Merleau-Ponty, Gibson, and the materiality of meaning *

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At about the time that Maurice Merleau-Ponty was writing "La nature de la Perception,"[1] and preparing the manuscript of *The Structure of Behavior*[2] in the mid 1930s, James J. Gibson was being "shocked" out of his earlier "radical empiricism" through a series of studies concerning visual adaptation.[3]

While Merleau-Ponty was publishing *The Structure of Behavior* and *Phenomenology of Perception*[4] during the 1940s, developing his critique of mainstream psychology into an assertion of the centrality of the *embodiment* of the subject, Gibson was trying to understand how birds, bees, and pilots achieve contact with landing surfaces without crashing. Through this work he began taking the first steps in developing what he would later call his "ecological" approach to perception, insisting on the near irrelevance of experiments in which "perception" was examined in strapped-down subjects, and on the inadequacy of the traditional explanation of vision which demands that "perceiving things depends on first having sensations."[5] He called his own theory a "psychophysical" approach to visual perception in its first incarnation.

Finally, while Merleau-Ponty pursued the ontological implications of his own conclusions about perception to his notions of "reversibility", "chiasm", "flesh", and "interweaving",[6] Gibson accepted ever more fully the implications of his ecological approach, developing his own extraordinarily fruitful parallel notions of "affordances" and the "reciprocity" of perceiver and environment.[7]

The parallel development of the ideas of these two remarkable thinkers is almost as striking as the ideas themselves. While there are numerous differences between the approaches taken by Merleau-Ponty and Gibson,

the basic motivation of the two views, as well as the internal logic, is extraordinarily close. Both were guided throughout their lives by an attempt to overcome the dualism of subject and object, and both devoted considerable attention to their "Gestaltist" predecessors. There can be no doubt but that it is largely because of this common cause that the subsequent development of their ideas is so similar.[8]

It is not my objective merely to demonstrate a similarity between two lines of thought. In what follows, I will try to show that each approach gains considerably from attention to the other. There are numerous ways to begin such a project, each about as arbitrary as the next. For present purposes, I shall take as of central importance the question of the *character* of the perceived world, both in relation to the traditionally opposed mental and material "substances", and in relation to its identification and individuation of things *vis-à-vis* one another and *vis-à-vis* ourselves. This will implicate especially Gibson's "affordances" and Merleau-Ponty's thesis concerning the "materiality of meaning."

Even in the earliest portions of *Structure of Behavior*, Merleau-Ponty takes pains to distance himself from any simplistic distinction between organism and environment. This already becomes clear at the beginning of his attempt to enumerate the many difficulties that inevitably follow from imagining that there is a simple, linear causal chain that runs from environmental "stimulus" to specific neural response. The *main* campaign, early in the book, is to show – as against Pavlovian or Watsonian behaviorism, for example – that "...the fate of an excitation is determined by its relation to the whole of the organic state and to the simultaneous or preceding excitations, and that the relations between the organism and its milieu are not relations of linear causality but of circular causality."[9]

This campaign could be successfully prosecuted simply by showing that organisms respond to environmental "stimuli" *not* simply as a function of excitation of this or that neurally distinct surface, but *also* as a function of the antecedent "state" of the whole neural system. While Merleau-Ponty does wish to make an argument of this kind, he is mindful of his later program even at these early stages of its development. For he insists, even *prior* to the development of the bulk of his case for "holistic" rather than "specific" response to excitation, that what an "environment" *is* is a function of the characteristics of the organism; what the environment "provides" in the way of "stimulus" is a function, in part, of the organism's activity.[10] At the same time, the very *existence* of an organism depends upon "environmental" factors that are, to some extent, most clearly understood as independent of it.

Merleau-Ponty argued further that "responses" should never be under-

stood as mere "effects" of the application of physically described agents to physically described tissues.[11] Such agents *trigger* responses – they are the *occasions* of activity of the organism – but that is a significantly different matter. The difference is shown to be important by examples of situations in which application of the same agent yields different responses, or no noticeable response at all. At least equally important, in determining whether a given response will be triggered by a given physical "stimulus," is the state of the entire organism (or, at least, the state of fairly complex global neural and muscular systems).

More important to our present purposes, however, is the beginning of an argument to the effect that what is *out there* – what we *respond to* – is a function, to an important degree, of *us*.

