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Intuition, hypothesis, and reality.

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INTUITION, HYPOTHESIS, AND REALITY

A Dissertation Presented

by

DAVID K. JOHNSON

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

February 1991

Department of Philosophy

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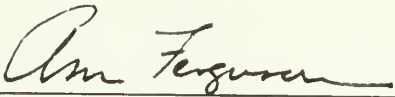
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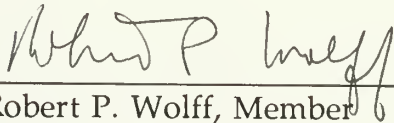
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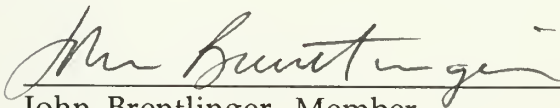
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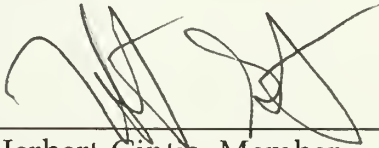
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ABSTRACT

INTUITION, HYPOTHESIS, AND REALITY

FEBRUARY, 1991

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Ph.D., UNIVERSITY OF MASSACHUSETTS

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Realism about the external, natural world is an overarching empirical hypothesis. The method of hypothetical realism rejects as an excessive concession to the skeptic these two assumptions of constructivist intuitionism: first, that everything real must be exhaustively inspectable; and second, that our beliefs are to be justified to the point of certainty. We prefer to say that nothing is ever known directly; that all of our contact with the world is mediated by thoughts, words, and percepts construed as signs having referents distinct from themselves. We organize these signs into meaningful and possibly true hypotheses as we speculate — in practice, science and metaphysics — about a world we have not made.

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CHAPTER 1

HYPOTHESIS AND REALISM

1.1 Introduction

Realism about the external world is an overarching empirical hypothesis. In our efforts to locate ourselves within a natural and social environment, responsible speculation, in the form of testable hypotheses, is the ineliminable risk that falls to thought as it directs actions meant to secure us there. Those actions will consist of behaviors required, first of all, for formulating and testing plans and maps which might direct our successful accommodations to a world that pre-dates us.

We can specify the relation of these maps and plans to reflection or inquiry as follows. Every behavior-directing plan will have these four aspects: (1) we prescribe a sequence of behaviors; (2) we rely on, or devise, a map representing the terrain where these behaviors are to be enacted, as well as the instrumental relations tolerated there (as we might consider walking through doorways but not walls¹); (3) we evaluate the plan as we place it within a hierarchy of values and ends; and (4) we situate these behaviors,

¹ These seemingly far-fetched examples are common in the literature. Here, for example, is von Glasersfeld: "I can no more walk through the desk in front of me than I can argue that black is white at the same time. What constrains me, however, is not quite the same.... That the desk constitutes an obstacle to my physical movement is due to the particular distinctions my sensory system enables me to make and to the particular way in which I have come to coordinate them" (von Glasersfeld:1989d:6).

plans, and values all within a more or less integrated account of the world and our place there.²

These four are the mutually reinforcing conditions for success in our dealings with a physical and social world, the greater part of which we have not made. These maps and plans are commonplace: a hungry person hoping to secure for herself some food will begin by specifying a succession of behaviors to that end. Her plan will include a more or less detailed map of the proper location for performing those behaviors: she speculates that some places have food, while others do not. Her hunger helps to define the utility and value of her plan, which is all the more urgent as time passes and that need is not satisfied. Her plan and map presuppose a more general theory of the larger world of which she and they are a part: enacting this plan while relying on this map, she supposes, will help to secure her within the world by satisfying her need.

Noting the practical control that we often seem to achieve, one question in particular — one which divides realists off from anti-realists — presses to the fore: Are we justified in the belief that our maps and plans have helped us find our way in a world whose character and existence are independent of the things we might say or think of it? Not if we must justify those beliefs to the point of certainty, or if the real is limited to that which is directly inspectable:

The skeptics, who 2500 years ago were the first to point out the flaw in this fallacious cartography, wondered how such comparison could be made, since "reality" is accessible only

² These distinctions are Weissman's (1989b:18).

through maps. Moreover, the question remains, who owns the proper map?³

Yet the method of hypothesis declares that our maps and plans, as linguistic and conceptual artifacts, are instruments for the representation of extra-linguistic matters of fact. Contemporary pragmatists who claim that knowledge is no more than effective action⁴ are likely to neglect the second condition for success listed above in favor of value-bestowing or "sense-giving interpretations."⁵ Success, they say, cannot serve as evidence for the representational accuracy of our maps, since truth and meaning are either "internal" to the map,⁶ or "there is no such thing as the world for anything to conform or fail to conform to."⁷

I suppose that a truly pragmatic realism will owe nothing to these "internal" varieties.⁸ Realism re-establishes its traditional connection to a generally pragmatic outlook in this way: all of inquiry and reflection begins with, and receives its confirmation from, practice. We should persist in the "naive" conviction that the success and confirmation of our plans and maps

³ von Foerster:1987:x. This dissertation represents an extended comment on just that sort of criticism of realism.

⁴ Maturana and Varela:1988:29-30; see also chapter III below.

⁵ Weissman:1989b:18.

⁶ Carnap:1966:219.

⁷ Goodman:1972:31; see also section 2.4.3.2 below.

⁸ Putnam:1987; see also section 4.2.1.1 below.

speaks to more than the bare fact that they allow us to "cope."⁹ Indeed, as common sense would rightly have it:

Errant speculation is quickly exposed: The instrumental relations specified by a plan do not obtain; or we are frustrated, wet, and hungry when the map for applying it misdirects us. Behavior is successful only as our maps and plans look beyond personal concerns to things in themselves. It is the truth of these maps and plans, and not only our need and convictions, whether personally or socially founded, that explains the success of our thought-directed behavior.¹⁰

Still, the modern pragmatist may wonder: How do we determine the truth of our maps or representations of the world? Is it not the case that we "cut up the world"¹¹ into the objects and relations of our maps as we chose one or another conceptual scheme, framework or theory?¹² An adequate response to these anti-realist concerns, which I hope this dissertation as a whole represents, requires that our realism withdraw in part from its often

⁹ In Contrast, Rorty claims that "modern science does not enable us to cope because it corresponds, it just enables us to cope" (Rorty:1981:xvii).

¹⁰ Weissman:1989b:28-9; emphasis added.

¹¹ A common assumption of all varieties of "internal" realism appears to be that we cannot express in language what is extra-linguistically the case. It follows, we are told, that truth cannot consist in a correspondence or mapping relation between a sentence and a part of the world, since the latter, either as a product of the use of language or as a "completely unspecified and unspecifiable" thing-in-itself (Rorty:1981:14), is simply not available to language. Two problems emerge. First, the rejection of correspondence as the nature of truth usually requires defending an extreme, possibly incomprehensible, form of relativism. In that case, truth becomes a redundant notion, or warranted assertability, "or even just as socially respectable assertability — what our peers will...let us get away with saying" (Millikan:1984:7). Second, beneath the claim about language there lies a "repressed" claim that conflicts with the relativistic strictures of the first. That claim is this: "that we can know what the status of language — its epistemic, its ontological status — in fact is; that we know what is the case about language; that we know what the truth of the matter is" (Pols:1982:89).

¹² Putnam:1981:49-53.

naive beginnings, as we admit from the start that there can be no unmediated or direct access to the world.

1.2 Realism and Hypothesis: Five Guiding Principles

The hypothetical realism I defend sets out from five basic assumptions.¹³ I will only briefly outline these essential features of the method of hypothesis here, characterizing them as assumptions, and saving for subsequent chapters — following an exposition of the one major alternative to this method (chapter II and IV) and an extended example of it (chapter III) — a more detailed defense of those basic principles (chapter V).

(1) Most generally, I assume that philosophy's fundamental role is a theoretical one. More exactly, philosophy is a kind of narrative: we philosophize as we recommend and defend a conceptual network designed to tell a coherent story about the world. While knowledge of that world is our goal, inquiry to justify our beliefs remains our instrument, as these stories represent the extensions of our first successful accommodations to reality. The utility of metaphysics remains obscure until we agree that, like the hard discoveries of practice and science, it functions to tell us "what is and is not possible to do and be."¹⁴ I think it likely that infants are capable of telling themselves private stories of the most spartan kind, having their source in prelinguistic and genetically programmed sorting-behavior.¹⁵ There will be no identifiable point at which those stories become scientific or philosophical; rather, our accounts evolve in complexity as we move from our first

¹³ The main outlines of my defense and characterization of realism owe much to the work of David Weissman, especially Weissman:1989a; 1989b; 1987a; 1977.

¹⁴ Weissman:1989b:203.

