard methodology as an empirical pursuit, to be tested by the history of science. (Neither is it purely logical, though it may help us to solve some.) Popper's methodology is better characterised as based on metaphysical realism and a situational analysis of a scientist trying to discover a reality behind the appearances.

Miller argues that even if the whole of science tomorrow rejected falsificationism, Popper's theory would remain untouched. After all, being fallible, every scientist could be wrong. So Kuhn is quite wrong to suppose that his historical examples undermine Popper's methodological theory. (Miller, D. "Conjectural Knowledge: Popper's Solution of the Problem of Induction." From Levinson, In Pursuit of Truth.)

Popper's examples drawn from Newton, Einstein, Kepler and Bohr were intended as suggestive case studies. They were arguably good examples of momentous advances in the approximation to truth, and so an analysis of them could be expected to suggest methodological rules. But once distilled, these rules would transcend what these particular scientists did or thought, and could even be used to correct their own faults.

34 In discussions of Kepler's investigation of planetary motion it is generally assumed that Tycho's theory was explicitly applied to our Sun's planets identified independently of the law that planets move in circular orbits. The statement that all planets move in circular orbits, if construed as an essentialist definition, is empty of content; but if "planet" is understood as equivalent to "large, non-gaseous, Sun-orbiting body" then the circular hypothesis loses some of its information content but not all

35. Several writers have misunderstood the demarcation criterion in this way. For example it is often noticed that Freudianism does make some at least truth-like observations on human beings, and even that these observations and explanations are akin to those we accept in everyday explanations of human action. It is then asked why Freudianism should be rejected; if it ought to be rejected so should all our daily explanations of peoples actions - clearly an absurd position. Sabastion Gardiner (of Birkbeck College, London) suggested this at The Annual One-Day Conference on the Philosophy of Sir Karl Popper (26th May, 1990). The answer is that the demarcation criterion does not demand that Freudianism be rejected; only that its advocates try to increase its information content to the point at which it becomes empirically testable. Why settle for less knowledge?

David Bohm (Science, Creativity and Society). has misunderstood Popper's prescription that our theories be capable of and subject to severe criticism. Bohm points to the importance of encouraging the invention of new ideas and cultivating them in a noncritical environment. As an illustration of the benefits of this he points to the success of the method of "brain-storming". In brain-storming a number of people get together and for, say, half an hour will think of as many solutions as they can to a problem without bothering to criticize them. It is only after this open-door policy to ideas that possible solutions are whittled down through criticism. There is nothing in this method that is at odds with the method of bold conjecture and severe criticism or with the demarcation criterion. Brain-storming is simply a psychological tactic in the application of the strategy of bold conjecture and severe criticism. Brainstorming can be understood as taking into account the fact that people are often too reserved about making their ideas public. Conjecture no more rules out brain storming as a tactic in the application of conjecture and refutation than it rules out drinking a strong cup of coffee to stay awake into the early hours to finish a scientific paper.

36 This was the problem that led through the work of Leibniz, Kant and Bosovic to field theory. Cf. section 20 of volume III of Popper's Postscript to the Logic of Scientific Discovery, and The Self and its Brain, [1977], pages 177 - 196.

37 Also in the Hayek Volume are important essays by Hayek, Pierson, and Halm. Mises continued his argument in Socialism (New Haven. Yale University Press. 1951.) pages 135 to 163. and refutes more recent criticisms in his Human Action. (William Hodge and Company Ltd. English edition. 1949. pages 194 to 711.) With regard to "market socialism", see F.A.Hayek's "Socialist Calculation III, The Competitive 'Solution'," in Individualism and the Economic Order.

38 No where does Marx criticise Aristotle. More particularly, Aristotle himself had held that an exchange of goods indicates an exchange of things of equal value.

39 Elster points out that the attempt to reduce skilled labour via the labour expended in education makes the value of all commodities sensitive to changes in the real wage, which, in a Marxist account, is in turn sensitive to the class struggle. Thus the value of commodities would be partly caused by the class struggle. But the purpose of the labour theory of value is to explain not only the price of labour power but also the nature of the class struggle, so this approach would put two horses before the cart. Even if this were allowed there seems to be an insuperable problem in the existence of non-producible skills, including natural skills and skills whose acquisition becomes irreversibly blocked after a certain time, such as language skills. Elster [1987], Roemer (a Marxist) [1988] and Blaug [1982] "Another look at the reduction problem in Marx" in I. Bradley and M. Howard, eds Classical and Marxian Political Economy. pages 188-202. all agree on this point. Critics have also pointed to differences in equilibrium real wages caused, independently of differences of skill, by differences in the unpleasantness of the work required. As Elster point out, Steedman's attempt ([1981], page 88.) to come to terms with this fails to save Marx's theory because far from denying the near-obvious facts he tries to absorb them into the theory, making the value of commodities partly dependent on the subjective disutility of the labour process. My main point in mentioning these attempts to defend Marx is to illustrate how in attempting to defend Marx's system, it is being unwittingly replaced by modified versions much nearer to the marginalist (i.e. now orthodox) position from which most of the attacks have been mounted.

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