By 1950, Gibson, too, was working on this presumption.[12] Further, both Merleau-Ponty and Gibson had arrived at a point of view from which the study of perception could not really be separated from the study of behavior. For each, attempts to reduce perception to passive sensation – where sensation was understood as (or as the result of) a linear causal relation between specific external *causes* and specific local neural *effects* – were rejected. But each was equally dissatisfied with "intellectualist" or "nativist" solutions to this problem.

Perception, in short, *was* behavior: more powerfully, perception was an *activity*.[13] Furthermore, each believed that progress in understanding perception could be made only if philosophical bifurcations between perceiver and perceived, between "subject" and "object," could be avoided. This is the key to what followed in the development of both approaches.

In Merleau-Ponty's case, it seems clear that metaphysical/epistemological themes played at least a programmatic role from the very start, even though such themes were largely muted at first.[14] In Gibson's case, the metaphysical/epistemological implications were almost never explicit (except in the course of rehearsing the historical genesis of the modern predicament of perceptual theory), and the explicitly "perceptual/ behavioral" issues were always predominant. Nevertheless, I shall try to show that Gibson's contributions are of vital importance for the deeper projects that engaged Merleau-Ponty, just as much as Merleau-Ponty's work fleshes out to a considerable extent the implications left largely implicit in Gibson's work.

Even in their earliest major works, both Merleau-Ponty and Gibson were driven toward the position that the relation between the "physical" world, the "physiological" world, and the "mental" world was not a relation of derivation or reduction.[15] Different stories are told for different purposes, but the world as experienced, as lived, is not divided between matter and mind, between physical and mental, between sensation and perception,

between raw data and interpretation. All these distinctions might serve some purpose or another, but they are *derivative*: they are the product of an *analysis* of experience that presupposes the wholeness of what is analyzed. In addition, these analytic "parts" derive their significance – their very identity as "individuals" – from the roles they play or the functions they serve in the whole. To imagine either things or minds as existing in some isolated fashion is to mistake abstraction for reality.

The *character* of what is perceived is a function, to a large extent, of our own character. This, anyway, is the lesson for perceptual theory of the work we have been discussing so far. Organisms – humans among them – have perceptual apparatuses that have co-evolved with motor facility, nutritional need, etc., and this evolution has gone on within particular environmental circumstances. The organism, in the meantime, has in the course of its evolution had an impact on the environment. Indeed, "environments" *are* just organism-indexed faces of the world; that is, to speak of an "environment" is to speak of the world just as regards those of its features that are relevant in some way or another to some organism or other. To speak of an "organism", on the other hand, is to speak of something whose character is largely determined by the exigencies and opportunities of specifiable environmental "niches."

It is within this theoretical framework that Gibson developed his notion of "affordances." An affordance, most generally, is any opportunity or danger within the environment of an organism.

> "The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill... I mean by [the noun *affordance*] something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment."[16]

The theory of affordances is a radical departure from existing theories of value and meaning. It begins with a new definition of what value and meaning *are*. The perceiving of an affordance is not a process of perceiving value-free physical objects to which meaning is somehow added in a way that no one has been able to agree upon; it is a process of perceiving a value-rich ecological object.[17]

For Gibson, affordances are what an organism perceives, rather than objects and events as such. The latter come to be defined, when they are defined at all (as in the case of a language-using, conceptualizing organism), as shorthand notations of the former.

The basic idea is something like this: primitive organisms, whether they are destined to mature to less primitive developmental stages or not, react to their environments in terms of opportunities and dangers that are presented

to them. When hungry, an organism explores its environment (to the extent that it is able to do this) and seeks out opportunities for relief of the hunger. When an organism is trying to evade a pursuer, it seeks a hiding place. When weary, an organism seeks a place to rest. In the case of human beings, for example, we may, if we have been standing too long, seek a place to sit. We may not be looking for a chair, in particular; a railing or table-top will do, for most of us. Such things afford sitting.

One of the most interesting things about this way of approaching the study of perception is the extent to which what is perceived is relativized to the organism in question. What affords relief of hunger for an insect will not afford the same thing for a human. What affords hiding from a pursuer for a squirrel will not, in general, afford the same thing for a bear. What affords sitting down for an adult may not afford the same thing for a very young child.

What aspects of an organism's environment offer which affordances is thus very much a function of the organism's needs, abilities, and general characteristics. Indeed, it is likely to change during the course of the organism's life, as the organism undergoes developmental change. Thus affordances are deeply relativized to particular organisms. As is evident in the few examples mentioned above, some affordances may be functions of features that all *physical objects* have in common, and some may be functions of features that all *organisms* have in common; some may be functions of features that only organisms of a given species have in common, and some may vary from individual to individual, or from time to time in a single individual's life. For intelligent species, further, it is not inconsistent with this analysis to argue that some affordances may vary from culture to culture, or from society to society.