¹⁵ See Russman:1987:12; Weissman:1989b:198.

behavior-directing plans¹⁶ through science to the speculations of philosophy. At the furthest reaches of thought's generality, these are the stories of metaphysics, where we have extended, by the methods of abstraction and variation, our information about our place in nature, its form, and conditions. But, even here, theory's bond to our original maps and plans is undeniable, as these stories have their more remote source in our first, successful abductive inferences and generalizations about the world and our place within it:

Science and metaphysics are overlapping orders of reflection coming after the maps and plans of ordinary practice. Indeed, much of the evidence relevant to our metaphysical hypotheses will have been available at the moment of our first encounters with the world.... [F]or we have no detailed, a priori knowledge of the world. We can only speculate about its character, using whatever hypotheses we have for finding our way, here in the middle of things. This tentative, speculative attitude infuses all of our reality-testing behaviors.¹⁷

(2) Despite the apparent diversity of philosophical methods for investigating the nature of things, I would suggest, along with Engels¹⁸ and Weissman, that our choice of methods reduces to these two: we inspect the

¹⁶ I assume those first reflections, arising out of the urgencies of practical life, often involve the use of abductive (or "retroductive") inference. Those inferences, well-known to science and practice, have the following form: (1) Some unexplained phenomenon P is observed; (2) P would be explicable as a matter of course if H were true; hence (3) there is reason to think that H is true. (Kordig:1971:12). Thought is speculative in this way when we infer from something thought or observed to its conditions: "Seeing smoke, we think of fire. Considering mind's various ways of behaving, we ask if these might be the activities of an exclusively physical system.... [And in all practical thinking] we infer from a result desired to the sequence of behaviors required for achieving it" (Weissman:1989b:27).

¹⁷ Weissman:1989b:118–131.

¹⁸ Engels' "two great camps thesis" suggests that the history of philosophical thought centers on a series of disputes between materialism and idealism.

things set before us when they have been given to or "constructed"¹⁹ by our minds, so that every difference creditable to the world has its source in thought or language; or we use thoughts, words and percepts as signs, creating thereby the plans and hypotheses representing possible states of affairs and locating us in a world we have not made.²⁰ I shall follow Weissman and refer to the first of these two as the method of intuitionism.²¹ It is, I suppose, the only viable alternative to the realism I defend, and will be the focus of later chapters, especially II and IV.

(3) I assume that most of the thinking, talking and perceiving we do is not any kind of making or constructing.²² The character and existence of the world are independent of the fact that we may talk or think about it:

Some thinking and talking is a kind of making, as we invent the laws or encourage the expectations which distinguish our culture. All the rest is only a way of talking or thinking about matters which are discovered, not made. Perception too is not a way of making the world. It does alter the world, as seeing an apple creates in us the color it is seen as having. But the apple

¹⁹ In their efforts to secure every claim to knowledge against the skeptical arguments, intuitionism moves ever closer to a "constructivist a priorism" where mind has created every intelligible difference within the matters it thinks or describes (Weissman:1987a:104). We shall see (chapter IV) that all versions of constructivism have, like the realism I defend, an instrumental, pragmatic expression. These constructivist appropriations of pragmatism are not, however, theories of things and relations used (like a map or tool) in our dealings with an extra-linguistic or extra-mental world. While hypothetical realism relies on practice and inquiry as a test of truth, constructivist pragmatics sees language or thought as the mind's principle instruments in creating a thinkable experience: "mind," individually or corporately, creates a thinkable because coherent experience meant to satisfy our interests and needs. This worldmaking activity (section 3.6) holds out clear moral consequences: we are the sole authors of the intelligible world — a world, moreover, that is designed to satisfy our particular interests and needs.

²⁰ Weissman:1989b:1.

²¹ Weissman:1987a; 1989b.

²² See Watzlawick:1984 for a book-length defense of the idea that every aspect of reality is a human "construction."

was already determinate in every respect. It may also be true, as quantum physics implies, that some other properties discovered in the world result from the ways that we affect it, as when measuring for velocity or position. But here too, the world is determinate in every regard. It is either qualified or not, at every moment and place, with each of the infinity of possible properties.²³

It is important to note that the method of hypothesis, as I understand it, amounts to more than just a negative response to all forms of constructivism. Constructivists ought to be (and often are, if only implicitly) pragmatic realists, placing due emphasis on the (Piagetian) notions of accommodation and abstraction.²⁴ Yet the above remarks are designed to suggest that there is no need to invoke constructivism of a radical variety, with its anti-realist elimination of the observer-independent natural world, in order to account for our knowledge:

Those who do...worry that our knowledge of the world is precarious unless we bridge the gap between mind and the world by displacing all of thinkable form from the world into mind.²⁵

We do actively discover and manipulate the world to serve our purposes, preferring those maps and plans that seem "viable" over those that fail us.²⁶ Yet the realist is right to emphasize that this is mostly a process of practical and scientific discovery, not invention or creation in the "radical"

²³ Weissman:1987a:1.

²⁴ See Piaget:1967, and von Glasersfeld, especially 1989c and 1987. Indeed, all except for the last of the following "basic principles" of von Glasersfeld's "radical constructivism" are entirely consistent with our pragmatic realism: (a) knowledge is not passively received either through the senses or by way of communication; (b) knowledge is actively built up by the cognizing subject; (c) the function of cognition is adaptive (in the biological sense of the term); and (d) cognition serves the subject's organization of the experiential world, not the discovery of an objective reality (von Glasersfeld:1988a:2). I criticize (d) in section 4.2.1.3 below.

²⁵ Weissman:1989b:4.

²⁶ von Glasersfeld:1989c:124.

sense of those words. As I will argue in more detail below (chapter V), we discover the differentiations and orders of a world that is determinate in every respect before our interventions take place. That is not to say, of course, that the world remains the same after those interventions, for there is something very creative (and, therefore, potentially destructive) about human behavior. But that activity is not god-like: our creations are limited to the material and cultural artifacts, like chairs, governments, and unemployment, that are still essentially dependent on a world of naturally existing things — including humans — that we have in no sense made or constructed.

(4) From the assumption that humans are natural creatures and a product of evolution, it follows that mind — as essentially the activities of a physical system — is located, naturalistically, among the things we know and discover. It follows too that knowing must be some kind of natural relation that sentient creatures bear to their world. In particular,

...knowing must be something that man has been doing all along....and that has adapted him to that world, by contrast with which not knowing, being ignorant, is something objectively different and less advantageous.²⁷

An important implication of this naturalistic approach to epistemological and ontological questions is that realist metaphysics is last or late in the order of inquiry: we are to locate ourselves in thought "as we are already located in being."²⁸ This is apparently the impulse behind Devitt's "naturalistic Maxim" (#3): settle the realism issue before any epistemic or

²⁷ Millikan:1984:7.

²⁸ Weissman:1989b:17; 203–4.

semantic issue.²⁹ If we interpret him as saying that our life-long inferences to mind-independent states of affairs can serve as prior evidence for the claims of metaphysical realism, then I think he is right. The emphasis here is on just the reverse implied by the "linguistic turn" in philosophy that claims to have discovered a "theory of meaning" underlying metaphysics.³⁰ Those who would neglect Devitt's maxim, in other words, are attempting to derive a theory of the world — most often an anti-realist one³¹ — from a theory of language or understanding. I take these latter theories to be ordinary scientific theories; they can have no special role in determining our comprehensive view of the world.

(5) Lastly, I will assume that nothing is ever known directly. Rather, all of our contact with the world is mediated by thoughts, words, and percepts construed as signs — signs, moreover, having referents distinct from themselves. They are the natural signs of perception and the conventional ones of thought and language. Signs serve as the "vehicles of our thinking," while all of the things that they might signify (or represent) remain the proper objects of thought.³² We organize these signs into meaningful hypotheses as we speculate — in practice, science and metaphysics — about a world we have not made. How does a hypothesis come to be meaningful? A complete answer to that question requires a detailed specification of the

²⁹ Devitt:1984:3–4.

³⁰ Dummett:1978:xi.

³¹ One example is Putnam's a prioristic emphasis on the necessary "internal" determination of all reference relations between the sentences of a theory and pieces of the world (Putnam:1987:23–32). See also Devitt:1984:Ch11; and section 4.2.1.1 below.

³² Weissman:1989b:160; see also Millikan:1984:Part II.

ontology of our chosen method (chapter V), as a domain consisting of signs, actuals, and possibles to which our hypotheses apply. A shorter answer is this: Hypotheses are meaningful, hence capable of being true or false, because of signifying possible states of affairs. Hypotheses are true when the possibilities signified are actual.