But affordances are not arbitrary. The question whether an organism really *can* conceal itself in a particular locale within its environment is something that is an objective fact. Where I can sit is similarly constrained by factors quite independent of me, as well as by factors involving my characteristics.

Thus affordances, while relativized to individual organisms, are not fully "subjective." Indeed, they neatly bridge the distinction between subject and object, being dependent on characteristics of both the organism and the environment.

Gibson, of course, offered his theory of affordances specifically as a device for more adequately understanding visual perception. Merleau-Ponty's exploration of this territory – wherein the notion of "substance" is to be abolished, where an egalitarianism of explanatory mode is proclaimed, and where any reduction of one mode of organization to another is to be renounced – began, at least explicitly, with a similar

motivation: his discussion was keyed in the first instance to issues within perceptual psychology.

Merleau-Ponty, however, saw and pursued the metaphysical/epistemological implications of these matters much farther than did Gibson. His concern with these issues, beginning especially in *Phenomenology of Perception*, yields what appears to be a complete renunciation of the kind of reasoning outlined so far:

> "...the psychologists who practise the description of phenomena are not normally aware of the philosophical implications of their method. They do not see that the return to perceptual experience, in so far as it is a consequential and radical reform, puts out of court all forms of realism, that is to say, all philosophies which leave consciousness and take as their datum one of its results – ... the real sin of intellectualism lies precisely in having taken as its datum the determinate universe of science,... this reproach applies *a fortiori* to psychological thinking, since it places perceptual consciousness in the midst of a ready-made world, and that conclusion assumes the value of a genuine 'phenomenological reduction.'"[18]

Gibson, with all his references to environmental influences on organisms, with his sometimes tacit, sometimes explicit allusion to the theory of natural selection, with his quite modern understanding of his problem as being the explanation of the perceptual behavior of organisms within environments, might seem to be just the sort of psychologist that Merleau-Ponty had in mind.

It was not Gibson, of course, whose particular appeal to the "universe of science" Merleau-Ponty was thinking about. But it may very well be that he had come to worry about his *own* appeal to empirical data in *The Structure of Behavior*. His concern is basically an elaborated version of a traditional problem that arises for thinkers who grapple with "first philosophy," and who are seeking ultimate philosophical *foundations*: which disciplines – which questions – are the most basic ones? It seems plain that scientific theories cannot be foundational because they are themselves sophisticated *products* of a stance that *relies* upon perception (among other things).

Thus what might serve Gibson's *scientific* purposes – and the purposes of the author of (especially) the early sections of *The Structure of Behavior* – might very well not serve the more foundational purposes of the author of *Phenomenology of Perception*. It might suffice, in attempting to offer a useful theory designed specifically to explicate perception, to construct a way of looking at the matter that fits in well with other prevailing theories that impinge upon the field. But if one hopes, instead, to grapple with metaphysical and epistemological issues, the whole array of "prevailing

theory" is just what is supposed to be explained. It cannot serve as justification for itself.

In particular, if the sole justification for adopting a theory of "affordances" were to be the kind of naturalistic reasoning offered so far, then affordances would appear to be no more useful as an aid to understanding fundamental questions than empirical science in general is: it is empirical science that gets justified through its links with perception, not the other way around.

The issue is not whether Gibson was "right" about perception. The question is whether Gibson's ecological approach to perception can be useful to metaphysics/epistemology. Gibson proclaimed himself to be "fascinated" by "the epistemological problem,"[19] and made attempts to try to place his own developing theory in relation to the historical epistemological dialogue in each one of his major works. What is not worked out clearly in any of his work, however, is just *how* the "psychophysical" or "ecological" approaches were supposed to answer philosophical challenges.

What is clearer, though, is that Gibson believed that such answers were at least there to be found in the theory. But the theory was specifically about visual perception, about active perceptual systems amid optical arrays, and about organisms in environments. How was it to be brought to bear on "deeper" issues concerning conscious subjects and worlds?

Gibson's own view seems to have been that, in an important sense, there *are* no deeper issues of this kind.[20] But the philosophical position only truly emerges if one takes his ecological approach as a method that may profitably be used not only in connection with visual perception, but also in other contexts that have a similar problematic structure. The point is not that the scientific study of perception can serve as some sort of foundation for knowledge in general, or for the other sciences; rather, the point is that the ecological approach to perception offers a model that might prove useful wherever subject/object dichotomies seem to have led to trouble. Gibson came to believe that this was the case in the study of visual perception, and it is in this field that he made his contribution. He saw that there are ramifications for metaphysics/epistemology, but did not pursue these very far.

The concept of "affordances" can be similarly useful in contexts other than visual perception. It is clear that Gibson understands them to be the key to *all* modes of perception, and it would be difficult to see why he should be wrong in this if his thesis concerning vision were to be granted. That is, if "affordances" are what are perceived by visual systems (or, to put the matter in a way that some might prefer, if the language of "affordances" is the one most apt for explaining vision), it is hard to see why any of the other modes of perception should be different. Indeed, the spirit of the

"ecological approach" is such that it is hard to see why vision should be singled out for any but analytic purposes. Surely it is extraordinarily rare for visual perception to be isolated in real experience.

Quite apart from whatever success it might have in the study of perception, however, Gibson's ecological approach, with its doctrine of affordances, can be useful in metaphysics/epistemology if it is understood strictly as a method, a mode of explanation, or a way of organizing (or structuring) a problem. It may or may not be useful in the study of visual perception, and it may or may not be useful in the study of first philosophy. Neither depends on the other. In particular, even if it ultimately fails (for whatever empirical or systematic reason) as an explanatory device in perceptual psychology, it might still be profitable for the domain that held Merleau-Ponty's attention. And its usefulness in this latter domain need not depend (although it may derive some kind of support) upon scientific theory. Indeed, it may be recommended by direct inspection of the phenomena.

It was Merleau-Ponty, of course, who was an explorer of the terrain afforded by the *philosophical* (and especially) the *phenomenological* perspective on subject/object problems. This is not to say he was the first. His varying debts to Husserl, to Heidegger, to the Gestalt theorists, to Hegel, and to Marx (to choose a few prominent examples) are clear throughout his work. But it is perhaps Merleau-Ponty, among all other thinkers, who has gone farthest in exploring the philosophical terrain that is suggested by and implicit in Gibson's work.

What is odd, for both Merleau-Ponty and Gibson, is that the mode of expression that they chose as of the most central importance in understanding the relation of people with their world is pre-eminently perceptual. For, after all, what is clear for both thinkers is that perception itself is understandable only as a function of life and activity. What is lived can be discussed in terms of subjective experience or of recalcitrant otherness, but these perspectives both abstract from what is, for both Gibson and Merleau-Ponty, primordial: life. "Consciousness," says Merleau-Ponty, citing Husserl, "is in the first place not a matter of 'I think that' but of 'I can.'"[21] It is not easy to see why *action* or *behavior* should not be primary, rather than perception in particular. Perception, after all, is but a mode of behavior, an aspect of living. Is it not an abstraction from what is really primary, and should it not therefore be displaced from its alleged "primacy"?

For both Gibson and Merleau-Ponty, it seems fair to say, a full understanding of perception would demonstrate that it is really not *different* from living in the world.[22] In Gibson's case, for example, it seems that the very apprehension of affordances in the world is not a "process" that can be

separated from the activity of the organism. And as Merleau-Ponty insists, such activity – like life itself – is necessarily "historical." In the end,

"Space and perception generally represent, at the core of the subject, the fact of his birth, the perpetual contribution of his bodily being, a communication with the world more ancient than thought."[23]

Whatever past experience we have had – whether it is rich or impoverished, long or short – sets us up, as it were, for present and future experience. So do facts about our physical constitution. And so do facts about the social and historical circumstances we find ourselves in. We cannot experience the world in some neutral way. It must be *cast* in some way or another. We do not escape this fact when we appeal to modes of description characteristic of the physical sciences, for these are themselves just modes of portraying the world that have been adopted because of their fruitfulness for one purpose or another. Even to say that what is experienced is "the world" casts it in a role: it is cast as standing apart from us, as an *object* of experience (albeit an as yet undifferentiated object of experience). We are already set apart from the rest of the world to some extent, as observers, in such a formulation. Each such "casting" – relativized to a perspective that is not just a function of spatial position or organic characteristics but to purpose or need – is a "unity of meaning."