Each of us formulates a map having two tiers, one for the world of possibles, the other for the actual world. The first is a tier of meanings; the other is a tier of truths. Meanings are the objects intended by our thoughts and words. These objects, the senses of our worlds, are the more or less complex differences and relations existing eternally as possibilities. The truths are hypotheses. They signify those possibilities that do obtain. Accordingly, their objects are the actual states of affairs comprising our world.³³

The speculative nature of these reality-testing behaviors is undeniable: our every factual claim and perceptual judgement is a hypothesis addressing a possible state of affairs. "She is hungry" as much as "That rose is red" are speculative in this way, as each assertion involves a factual claim about a possible state of affairs that may or may not obtain. Yet the hypothetical method amounts to more than a mere fallibilistic attitude. That would be the case were we to limit our analysis to the simple recognition that our every claim about contingencies is open to error, as we could be wrong about a person's physical state, attitude or very existence. Our problem, in constructing the behavior-directing maps and plans of practice and their more refined counterparts in science and metaphysics, is the more complex one of formulating responsible, because testable, hypotheses, where a testable hypothesis is one whose truth would make an observable difference — specifically, the difference signified by the hypothesis:

³³ Weissman:1989b:199.

Observability is the measure of instantiation, and of truth, although we must avoid the easy confusion of sensory affects in us with the possibilities instantiated, i.e., the actual things observed. Sensory data are the evidence of these things, and the evidence for our hypotheses about them.³⁴

Certainly much more needs to be said about the testing of hypotheses. In particular, we will have to address the notorious "overdetermination" of evidence by theory, where our claims about the world are forever exceeding the possible evidence for them. We can suggest that some reactions to this phenomenon are excessive, as the idea that we might all be "brains in vats" seems to be. But in the end, lacking all access to a detailed, a priori illumination of the world — or even of ourselves and our place there — we should admit the possibility that we could be wrong about anything.

1.3 The Two Dimensions of Realism

It will be helpful to identify the two traditional dimensions of realist claims about the external world: (1) the existence dimension and (2) the independence dimension.³⁵ The former (the existence of the common, everyday physical objects of experience like cats and mats, for example) is not usually doubted by the philosophical opponents of realists.³⁶ It is this second,

³⁴ Ibid:110.

³⁵ I will be concerned with the nature of our commitment to the existence of things, not with the nature of existence itself. Existence is, I suppose, a basic and intuitively clear notion that stands in no need of explanation. Moreover, "attempts to offer an explanation have either lapsed into triviality or changed the question to an epistemic one (about how we tell what exists) without noticing" (Devitt:1984:43). Obviously, for the realist that commitment entails a respect for the irreducible reality and essentially mind-independent nature of the external world (see Ruben:1977:97).

³⁶ Even Berkeley and Hume accept certain statements about the existence of physical objects. However, since they also claim that such statements are reducible to statements about the contents of the mind that thinks them (though not necessarily to statements about mental activity or thought, see Ruben:1977:20), they would not accept traditional realist claims about the mind-independent existence of those objects.

independence dimension of traditional realist claims that will serve as the main point of dispute between realists and idealists. While realists hold that the entities mentioned above exist independently of what we might think or say of them, idealists maintain that these entities are either made up of ideas, sense data, or, most generally, "depend for their existence and nature on what we believe or can discover."³⁷

Nothing in what I have said should give comfort to those, like Putnam, who claim that metaphysical realism is an incoherent doctrine that requires the impossible task of comparing our representations with an unconceptualized reality.³⁸ That is to say that, taken together, the two dimensions of traditional realist claims do not entail that the objectivity of the world makes it an unknowable "world-in-itself;" or even that we are incapable of having true or false beliefs about it. Indeed, a naturalistic realism like mine requires that we reject this view of the world as a noumenal realm forever beyond our ken.³⁹ The independence dimension of realism does not emerge as a discovery of metaphysics:

Realist metaphysics comes after the time when reality and our need for accommodating to it are already acknowledged. Its theories confirm and complete an understanding that does not wait for metaphysics to direct it.⁴⁰

In Kantian language, then, we are committed to the independent existence of those things our critics are likely to say exist only in the

³⁷ Devitt:1988:159.

³⁸ See Salinas:1989:114.

³⁹ See Devitt:1984.

⁴⁰ Weissman:1989b:204.

phenomenal, or known, world.⁴¹ This point obviously requires identifying the nature of this independence in a way that does not fall victim to the plausible Davidsonian criticism of the very idea of a reality "outside all schemes."⁴² Failing a general distinction between what we say and think of the world (our "conceptual schemes") and the way the world is, we will be unable to make any sense of the independence dimension of realism. It is clear that realism only escapes the charge of banality as it adopts some kind of scheme–reality dualism; otherwise, the following dilemma is real. Either our descriptions of reality in terms of any one of our present schemes vitiates the independence of that reality from all schemes; or we persist in talking of a principled distinction between our schemes and a "scheme–neutral" reality, invoking, once again, the better–off–lost notion of a unconceptualized given. As Rorty himself explains

I want to claim that 'the world' is either the purely vacuous notion of the ineffable cause of sense and goal of intellect, or else a name for those objects that inquiry at the moment is leaving alone.⁴³

But that cannot be right, if the objects of present inquiry have an intrinsic but discoverable form of their own, and so remain independent of that inquiry for their existence and nature. Rorty loses the sense of the independence dimension of realism as he fails to sustain a dichotomy

⁴¹ Devitt refers us to Passmore who writes: "The main tendency of nineteenth-century thought was towards the conclusion that both "things" and facts about things are dependent for their existence and their nature upon the operations of a mind" (1984:164). It is clear, as Devitt remarks, "that the things in question are the known ones, not the ineffable ones" (Ibid:164). We are not committed to, in other words, the world that Rorty considers to be "well lost" (Rorty:1981:14).

⁴² Davidson:1985.

⁴³ Rorty:1981:15.

between concept and thing conceptualized.⁴⁴ Contemporary philosophers of language persistently vacillate between "talk of theory and talk of the world."⁴⁵

This vacillation is of enormous help to the anti-realist because, of course, theories really are mind-independent. So, if the distinction between theories and the world is blurred, an anti-realist position will seem much more plausible.⁴⁶

Rorty's mistake comes to this: he equivocates on the theory-dependence of our descriptions and the theory-dependence of that which is described. That would be the case were the hungry person described at the start of this chapter to mistake the theory- or language-dependent nature of her maps and plans for an indeterminacy in the world there represented.

Clearly we are witnessing in this debate an "unhealthy vacillation"⁴⁷ between two senses of what it means to say that the real exists "independently" of us. Those two senses are: (1) that the real exists entirely independent of our efforts to describe it (denying, in fact, the epistemic nature of our judgements on what there is); and (2) that what there is exists independently of discourse or theory per se (the ontological question of what there is). In this sense, the well-known Wittgensteinian phrase, "the limits of our language are the limits of our world"—far from signalling necessarily some form of linguistic relativism — says only that our ontological talk about what there is must be couched in a language. On this account, the

⁴⁴ Trigg:1980:104.

⁴⁵ Devitt and Sterelny:1987:201.

⁴⁶ Ibid:201.

⁴⁷ Salinas:1989:114.

Davidsonian idea that all attempts to disjoin scheme and reality are doomed to failure rests on the implicit acceptance of this conflation of two very distinct meanings of theory-dependence. Accordingly, I suggest that the following condition of independence (CI) of the objects of thought from our thoughts of those objects must be satisfied in order to sustain a realist view of the external world:

(CI): The independence of the common-sense and scientific entities of the world from our schemes of representation does not render the world an ineffable, inaccessible realm of unspecifiable objects.⁴⁸

1.4 Foundationalism and Realism

It should be clear that my defense of realism represents a positive response to Richard Bernstein's injunction to "move beyond" the apparent dualities of "objectivism and relativism," as it rejects as ill-conceived all attempts at securing a fixed "foundation" (usually consisting of a level of indubitable truths or perceptual judgments) for knowledge.⁴⁹ It is a truism, therefore, that one can at the same time be an "antifoundationalist" and a realist.

In terms of rejecting foundationalism, the realist can agree with Richard Rorty when he claims that philosophy is not an "all-encompassing discipline which legitimizes or grounds the others"⁵⁰ Realists can agree also that philosophers should set aside the skeptical problematic which often serves as the impetus to foundationalism in epistemology, as the skeptical

⁴⁸ See also, Salinas:1989:113.

⁴⁹ Bernstein:1983:18.

⁵⁰ Rorty:1979:6.

fear of being permanently misled by our natural and conventional signs may lead some to claim that sense-experience is grounded altogether in mind's productive activity.

The realist demurs, however, as Rorty suggests that philosophers take up "edifying [rather than constructive] discourse."⁵¹ Despite his well-known attacks on the idea of philosophy as the mirror of nature, Rorty remains true to the very intuitionism that gave rise to the "copy theory" of ideas. Truth and meaning, he says, are warranted assertibility — i.e., propositions appropriately presentable to a mind. From the idea that "we can never encounter reality accept under a given description," he infers that we "should see ourselves...as making worlds rather than finding them":⁵²

There might be any number of interpretations that are coherent and effective in this way, though each of them might differ from others in regard to the differences, relations and entities ascribed to the world. Mind has authority for formulating, then accepting any one of these interpretations, then the freedom for taking up one interpretation after another: Mind is empowered for creating a succession of coherent experiences, truths, existing states of affairs and worlds.⁵³

It is correspondence truth of the sort appropriate to maps and plans and the features of the world they are thought to represent — not the self-certifying truths associated with "world-making" — that we require if we are to secure and locate ourselves in a world not of our making. I have said that true hypotheses will have instantiated possibilities as their referents. That claim, and its associated ontology of actuals and possibles, is expanded and

⁵¹ Ibid:360.