How, then, is one to understand the doctrine of the "materiality of meaning" in all of this? Is it an implicit resuscitation, as David Schenck has suggested,[24] of traditional dumb material substance, the I-know-not-what that puzzled Locke, infuriated Berkeley, and has afforded employment to countless philosophers before and since? Hardly.[25] The materiality of meaning consists in the fact that significance is *not* something merely *attributed* to otherwise "neutral" things – or sense data – in the world; rather, significance is already *found* in the world in our most "primitive" encounters with it.[26] In the language of Gibson's affordances, the point would be that what is encountered – or what is perceived – as an affordance is something *in the world*. Giving the name "affordances" to what is encountered highlights their *significance* or *meaning* to the organism, while ruling out all traditional implications to the effect that what is encountered in consciousness is mere "idea." Affordances are subject-oriented without being fully subjective.

No implication should be drawn, though, that there is anything necessarily *false* in the view that we are separated to some degree from the world as observed. What is pointed to in the doctrine of affordances is not some *false* implication of a traditional mode of thinking or speaking about such things, but, rather, the fact that our notion that we *are* separated in this way

is not itself a "datum" of "pure experience"; it is, instead, a consequence of one way of thinking and speaking about such things. This way of speaking about the world may or may not be the best way to talk about the matters before us. It is important that we keep in mind, though, that our understanding of ourselves as separated from the world is an artifact of one broad way of characterizing our situation.

Not only must there be no implication that this picture of our situation is false, though: it must be insisted that *we have no access to the world*, or to our situation in the world, *that would be free of all such perspectival character*. Far from being an obstacle to living in, perceiving, knowing the world, this fact demonstrates *how* access to the world is obtained: in our perspectives on it. There simply can *be* no perspectiveless perspective.[27]

We are not committed, of course, to some static set of presuppositions and expectations that doom us forever to some one way of looking at things. We learn, and we change. What are perceived are affordances, best understood in terms of significance to us. Learning about the opportunities and dangers offered by our environments leads us to change our appreciation of them. We adjust, in other words, the expectations we have of our environments, in light of experience. Even becoming an *expert* in some area is mostly a matter of learning to make increasingly fine discriminations concerning the significances – i.e., the affordances – within that area.[28] How "objects" are individuated in the environment is similarly a job that involves, first and foremost, discrimination of affordances. That parts or aspects of the environment coalesce into "things" and "events" in certain patterns is itself a function of the opportunities and dangers – the affordances – that are presented within the environment; we "parse" our environments as a function of affordances, in other words.

The upshot, then, is that the array of distinct objects experienced by an arbitrary observer cannot be taken as ontologically primitive. Such arrays are too dependent upon characteristics of the observer. Worlds (in the plural) are *made*, to a large extent.[29]

But world's aren't made at whim. Something *independent* of the observer places severe limits upon what can be included in any world "constructed" by an observer. But to refer to *the* world (in the singular) – i.e., whatever it is that places these limits on world-construction and adequate characterization – as some as-yet-undifferentiated environment (as I have been doing thus far) is only partly successful. It can succeed in making sense only up to the point where such reference is itself recognized as one more characterization, useful only for certain purposes, cast from a certain frame of reference. In talking about a single "Ding-an-sich,"[30] or the as-yet-undifferentiated environment – or as "raw" materiality – one tries to speak about the in-principle-unspeakable; one tries to characterize the

uncharacterizable. If this isn't a straight-forward contradiction, it comes perilously close.

The key to this business is to be found in the observation that *we are not mistaken*, when we offer a perspective-bound, observer-relative portrayal of the world, *simply in virtue of the fact that the portrayal is observer-relative*. Perspective does not constitute error in any way. *All* portrayal is observer-relative. Whether a portrayal is mistaken or not will depend, not upon some comparison of it with a supposedly neutral and objective way that the world is in and of itself, but rather upon whether it is *apt*. Judgments of aptness are most likely to be required whenever choices must be made among conflicting portrayals, and the criteria for making such judgments will inevitably involve various dimensions of comparative fruitfulness, for specific purposes (or arrays of purposes), of taking one perspective or another. This comparison, of course, would require a different perspective of its own, which in turn can be evaluated as to its aptness only from some other, etc.[31]

Thus there are no objective things, existing out there somehow utterly independent of their own environments and of us. But, on the other hand, we do not create objects at whim, unconstrained by environments. There *are* affordances; there are real opportunities and dangers for organisms within their environments. These affordances, when recognized, might or might not be subjectively understood as "things" or isolated "events". What matters, though, is that they be perceived. Whatever is perceived is already *a* world. To some extent or another, depending upon the sophistication of the organism, it is already a parsed, individuated, categorized *portrayal* or *version* of what is out there to be interacted with. Some or all of such "parsing" might be done at a physiological level, some or none may be done "cognitively," depending (again) upon the sophistication of the organism. And, all the way up the ladder of abstraction, some may be done by scientists and philosophers attempting to understand perception and the human situation. On this ecological view, representing the combined contributions of Gibson and Merleau-Ponty, even the ecological approach itself is to be embraced as a function of the opportunities it affords.