⁵² Rorty:1981:xxxix; emphasis added.

⁵³ Weissman:1989b:65–66.

defended in chapter V. First we consider the major alternative to our hypothetical and pragmatic realism — the method of intuitionism.

CHAPTER 2

INTUITION AND IDEALISM

2.1 Introduction

Idealism is a variety of intuitionism: it thrives as mind remains skeptical about the character and existence of everything it cannot directly inspect. Rather than speculate, fallibly, about those deeper structures and conditions of the world that happen to escape direct inspection — including our place within nature as its creatures — intuitionists would prefer to limit the conditions for the existence of possible worlds to the value–bestowing or sense–giving interpretations used for creating a thinkable experience.

2.2 Intuition and Idealism

We might construe this world– or experience–making, interpretative activity as involving three of the four components of behavior–directing plans listed in section 1.1. Only the maps are missing. Rorty's reaction to the gap between mind and the world is emblematic: "world–making" becomes the preferred way of putting the best face on the terrors of skepticism; and there is no world apart from the many "versions" created when theories are used to schematize sensory data or organize behavior. Maps that were to represent the features of the world constraining our plans and resisting our interpretations have lost all separate authority, as we now say with Rorty that "there are no non–human forces to which human beings should be

responsible."¹ Idealism, this implies, is one consequence of adopting the intuitionist method:

This hermetic idealism is usually individual and solipsistic, but we make it cultural by extrapolation. For thought's horizons are fixed by mind's own structure, or by the language or theory used for thinking about the world. Reflection is, on either telling, a kind of light that mind directs first onto its own determining content, then onto itself.²

The intuitionist method has these two notable features, both of which are prompted by the skeptical fear that our knowledge of the world is precarious if our access to it is forever mediated by representations or signs. First is the notion that every subject matter be presentable, in its entirety, to inspecting mind: everything determinate within experience is to originate in the interpretation, or conceptual system, used for making the data thinkable.³ Nothing that is real can be hidden, as "every reflection brings forth a world."⁴ Second, we note the certainty that mind achieves as it thinks or perceives these contents. To the extent that we follow Putnam in saying that we "cut up the world into objects" as we choose a sense-giving interpretation of the world, we eliminate every chance of error by closing the gap between thought

¹ Quoted in Bhaskar:1989:153.

² Weissman:1989b:64.

³ Intuitionists differ among themselves about (1) the conditions for and (2) character of those things that are presentable to the mind. (1) These inspectable contents may be (i) given to, or (ii) more or less created by, then set before the mind. In both cases, something is, finally, given for inspection; everything real will be inspectable. Defending these claims about (1) is a task left for chapter IV. (2) The data which is assumed to be given can vary from sensory phenomena, through ideas, moods and impressions, to Platonic Forms. These various emphases within the larger circle of intuitionist thought correspond to important and obvious differences between, for example, Hume and Kant. Yet their common antagonist remains the hypothetical method, with its claim that the existence and character of things are independent of what we might think or say of them.

⁴ Maturana:1988a:26.

and its objects.⁵ Yet it is scarcely intelligible now to say that the world is separate from the mind that thinks it, or even that "the mind and the world jointly make up the mind and the world."⁶ It is better to admit, along with Gadamer, that "[w]hat the world is is not different from the views in which it presents itself."⁷

Intuitionist method represents, therefore, a combination of (1) radical skepticism, where nothing exists if it is not thought or perceived; and (2) idealism, where everything significant for reality will have been set before inspecting mind. It follows that Descartes' cogito is a paradigm for intuitionism, where the self-reflecting, thinking subject is the central fact of our world. This we see in Maturana:

Nothing precedes its distinction; existence in any domain, even the existence of the observer...is constituted in the distinctions of the observer in the explanation of his or her praxis of living.⁸

I can imagine at this point the following common sense objection to my characterization of intuitionism (or idealism):

Surely few philosophers doubt the reality and existence of the everyday objects of the world, like tables, chairs and other people. You are confusing their legitimate analyses of the language- or concept-dependent nature of all these objects for an (absurd) idealism that would admit as real only those very words or concepts.

I have two responses. First, and somewhat trivially, it is possible to renounce this sort of idealism and still hold to theories which tacitly support it:

⁵ Putnam:1981:53.

⁶ Putnam:1987:1.

⁷ Gadamer:1975:406; see also section 2.4.3.1 below.

⁸ Maturana:1988b:80; see also section 2.4.1 and chapter III below.

"idealism is not only a theory that one professes."⁹ In such cases, idealism follows without regard for the professed interests of the theorists who adopt the intuitionist method.¹⁰ Indeed, most people seem to be realists when it comes to talk about such things as the existence of New York City or their own two feet. Many — but not all — of the philosophers I will be referring to as intuitionists would not dissent from this naive, realist talk.

Yet that talk is ingenuous, as we consider their understanding of the necessary and sufficient conditions for the existence of such things. Descartes is emblematic, as the cogito requires God's goodness to reach beyond the perimeter of inspecting mind to the world of physical objects. Descartes' modern successors (like Maturana), having dispensed with God, are no more able to provide within their philosophical systems for the mind-independent reality of these common sense objects. Indeed, they are theoretically committed to anti-realist conclusions about those objects, and their ad hoc disclaimers are unconvincing.

Here is the second, and most important, response to the objection to my initial characterization of intuitionism. As I noted in section 1.3, intuitionists (like Goodman, Maturana and Putnam) are inclined to reduce the natural world to a flux of Kantian, unknowable things-in-themselves, all the while equivocating on the independence of the world from our theories or descriptions. Specifically, this point is often missed: there is no valid inference from (1) there can be no theory- or language-independent description of a thing, to (2) there can be no theory independent things. It is

⁹ Weissman:1987b:12.

¹⁰ In fact, our discussion in chapter III of the contradictory nature of Maturana's "ontology of the observer" sets out from just this point.

true that all talk of reference between our words and the world must involve language; yet it is equally true that every philosophical method presupposes both a psychology and ontology, identifying the necessary faculties, structure or organization of the mind that is capable of using that method and the domain to which that method applies, respectively. We do not theorize in an ontological vacuum.

We shall see (chapter IV) that the ontology of intuitionism is a "psycho-centric" one that identifies reality with a mind-inspected given.¹¹ But first we must make plausible the prior claim that every method presupposes an ontology. Descartes will be our example.

2.3 Between Method and Ontology

I suspect that every philosophical method has psychological and ontological assumptions. The method we have been discussing, intuitionism, effects a reduction of these two domains to the domain of the psychological. That is, the domain of application of the intuitionist method is restricted to qualifications of the (structures and faculties of) the mind presupposed by that method. This is a psychological version of what Bhaskar refers to as the "epistemic fallacy," signalling, broadly, a reduction of being to knowing, and limiting a method's ontological domain to mind and those things which are set clearly and fully before it.¹²

¹¹ Weissman:1987a:Ch4.

¹² Bhaskar:1989:13. We might wonder at Bhaskar's choice of words here: what sort of fallacy is this? There are formal fallacies, usually involving the violation of a generally accepted rule of valid reasoning — denying the antecedent while affirming the consequent, for example. Informal fallacies are much more commonplace, involving context-dependent judgments about the validity, soundness or accuracy of an argument. More often than not, there is no universally agreed upon decision-procedure to establish the inadequate nature of any particular inference in advance. The word fallacy has, therefore, polemical or even political force, meaning to direct our attention toward some aspect of an argument (roughly consisting of a set of premises

Given the reciprocal relations that hold between a method, its ontology, and the features of a mind capable of using it, our choice of method places limits on the kinds of assertions we can justifiably make. When intuitionism, for example, is expected to justify our beliefs, we find that we are unable to make sensible assertions about (1) the existence and nature of a world that is independent of what we think or say of it; and (2) the reality of anything that is not exhaustively inspectable. Those (like Maturana) who adopt this method while renouncing its idealistic results, are most likely idealists despite themselves: their ontological commitments, however extensive and complex, do not exceed the qualifications of the mind that thinks them.

I turn now to Descartes to clarify the modern, historical roots of intuitionism and to provide an extended example of the necessary reciprocity of method and the psychology and ontology of method's application. At the same time we will be tracing that method's restriction of the real to a mind-inspected given, so that we may comment further on intuitionism's idealist consequences.

meant to support a particular conclusion) that call for reconstruction or interpretation to exhibit something, that from a particular perspective, has been left unsaid. I would not agree that Bhaskar's use of the term has merely polemical force, since I think he is right in identifying the "implicit" ontology of even the most "empirical" of positions. Yet Bhaskar's use of the word is surely informal, as the vast majority of fallacies are. There is not much sense in "naming" this fallacy (eg., "suppressed evidence" or "equivocation") as one could easily locate informal fallacies on both sides of the realist-idealist debate. Better then to adopt a more neutral term: reduction. From the perspective of the realist who is committed to the irreducible reality of a world we have not made, the "epistemic fallacy" (and its linguistic counterpart) signals, more than any other thing, the attempt to reduce all ontological notions to some aspect of human experience, our language or our minds. I refer to his fallacies as instances, therefore, of reductive epistemics, assuming that epistemics is taken broadly enough to include all our specifically human ways of thinking about or experiencing the world. Replacing "epistemic (or linguistic) fallacy" with reductive epistemics has the added advantage of not implying that alternatives to realism necessarily contain infelicities of logic or reason in an absolute, or formal sense.

2.3.1 Descartes and Psychology

There is a bias against speculation in modern epistemology and metaphysics, and that bias follows from the popularity of various forms of intuitionism. Our modern prejudices would have us favor an epistemological method — a method concerning the procedures and criteria for making and asserting judgments — which is not preoccupied with ontological or psychological assumptions about the domain of application or faculties of the mind, respectively, presupposed by the method. Such things are often considered both highly speculative and fairly irrelevant to the making and testing of (true or meaningful) statements.

Rule IV of Descartes' Rules For the Direction of the Mind reflects this modern bias:

Rule IV: There is need of a method for finding out the truth.¹³

Notice that this concise rule makes no reference to either the psychological or the ontological presuppositions of Descartes' method. Why is this so? We often suppose, first, that entertaining notions about the structures and faculties of mind necessary for making and testing judgments threatens to undermine the "neutral" access to truth or meaningfulness that Descartes' more spartan understanding of method seems to allow. We say that an over-emphasis on the reciprocity of method and the psychology designed to apply it is a form of "psychologism."

Second, we might be "functionalists" in epistemology, and suppose that method is strictly separable from its realization in any particular mind or ontological domain. Are either of these two positions defensible? Are we

¹³ Descartes:1927:48.

capable, that is, of describing our method as presupposing nothing at all about the character of the mind using it, or the domain of things and relations to which it applies? Descartes would demur. This is plainer if we note that the above Rule is a shorter version of Rules I and II. In those first two rules, Descartes does not fail to mention these presuppositions of his method:

Rule I: The end of study should be to direct the mind towards the enunciation of sound and correct judgments on all matters that come before it.¹⁴

Rule II: Only those objects should engage our attention, to the sure and indubitable knowledge of which our mental powers seem to be adequate.¹⁵

In conjunction with the other Rules and commentary upon those rules, Descartes makes it clear that his method is not strictly separable from its applications and psychological assumptions. Let us now look more closely at the two factors of functionalism and psychologism that threaten to undermine the essential reciprocity of method, the character of the mind using it, and the objects to which it applies.

2.3.1.1 Functionalism

Weissman defines the functionalist thesis as follows:

Functionalism is the doctrine that form has a specifiable, "logical" integrity, as we may state a method's procedures and even its truth conditions, without indicating the kind of system or agent whose method it is, or the kinds of entities to which the method applies.¹⁶

¹⁴ Ibid:38.

¹⁵ Ibid:40.

¹⁶ Weissman:1987a:21.

Deductive inference is one such example. Considered as an abstract set of rules, procedures for thinking or specification of the least conditions for making or asserting true judgments, it does seem as if a method (like deduction) is strictly separable from any particular mind or ontological domain:

Suppose that some god creates a world by deriving more remote historical events from preceding ones. His method is the one that we apply when thinking deductively, but the ontology of the result is different, as this god's mind is different from our own. The abstract specification of method, together with the truths proved by it, will have been blind to these differences.¹⁷

It is in this bare, abstract form that method appears autonomous and neutral in regard to its applications. Does this work to undermine what I have called the essential reciprocity of method, the character of the mind using it, and the possible objects to which it applies? Only if we (1) restrict ourselves to method so abstracted from any application; and (2) assume that what the application of any particular method adds to our account of that method is strictly accidental to the full account. Yet as we recall Descartes' most spartan characterization of method (Rule IV), we can see that this is not so, for method was supposed to be a means of producing true judgments.

Our account of the worldmaking activity of gods misled us in this way: our method becomes strictly separable from its applications only as it conflates the abstract form of method with its applications. The abstract method of functionalism produces, in fact, no judgments, true or otherwise – it is method "spinning its wheels."¹⁸ Only as we consider method applied

¹⁷ Ibid:21.

¹⁸ Ibid:22.

do we take up the question of the separability (or reciprocity) of method, mind and ontology. And when we do, that reciprocity appears fundamental. God produces worlds as humans produce true or meaningful sentences, those differences which result from applying the method of deduction only becoming fully visible as we consider the difference between God's mind and our own, along with the difference between producing worlds and producing sentences. Functionalism, or the abstract and artificial division between method, mind and ontology, only makes sense as we chose to ignore these various applications of method.

2.3.1.2 Psychologism

What about psychologism? Does this notion succeed in undermining the fundamental reciprocity I have been arguing for? Granting that our method has fundamental psychological presuppositions, do we not thereby undermine our method's ability — as we attempt to produce true statements about the world — to distinguish between what mind brings to the world and vice versa? Psychologism often does appear to be a form of reductive epistemics (see note 13 above) that reduces the objects of our knowledge to some content or activity of the mind. Typically, psychologism represents the systematic confusion of signs with their objects: truth and knowledge become the "interanimation" of sentences or thoughts, without reference to any extra-mental content which those sentences or thoughts might signify.¹⁹

Commitment to psychology, however, is not the same as adopting psychologism. Consider the realist method outlined earlier. The realist psychology assumes that the human mind is capable of construing thoughts

¹⁹ Quine:1967.

and words as signs or representations referring beyond themselves to possible objects or states of affairs in the world. Psychologism, on the other hand (and for reasons I will not discuss), in turning those representations into realities, insists that thought is unable to "reach beyond itself" in this realist way and know something of a mind-independent world. The connection between psychologism and a method's psychological assumptions is very loose indeed.

Could it be that psychologism is strictly irrelevant to the fact that every method has these assumptions? I think that is true: some methods will be psychologistic, others will not. Both realist and anti-realist methods, for example, presuppose a mind capable of using those methods, and that, by itself, has no clear implications for the extent to which the object of thought, or the truth of our sentences, can or cannot refer beyond thought to the world.

Descartes' attempts to avoid psychologism reinforce this conclusion. Descartes suggests that every clear and distinct idea is necessarily true of the world if altering or negating it creates a contradiction. Every such idea reaches from the mind into the world, as the necessities discovered first in the mind — like those of existence (that God exists) or of essence (that $2 + 2 = 4$) — signal necessities in the things themselves. Clarity and distinctness are our tests of truth; while truth — and here is the realist side of Descartes — is the correspondence of thought with the external, eternal "archetype" it signifies.²⁰

Yet most of our ideas are not necessary truths in the above fashion, but merely contingent ones. Descartes' idea of wax before the hot fire, for

²⁰ Weissman:1987a:24–5.

instance, exhibits little of the necessity found in his ideas of God or of mathematics. We can imagine — without contradiction — innumerable changes that the wax may undergo. Indeed, the application of the above criterion of truth to these contingent claims directs Descartes to invoke God to save us from self-deception. Now for an idea to be clear and distinct it need only be set unambiguously before the mind's eye. God will be required to confirm the applicability of each of those contingent ideas, as there is no contradiction in supposing that my experience of the wax is but an illusion or part of a dream. In short, Descartes is saved from psychologism only with God's help. Yet it is important to note that Descartes' psychological assumptions remain intact throughout. The mutuality of method and psychology is not the cause of his succumbing to, or averting, psychologism. Descartes' psychology merely lends support to the psychologistic bias already implicit in his intuitionist method.

Of course, the same holds true for the method of hypothesis. We assume that mind's contents are signs having objects distinct from them. These signs are meaningful when construed as representing possible states of affairs, like "green rose" and "red rose." These thoughts are true when the possibilities they signify are instantiated, as only the latter has been. This is a method which consists of the mind (1) formulating meaningful hypotheses (or maps) about a mind-independent world, as well as (2) devising various pragmatic tests of these hypotheses. The psychological assumptions of realism are undeniable; yet psychologism plays no role.