It might be contended that one could speak meaningfully about the independent existence of some undifferentiated "potential for world-making". That is perfectly fine, for some purposes. But, of course, it is but one more characterization, suitable for some purposes but not so suitable for others. As part of the case *against* talking in this way, it must be noted that this kind of description is really too inchoate to provide much information. There is nothing to *say* about an undifferentiated potential for world-making. To say something about it is, inevitably, to cast it as this or that. And even if one avoids the temptation so to cast it, one has not gone beyond

affordances. To speak of the world as an "undifferentiated potential for world-making" is to make explicit reference to what it affords.

Since we must deal with affordances no matter what we do, it is best for our metaphysical and epistemological purposes – the purposes of first philosophy that were central to Merleau-Ponty's work and were just beneath the surface in the work of Gibson – to focus our attention just this side of the inchoate potential that might be offered as a characterization of *the* world that underlies the multiple worlds fashioned by our varying modes of portrayal.

Focusing on potential for *organisms*, in particular, directs attention to facts about living that not only make the building of worlds possible, but inevitable. In the end, it is largely because organisms need to *suppress* information that worlds are cast.[32] This fact accounts at the same time for both the differences and the similarities of the worlds that are made from different perspectives. Organisms need to suppress information because they need to act, and they need to be able to perceive the opportunities for action in their environment without having to sort through limitless arrays of insignificant data. What is significant, in turn, depends as much upon features of the organism in question as it does upon features of the organism's environment.

The elements that determine how any organism's world will be structured are the opportunities and dangers to that organism that are present in the world; that is, each organism's world – including the variety of worlds constructed for varying purposes by especially versatile organisms like ourselves – is determined by the affordances that are present within the environment. The Gibsonian notion of affordances encapsulates in a single idea both the necessarily perspectival character and the primitive meaningfulness of the world, and thus makes its contribution to the program that is most closely associated with Merleau-Ponty.

Notes

1. This early article can be found in T. F. Geraets, ed., *Vers une nouvelle philosophie transcendentale* (The Hague: Martinus Nijhoff, 1971), pp. 188–199. It was originally written in 1934.
2. *The Structure of Behavior*, trans. Alden L. Fisher (Boston: Beacon Press, 1963), was published in French as *La Structure du Comportement* in 1942. The manuscript appears to have been complete, however, by 1938.
3. An especially interesting source for tracing the early development of Gibson's ideas is his own account in Edwin G. Boring and Gardner Lindzey, eds., *A History of Psychology in Autobiography, Vol. V* (New York: Appleton-Century-Crofts, 1967), pp. 125–143. These autobiographical notes make it clear that the influence of Kurt Koffka, who was a colleague of Gibson's at

Smith College from 1928 to 1941, was substantial. Other fruitful sources are Edward S. Reed, *James J. Gibson and the Psychology of Perception* (New Haven: Yale University Press, 1988), and Thomas J. Lombardo, *The Reciprocity of Perceiver and Environment: The Evolution of James J. Gibson's Ecological Psychology* (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1987). Both authors trace Gibson's development in detail through his entire career. Especially relevant to Gibson's early dissatisfaction with perceptual "empiricism" on experimental grounds are his "Adaptation, After-Effect, and Contrast in the Perception of Curved Lines," *Journal of Experimental Psychology* (1933): 1–31; "Adaptation with Negative After-Effect," *Psychological Review* (1937): 222–244; "Adaptation, After-Effect, and Contrast in the Perception of Tilted Lines. II. Simultaneous Contrast and the Areal Restriction of the After-Effect," *Journal of Experimental Psychology* (1937): 553–569; and, with M. Radner, "Adaptation, After-Effect, and Contrast in the Perception of Tilted Lines. I. Quantitative Studies," *Journal of Experimental Psychology* (1937): 453–467.
4. *Phenomenology of Perception*, trans. Colin Smith (London: Routledge & Kegan Paul, 1962), was originally published as *Phenomenologie de la Perception* in 1945.
5. *The Perception of the Visual World* (Boston: Houghton Mifflin, 1950), p. 12. Gibson began to develop his "ecological optics" in about 1954, and this work eventually led to *The Senses Considered as Perceptual Systems* (Boston: Houghton Mifflin, 1966).
6. In the posthumously collected and published work, *The Visible and the Invisible* (Evanston: Northwestern University Press, 1968), originally published in 1964 as *Le Visible et l'invisible*.
7. *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979).
8. The influence of Marxian social theory on both men should not be ignored either. See Gibson's autobiographical essay for indications of such an influence on him (*A History of Psychology in Autobiography*, op. cit., pp. 134–135). I have not yet encountered any evidence as to substantial direct influence of the work of Merleau-Ponty on Gibson, or of Gibson on Merleau-Ponty. In his autobiographical article, however, Gibson offers the following intriguing comment: "There are other psychologists who have thought about perception almost as I do, but not quite. The one with whom in recent years I have been in strikingly near agreement is Albert Michotte, of Louvain... It is a notable lesson in the convergence of experimental science that such a man as he and such a one as I, from totally different backgrounds, should have found ourselves agreeing so thoroughly and so delightedly – he, a student of Cardinal Mercier and I of the materialist Holt; he, a believer and phenomenologist and I a skeptic and behaviorist; he, a member of the conservative Belgian nobility, a prince of the Catholic Church, and I a Midwestern Sunday-school radical with an underlying suspicion of popery. We got the same results. This is what counts. It makes one believe in the possibility of getting at the truth" (*A History of Psychology in Autobiography*, op. cit., pp. 142–143). There are not many investigations of the similarity between Merleau-Ponty and Gibson, although everyone who has been exposed to the work of both seems to find the resemblance quite remarkable. Philip A. Glotzbach and Harry Heft, "Ecological and Phenomenological Contributions to the Psychology of

Perception," in *Noûs*, (1982): 108–121, accompanied by Marjorie Grene's enticing abstract of comments, is suggestive only; Mark McConville, in "The Phenomenological Approach to Perception," in *Existential-Phenomenological Alternatives for Psychology*, R. Valle and M. King, eds. (New York: Oxford University Press, 1978), pp. 94–118, discusses both Gibson and Merleau-Ponty in detail, but underestimates the similarity of their approaches. There exists also an extraordinarily useful unpublished manuscript by David Scarrow, "Gibson's Ecological Optics as Phenomenology and as Psychology," which compares Gibson and Merleau-Ponty in illuminating detail. It seems to me, in addition, that some of Scarrow's criticisms of Gibson, at the end of his paper, are quite apt. Beyond this there are comments here and there, as in Abner Shimony, "Perception from an Evolutionary Point of View," *The Journal of Philosophy* (1971): 571–583. Hubert Dreyfus recalls that on the occasion of a meeting organized by Marjorie Grene in Berkeley around 1970, Gibson had commented that he thought of himself as working out the same insights as Merleau-Ponty (personal correspondence with Dreyfus, 2 January 1991). Grene herself has no recollection of this (telephone conversation with Grene, 12 September 1991). Edward Reed is confident that Gibson did *not* know about Merleau-Ponty's work in any serious way until about that same time when, at the urging of David DeVilliers, he was persuaded to read some of *Phenomenology of Perception*. Reed reports that Gibson "resonated" to what he read, but he doubts that Gibson was really *influenced* by it (personal correspondence with Reed, 18 January 1991).

9. *Structure*, p. 15.

10. See *Structure*, p. 13.

11. See *Structure*, p. 31.

12. For Gibson's view of the very idea of physical *space*, see *Perception of the Visual World*, p. 60. For a strikingly similar attitude toward space, see Merleau-Ponty, *Phenomenology of Perception*, pp. 137–139 and 146.

13. The key role this idea plays in Gibson's development is well traced in Edward S. Reed, "James J. Gibson's Revolution in Perceptual Psychology: A Case Study of the Transformation of Scientific Ideas," in *Studies in the History of the Philosophy of Science* (1986): 65–98.

14. At the end, in his posthumously published "Working Notes," Merleau-Ponty *defines* his ontological project as "... the elaboration of the notions that have to replace that of transcendental subjectivity, those of subject, object, meaning ... the definition of philosophy would involve an elucidation of philosophical expression itself ... as the science of pre-science, as the expression of what is before expression *and sustains it from behind* ..." *The Visible and the Invisible*, p. 167. For an extremely interesting examination of the development of Merleau-Ponty's ontological thought from *Structure of Behavior* to *The Visible and the Invisible*, see Marjorie Grene, "Merleau-Ponty and the Renewal of Ontology," *Review of Metaphysics* (1976): 605–625.