2.3.2 Descartes and the Modern Roots of Intuitionism

How might we characterize Descartes' method? We should say that his method requires, in part, a reconstruction of our pre-reflective beliefs. We begin by sorting out from among our relatively obscure beliefs those simple

ideas that present themselves most clearly and distinctly. We then derive successively complex ideas from those simples, adding to our store of truths. But this is only half of the story: focusing on the deductive nature of Descartes' method in this way we risk overlooking the foundational intuitionism of his method. Consider Descartes' Rule V:

Rule V: Method consists entirely in the order and disposition of the objects toward which our mental vision must be directed if we would find out any truth. We shall comply with it exactly if we reduce involved and obscure propositions step by step to those that are simpler, and then starting with the intuitive apprehension of all those that are absolutely simple, attempt to ascend to the knowledge of all others by precisely similar steps.²¹

The non-deductivist foundation of Descartes' method emerges as we consider our "intuitive apprehension" of all those "absolutely simple" things as well as our ability to construct the very deductions of more complex ideas – neither of which could be the result of any kind of deductive reasoning. We intuit the simplest things (like "I am") along with the certainty of the rules for constructing, in deductive fashion, more complex ideas from those simples. So intuition, not deduction, serves as the foundation — the very method of producing — all knowledge claims. What role is left for deduction? Deduction, our powers for intuition tell us (and this is the formal mechanism Descartes outlines in the Rules), is the preferred procedure for organizing all those materials already presented to our intuiting, or "inspecting," minds.

We might wonder what prompts Descartes to accept this intuitionist conclusion about the mind's ability. Is our power for direct inspection of

²¹ Descartes:1927:56.

simple ideas and ourselves itself confirmed by this method? The answer appears to be no:

If our method rightly explains how our mental vision should be used...I do not see what else is needed to make it complete.... There is besides no question of extending it further in order to show how these said operations ought to be effected, because they are the most simple and primary of all. Consequently, unless our understanding were already able to employ them, it could comprehend none of the precepts of that very method, not even the simplest.²²

Descartes offers no arguments designed to prove that we do indeed possess this constitutive ability to inspect directly the things set before our minds. Could it be the case that when it comes to self-inspection no argument is necessary? That appears to be Descartes' view when he writes:

For it is so evident of itself that it is I who doubts, who understands, and who desires, that there is no reason here to add anything to explain it.²³

It follows from the very act of reflection (on any content) that I have unmediated, direct knowledge of myself existing as a thinking being. This knowledge will serve as the secure foundation for all my other claims to knowledge. Anyone who sets about reflecting on this power of ours, will have already dispensed with any means for doubting that it obtains. That is not to say, however, that this act of self-acquaintance which is the cogito is simple and without distinct elements. Weissman identifies three distinguishable yet inseparable aspects of Cartesian intuition.²⁴ First is the assumption that knowing is a form of "seeing:" we know as the "mind's eye

²² Ibid:49–50.

²³ Ibid:101.

²⁴ Weissman:1987a:31.

sees."²⁵ Second, Descartes assumes that something must be given to be seen, to serve as the content or object on which I might reflect. Third is the view that I am immediately aware of myself and my powers for inspecting the given as I reflect on any content or object whatsoever. Any act of cognition, therefore, will involve these two things: a mind fully acquainted with itself and some object or content on which it may reflect. In the Cartesian act of knowing, nothing is better known to mind than mind itself.

It is here that intuitionism first sets for itself an impossible task. The intuitionist ideal presupposes a mind fully acquainted with itself and able to specify and confirm the mental structures and faculties which make intuition possible. Yet it would seem that the most plausible method for discovering these conditions for intuition is (pace Kant) a form of inference, not intuition, for such conditions are most likely not inspectable. What might one such condition for intuition be? Consider again what Descartes writes in Rule V:

Rule V: Method consists entirely in the order and disposition of the objects towards which our mental vision must be directed if we are to find out any truth.²⁶

This passage suggests that our "mental vision" will give us access to everything presented to mind. So that some truths might result, it is important too that our power of inspection be able to distinguish this content in sophisticated ways: for example, to distinguish simple ideas from more complex ones, and to mark off that which presents itself clearly and distinctly from the more obscure and inarticulate contents of unreflective thought and experience.

²⁵ Ibid:31.

²⁶ Descartes:1927:56.

How might we account for this very power of inspection? Inspecting mind cannot do that — all that it confronts is the evidence of its own powers in the form of the products of its activity. The fact is that Descartes never tries to specify the psychological conditions for producing these products. Rather, he claims that mind is only capable of reflecting on and discovering the "effects of what is done, to it or within it, not their causes."²⁷

It follows that intuitionists are forced to choose inference over intuition in specifying the conditions for intuition. And in so doing, they underline the inadequate nature of intuitionism's unique mix of intuitionist method and psychological assumptions. I suppose that it is reasonable to say that inspecting mind does in fact have the powers and structures that make such inspection possible. To the extent that intuitionists recognize the need to specify and confirm those essential conditions for intuition, it sets itself a task that it lacks the resources to accomplish. We state this as the first major consequence of adopting the intuitionist method, at least in its Cartesian form:

Consequence #1: Intuitionism is unable to specify the least ontological and psychological conditions for the possibility of intuition.

Later we shall see that this limitation holds true for many other versions of the intuitionist method. Descartes' problem of specifying the conditions for the possibility of intuition will become their problem too, as they

...hide, disguise, or ignore all the paraphernalia and assumptions which make the process go. They are slow to tell us about the presuppositions of their method, including mind's self-

²⁷ Ibid:38.

sufficiency and its structure, power and freedom as a self-creating self-consciousness. When these assumptions are acknowledged, the intuitionist activities claimed for mind seem a pretense.²⁸

2.3.3 A Conflict of Method and Theory

We want to ask now in what manner, and to what extent, knowledge, on Descartes' view, can reach beyond our inspecting minds. There is much at stake in these questions for Descartes' way of thinking, for two reasons. First we recall Descartes' reason for rejecting psychologism: our ideas must refer beyond themselves in order to make any sense of our knowledge:

...for certainly were I to consider these very ideas only as particular modes of my thinking and not refer them to any other thing, they could scarcely provide any matter for error.²⁹

Second, there is his notion of a transcendent God who works to guarantee that our clear and distinct ideas do have extra-mental referents. Two considerations are important here. First is the limitation on what shall count as an idea: all ideas, as the form of thoughts, must be present to the mind and inspectable. Second, those "most simple" ideas do not include, and cannot be made to produce, the idea of God. It follows that Descartes, on his own account, cannot have an idea of God. His method, in other words, renders talk of God meaningless.

Since every method contains psychological and ontological presuppositions, we might suppose that it is the implicit ontology of Descartes' method that is in conflict with his more explicit metaphysical theory — including his concept of God, and, most generally, our place in the material world. The result is that Descartes is committed to opposed claims

²⁸ Weissman:1989b:78.

²⁹ Quoted in Weissman:1987a:24.

about reality. On the one side, his intuitionist method limits the real to that which is prefigured in our clear and distinct ideas; while on the other, his more explicit metaphysical theory tries to speak of the world in ways that his method would not allow.

We should step back now and consider what the preceding suggests in the way of minimum conditions for adequately combining method and ontological theory. Method's first task is to allow us to conceive and confirm, however fallibly, everything that our ontology affirms. Likewise, ontology should not contain references to things that are undecidable by our method, as Descartes' method bars him from having any idea of God. We ignore the necessary reciprocity of method and ontology when we follow Descartes and persist with ontological claims that method forbids or, alternatively, fail to acknowledge ontological commitments implicit in our chosen method.³⁰

Having identified this conflict of method and theory in Descartes, how might one go about solving it? There are two main approaches. First, we might consider pressing for the absolute priority of either method or theory. For example, our claim might be that method is always prior, and that Descartes should therefore adopt an atheistic stance. But, in general, I can see no good reason for asserting, *a priori*, the priority of either method or theory. Indeed, the relations that hold between the two seem to be more or less symmetrical:

Method has priority in the respect that it limits the content — hence, the claims — of theories formulated within it, as a method having a severe empiricist meaning requirement prohibits the formulation of claims about God or eternal

³⁰ I criticize Maturana along these lines in the next chapter. These issues are also the focus of Ruben's attention in his Marx and Materialism (1977).

possibilities. The order of authority is reversed, however, when we emphasize that it is theories which are true or false, and theories with their explicit claims about the world which direct action — e.g., as our notion of cause has regulative force in ordinary practice and experimental science. Where method is only instrumental to formulating theories, we may want to enrich method so that it may serve for expressing and testing them.³¹

Second, might we find a solution in the "facts" of either sensory experience or considered reason? Never mind the dispute between theory and method, we might say, but look to the "things themselves," whether that means searching the empirical data or consulting rational intuition. Yet this common emphasis on the idea that we may inspect something directly, without the distractions of method or previously accepted theories, belies the common ground of empiricist and rationalist solutions alike. Both would have us evade the dispute between our method and ontology by looking to a realm of uncontaminated, exhaustively inspectable and dispute-resolving facts. This is of course, the intuitionist method, with all its implicit ontological assumptions intact, circling back on itself in empiricist or rationalist guise.

Intuitionism's emphasis on "the facts" is inseparable from its demand that everything real be inspectable.³² But we already knew this to be a consequence of adopting the intuitionist method, and it does nothing to resolve Descartes' problem. As a least condition for having a true or meaningful thought is that it is a "simple" (or the complex constructed from simples) so Descartes is barred from having any idea of God, including the idea that God exists.

³¹ Weissman:1987a:45.

³² Weissman:1989a:63.

Descartes' methodological rigor forces us to take responsibility for specifying the domain of things existing:

Where "I am, I exist," is the elemental expression of our knowledge, mind knows itself by catching its reflection in some other content known, as I know something of myself in thinking or perceiving any other thing.... [M]ind's contents are...its determining qualifications. Everything else, i.e., everything whose existence and character are independent of mind, is dismissed as unthinkable.³³

Nothing can be real if it is not exhaustively inspectable in this way; "nothing pre-exists its distinction."³⁴ The second consequence of adopting the intuitionist method is more general than the first:

Consequence #2: Intuitionism is biased against speculation: nothing can be real if the idea of it is not exhaustively inspectable.

How might the realist respond to Descartes' theory-method conflict?

The method of hypothesis rejects as an excessive concession to the skeptic the intuitionist assumption that everything real must be inspectable. Relaxing the demand for verification, we say that there can be no unmediated access to the world: all our knowledge claims will be probabilistic. We are in effect "separated" from that world by a tissue of natural and conventional signs. We shall never have the certainty that the immediacy of intuitionism promises; but then, from our naturalistic perspective, too much of reality remains inaccessible to that other position.

³³ Ibid:70.

³⁴ Maturana:1988a:45.

2.4 Between Content and Form

Intuitionism often exhibits one of two emphases: content or form. Philosophers may dwell on either one, considering it the touchstone for understanding while regarding the alternative as derivative, possibly having its intelligibility projected onto it. Hume is the clearest example of an intuitionist of content in supposing that sense data (or "content") should serve as the source for all that is intelligible, including the distinctions of ordinary language ("form"): all the "perceptions of the mind" reduce to the "force and vivacity" of our impressions.³⁵ Indeed, sensory data, or most broadly, experience, usually serves as the original content for intuition, while ordinary language³⁶ serves as the form. Where intuitionists of content turn their attention toward everything inspectable within, or given to, experience, intuitionists of form attend to differentiations within phenomena or the manner of their organization.

We find more intuitionists of form than content (James and Hume are notable exceptions), as philosophers are likely to imagine that content serves as a mere provocation to reflection: our conceptual systems are to be the basis for intelligibility within an otherwise "unthinkable" void, substratum, or flow of experience. Maturana's understanding of explanation as a reformulation of the "praxis of living" of an observer is a case in point.

³⁵ Hume:1969:74-5.

³⁶ There is this difference in emphasis among ordinary language philosophers. There are those, like Austin and Gadamer, who suppose that our unrefined ordinary language "contains all the distinctions men have found worth remarking" (Austin: 1970:130; see also Gadamer:1975, 1976). Others, like Carnap with his "constructional system" of concepts, see ordinary language as needing some improvement in order best to clarify experience and serve as the ground for all that is intelligible (See Carnap:1967).

2.4.1 Maturana's Praxis of Living

Maturana's writings often begin with a fitting observation: we human beings operate as observers, that is, we make "distinctions in language."³⁷ This is our universal, "a priori experiential situation:"³⁸ everything we do, everything that happens, everything that is, all occur within our "praxis of living (or the experience of living) in language."³⁹ We are to imagine that the flow of experience is prior to all our comments or reflections on it, as our inarticulate, immediate experience of surprise is prior to any eventual explanation or understanding of that experience:

Indeed, whatever happens to us, happens to us as an experience that we live as coming from nowhere. We do not usually realize that because we normally collapse the experience upon the explanation of the experience in the explanation of the experience. This, for example, happens when, while driving a car, another vehicle that we had not seen in the rear-view mirror overtakes us. When this occurs we are surprised, and we usually say immediately to ourselves or to others, as a manner of justification of our surprise, that the other vehicle was in the blind spot of the rear viewing system of the car, or that it was coming very fast. In our experience, however, we live the overtaking car as appearing from nowhere.⁴⁰

This is meant to be true of all experience. Maturana proposes that the flow of experience, or the happening of living of the observer in language, just "happens out of nowhere." We note these three consequences. First, any explanation or description of experience is "operationally secondary" to the experience itself. That follows whether we were to suggest that we are a

³⁷ Maturana:1988b:26; 1988a:5.

³⁸ Maturana:1988a:5.

³⁹ Maturana:1988b:27.

⁴⁰ Maturana:1988a:5.

complex of properties existing in space–time or ideas in the mind of God: each is put forward as a "comment, reflection, or reformulation"⁴¹ of that original experience which gave rise to these various explanations. Second, explanations or descriptions do not replace or constitute the experiences they supposedly explain or describe,⁴² as a scientific explanation for the appearance of a mirage does not replace that experience, whose experiential character often endures, despite the explanation. Third, the secondary nature of our comments and reflections on the experience of the observer render those explanations "strictly unnecessary" for experience.⁴³

Do these remarks about the priority of the observer's experiential situation suggest that Maturana is an intuitionist of content? No, experience can not serve as the original content for Maturana as it does for Hume, who finds in the sensory given ("impressions") the content for every idea. It is different for Maturana, where experience — or the praxis of living of the observer — is more an incitement to reflection and explanation and a necessary condition for the "possibility" of there being any observations at all.⁴⁴ Experience is not intelligible in itself; rather, every intelligible difference awaits the operations of distinction performed by an observer:

...the observer finds him– or herself as the source of all reality through his or her operations of distinction that her or she performs in the praxis of living.⁴⁵

⁴¹ Maturana:1988a:6.

⁴² Maturana:1988b:27; 1988a:6.

⁴³ Maturana:1988b:27.

⁴⁴ Ibid:27.

⁴⁵ Ibid:31.

Uninterpreted content nearly disappears (it just "happens out of nowhere"), as all of its intelligibility derives from the forms (operations of distinction) used to think it. Maturana is clearly an intuitionist of form. We save for the next chapter a detailed consideration of Maturana's "ontology of the observer."

2.4.2 Intuitionism of Content

Intuitionists of content are caught up in a dialectical cycle between the naive, mute enjoyment of content ("experience") and its accurate description. Why does that occur? These intuitionists assume that the partial, selective nature of description inevitably generates a picture of reality that is unfaithful to the detail of experience. The selectivity of description mediates, hence distorts, our appreciation of content in three ways. First, the qualitative range of our vocabulary of descriptive terms (like color terms, for example) is often inadequate in comparison with the observable differences of color in the world. Second, our limited abilities for interpreting even well-formed sentences limits the possible complexity — and hence accuracy — of our descriptions, as we are incapable of understanding a sentence containing a verb modified by dozens of adverbs. Third, our descriptions may exaggerate the differentiations within experience, as there may not be anything in the content that corresponds to the discrete linguistic units of our descriptions.⁴⁶

We must add to the selectivity of description one further distorting feature of that activity: our descriptions may contain "some a priori bias or structure determining the kinds of data to be selected, and the principles for

⁴⁶ Weissman:1987a:58–9.

organizing our claims about them."⁴⁷ It is here that we suppose with Wittgenstein that the limits of our language mean the limits of our world; that the language used in describing the world is a specification or anticipation of the kinds of things that may be found there. Together with selectivity, these a priori biases undermine intuitionism of content and move us closer to intuitionism of form as it strives to describe accurately (and in this a priori fashion) the content of experience.

2.4.3 Intuitionism of Form

There is a second possible emphasis within intuitionism that prioritizes the forms, relations, or rules for differentiating and ordering the content given to experience. The priority of form arises in either of these two ways: form is discovered within the content or used legislatively in projecting form onto content. In the first case, the forms are intrinsic to content, and the mind achieves understanding by discovering the organizing or differentiating relations or rules within experience. In the latter case, the forms, either learned or innate, are used projectively or legislatively to supply the differentiations or orders with which to think or perceive an otherwise undifferentiated content. Plato and Descartes are paradigmatic:

They believed that we have luminous apprehension of Forms or concepts, and that these are used projectively as we impose or discover differentiation and order within sensory data. Ordinary language analysis is their modern counterpart. For what could be more familiar than the question, "What could we say of that?" where the saying introduces words that are used to differentiate and understand the matter at issue.⁴⁸

⁴⁷ Ibid:58.

⁴⁸ Weissman:1987a:60.

Language is to exhibit the forms which make the world thinkable, intelligible or knowable. In every case, uninterpreted content nearly disappears, as all of its intelligibility derives from the forms used to think it. We do recognize this last comment to be a most controversial one, especially in the context of the realist–idealist debate. Why suppose that the imposition of form steals all of the integrity that may be there before our act of interpretation?