15. See Merleau-Ponty, *Structure*, p. 91. and pp. 133–134; and see Gibson, *The Senses Considered as Perceptual Systems*, p. 267.

16. Gibson, *The Ecological Approach to Visual Perception*, p. 127. The *general* term "affordance" – as distinct from the term as used to designate particular affordances – bears a strong resemblance to what Merleau-Ponty refers to in his later work as "the flesh": "The flesh ... is not matter, is not mind, is not substance ... [it is] a sort of incarnate principle that brings a style of being

wherever there is a fragment of being ... the inauguration of the *where* and the *when*, the possibility and exigency for the fact; in a word: facticity, what makes the fact be a fact. And, at the same time, what makes the facts have meaning ..." *The Visible and the Invisible*, pp. 139–140.

17. *Ecological Approach*, p. 140.

18. Merleau-Ponty, *Phenomenology of Perception*, p. 47.

19. See *History of Psychology in Autobiography*, op. cit., p. 132.

20. See also Merleau-Ponty, *Phenomenology of Perception*, pp. 397–398, where he specifically addresses the idea that there could be "another being beyond apparent being."

21. *Phenomenology*, p. 137.

22. Samuel B. Mallin observes that, for Merleau-Ponty, "The perceptual world is not distinct from the motor-practical... Our perceptual structures ... [are] motor intentions and, hence, ... have an intrinsic connection to the body's capacities for gross or wide-ranging motor behavior." See Mallin, *Merleau-Ponty's Philosophy* (New Haven: Yale University Press, 1979), p. 45.

23. *Phenomenology*, p. 254.

24. "Meaning and/or Materiality: Merleau-Ponty's Notions of Structure," *Journal of the British Society for Phenomenology* (1984): 34–50.

25. For the argument that supports this reaction to Schenck's claim, see John T. Sanders, "Merleau-Ponty on Meaning, Materiality, and Structure," forthcoming in *The Journal of the British Society for Phenomenology*.

26. In Merleau-Ponty's later work, this line of thought is picked up in connection with the notion of "the flesh": "We must not think the flesh starting from substances, from body and spirit – for then it would be the union of contradictories – but we must think of it ... as an element, as the concrete emblem of a general manner of being," *The Visible and the Invisible*, p. 147.

27. Such a formulation hints at the sense in which this is a logical matter, rather than strictly a matter of the mechanics of organisms in environments. For discussion of problems in the study of perception that may seem to be mechanical but are, in the end, logical, see Floyd Ratliff, "Illusions in Man and His Instruments," *Journal of Philosophy* (1971): 591–597, and *Mach Bands: Quantitative Studies on Neural Networks of the Retina* (San Francisco: Holden-Day, 1965). For a substantially different approach to a similar conclusion, see Patrick Grim, "There Is No Set of All Truths," *Analysis* (1984): 206–208.

28. Jean Piaget's work suggests that child development is best understood in these terms, as well. Learning is not so much a matter of adding new data to the pile that had been acquired earlier, but more like a matter of *altering* or *transforming* one's understanding of the world in light of experience. We refine and replace old conceptions with new ones that are better detailed, better at discriminating significances, better at suppressing insignificant detail. See especially *The Origins of Intelligence in Children* (New York: Basic Books, 1952). For an account of expertise that appears to be consistent with the "affordance" account offered in the text, see Hubert L. Dreyfus and Stuart E. Dreyfus, *Mind Over Machine* (New York: The Free Press, 1986), especially pp. 30–35.

29. For an alternative path leading to a similar conclusion, see Nelson Goodman, *Ways of Worldmaking* (Indianapolis: Hackett, 1978).

30. Or, what comes to the same thing in Berkeley, "... one simple perfect power."

See Berkeley's "Philosophical Commentaries," 282; in A.A. Luce and T. E. Jessop, eds., *The Works of George Berkeley Bishop of Cloyne* (London: Thomas Nelson and Sons, 1964), Vol. I, p. 35.

31. There need be nothing "regressive," let alone *infinitely* regressive, about this. The situation is more like that of a dictionary for any natural language: no words are primitive, all are defined in terms of *other* words which are, in turn, themselves defined. Just as the entire dictionary ultimately rests on usage (a matter external to the norms offered by the dictionary itself), so the question of adequacy or aptness of a portrayal of the world rests, finally, on practical efficiency in use.

32. For suggestive examples along these lines see Shimony, "Perception from an Evolutionary Point of View," op. cit.