2.4.3.1 Gadamer

Let us consider Gadamer's use of language as a tool with which we are to make "interpretations" of pre-existing states of affairs or objects, be they texts, works of art, or nature. We note from the start that it is a special sort of tool, however, since "on it depends the fact that man has a world at all":⁴⁹

Language and the world are mutually sustaining and reciprocally related: Not only is the world "world" only insofar as it comes into language, but language, too, has its real being only in the fact that the world is represented within it.⁵⁰

The first thing to notice is that Gadamer's use of the word world is equivocal.⁵¹ What is the relationship between our views of the world, the resources of our language, and "the world" itself? We recall that one's point of view, pre-judgments and "horizons" serve as the pre-condition of all our understanding: form dictates, in this way at least, to content. Just the same, Gadamer sees the very particularity of our understanding as a positive means to raising the philosophical awareness of the human sciences. Our

⁴⁹ Gadamer:1975:401.

⁵⁰ Ibid:401.

⁵¹ See also section 3.6 and 4.5 below.

"legitimate prejudices" are neither remnants of an unenlightened mentality nor barriers to objectivity:

...this kind of sensitivity involves neither neutrality in the matter of the object nor the extinction of one's self, but the conscious assimilation of one's own fore-meanings and prejudices. The important thing is to be aware of one's own bias so that the text may present itself in all its newness and thus be able to assert its own truth against one's own fore-meanings.⁵²

As Thomas McCarthy explains, the interpreter does not approach his or her subject as an "ideally neutral observer with a direct access to the given"; rather, people carry with them certain "horizons of expectation" -- beliefs and practices, concepts and norms -- that are all part of their "life-world."⁵³

Gadamer's novel point is that "legitimate" prejudices naturally result from the juxtaposition of familiar and "alien" traditions. This process

...not only lets those prejudices that are of a particular and limited nature die away, but causes those that bring about genuine understanding to emerge clearly as such.⁵⁴

How does this come about? Gadamer believes that the dialectic of experience, a process which adequately explains the apparent openness of "experienced" individuals

...has its own fulfillment not in definitive knowledge, but in that openness to experience that is encouraged by experience itself.⁵⁵

Our openness to new possibilities is a function of our awareness of the other -
- a conflict in horizons -- which prompts us to find the "question" of the text

⁵² Gadamer:1975:238.

⁵³ McCarthy:1978:172.

⁵⁴ Gadamer:1975:266.

⁵⁵ Ibid:319.

that it presents to successive generations of interpreters. The dialectic of question and answer makes understanding appear as a reciprocal relationship of the same kind as a dialogue. It is necessary to make the text "speak to us" as another person would.

But how does Gadamer overcome the extreme relativistic implications of the fact that every dialogical process — as a process founded in subjective "prejudices" — is related to the answers which we expect from the text? The key, he tells us, is in our total language dependence.⁵⁶ Gadamer regards language as the universal medium of human understanding, and not simply a tool which assists communication. Indeed, language becomes the very medium of human existence which discloses our "world" -- the space circumscribing and uniting (to use Gadamer's metaphor) the participants of a game in which they gamble with their prejudices.

Gadamer's worldmaking is a social affair: acts of interpretation are not "self-founding" but presuppose our immersion in tradition which is given concretely in our absolute dependence on language.⁵⁷ It is a central notion of philosophical hermeneutics that the dialogical character of understanding is the basis of the self-transcending nature of language -- its changing horizons. As David Linge writes:

Just as prejudices are not a prison that isolates us from the new, but a particular starting point from which understanding advances, so to know a language is to be open to participation in a dialogue with others that transforms and broadens the horizons from which we start.⁵⁸

⁵⁶ Ibid:402.

⁵⁷ Ibid:402.

⁵⁸ Gadamer:1976:xxxi.

There is no room here for the perfect exclusivity of perspectives that relativism demands. All possible worlds are, by necessity, linguistically constituted worlds. And

...every such world, as linguistically constituted, is always open, of itself, to every possible insight and hence for every expansion of its own world-picture, and accordingly available to others.⁵⁹

It follows that views of the world are not relative, unrelated pictures of different realities, for there exists no archimedean point from which we can distinguish between "our" linguistic world and "the" world. Gadamer is not attempting to relativize "the" world -- the whole to which we refer all of our linguistically schematized experience. He is instead equating "the" world with all these particular views of the world:

...seen phenomenologically, the 'thing-in-itself' is...nothing other than the continuity with which the shades of the various perspectives of the perception of objects pass into one another.⁶⁰

The "thing-in-itself" constitutes a continuum of perspectives which is "able to understand from within itself the view of the world that is presented in another language."⁶¹ It is in this sense, we are told, that the linguisticity of our experience of the world is able to transcend all relativity and comprehend all "things-in-themselves:"

In every view of the world the existence of the world-in-itself is implied. It is the whole to which the linguistically schematised experience is referred. The variety of these views of the world does not involve any relativisation of the 'world.' Rather, what

⁵⁹ Gadamer:1975:406.

⁶⁰ Ibid:406.

⁶¹ Ibid:403.

the world is is not different from the views in which it presents itself.⁶²

Gadamer's debt to Kant is clear: language is the new transcendental absolute, as the 18th century notion that everyone's mind is the same becomes the notion that everyone's language is the same. In intuitionist fashion, the world itself — that which is "implied" in every view of the world — stands before us as a never completed manifold, awaiting its "concretion" in relation to the understanding.⁶³

...that which is subjective because of having been created by mind as it thinks the given is nevertheless called objective because we cannot help but think of it as standing apart from us.⁶⁴

The only difference is the contemporary emphasis on the creative power of language:

The light that causes everything to emerge in such a way that it is manifest and comprehensible in itself is the light of the word.⁶⁵

Language is, apparently, "a very special miner's lamp, lighting the way before us, creating the articulations in our path."⁶⁶ Our question now comes to this: Does that which emerges clearly have a sense or character of its own, prior to the act of interpretation? There are times when Gadamer writes as if it does: "Neither jurist nor theologian regards the work of application as

⁶² Ibid:406.

⁶³ Ibid:430.

⁶⁴ Weissman:1987a:72.

⁶⁵ Gadamer:1975:440.

⁶⁶ Weissman:1977:219.

making free with the text."⁶⁷ And "the linguistic world in which we live is not a barrier that prevents knowledge of being in itself.... No one questions that the world can exist without man and perhaps will do so."⁶⁸ But clearly Gadamer is in no position to defend such a world: hermeneutics tells us that we will be incapable of knowing a world apart from our many views or interpretations — for the latter are the very source of the world's intelligibility.

2.4.3.2 Goodman

Searching for one other instance of intuitionist form dictating to content we recall Nelson Goodman's onion metaphor: we subtract off the various versions of the world as we peel an onion down to its empty core: "none of them tells the way the world is, but each of them tells us a way the world is."⁶⁹ Returning to the metaphor of our first chapter, let us consider the following example from Goodman's Ways of Worldmaking. He tells us at one point that there are always "equally good maps of the same territory."⁷⁰ Yet that central point of reference for differing maps proves elusive:

I rejected the picture theory of language on the ground that the structure of a description does not conform to the structure of the world. But I then concluded that there is no such thing as the structure of the world for anything to conform or fail to conform to.⁷¹

⁶⁷ Gadamer:1975:297.

⁶⁸ Ibid:405–6.

⁶⁹ Goodman:1972:31.

⁷⁰ Ibid:15.

⁷¹ Ibid:31.

Gadamer and Goodman have this thought in common: the only world we can know is the one made intelligible to us by our sense-making interpretations: "what the world is is not different from the views in which it presents itself."⁷² Nature, having no form in itself, is reduced to an unthinkable, hence unknowable, void. We are a long way now from those maps and plans described at the start of chapter I. What seemed at first to be merely a pragmatic means of accounting for the many ways of describing a world (or "territory") that does not depend for its nature or existence on those descriptions, has become, in Goodman's hands, a metaphor that has lost its sense, as we are to suppose that a map has value independently of the territory it was designed to represent.

⁷² Gadamer:1975:406.

CHAPTER 3

MATURANA AND INTUITION: THE ONTOLOGY OF THE OBSERVER

3.1 Introduction

In this chapter I offer a hypothetical realist perspective on the theories of Humberto Maturana.¹ I will argue that the anti-realist core of Maturana's "ontology of the observer" arises from an idealistic over-emphasis on the power of human thought or activity to create, circumscribe or otherwise determine the domain of the real: in intuitionist fashion, all of being reduces to some aspect of ourselves, as the conditions for knowledge are to be the conditions for existence. It is in fact ironic that Maturana's doctrine has an explicit ontological dimension. A major concern of the present chapter, therefore, is to demonstrate the inadequate — in fact contradictory — nature of Maturana's particular conception of ontology.

We shall see that Maturana's conception of reality is a purely subject-dependent, even solipsistic notion, whose initial plausibility arises from an unfortunate and subtle equivocation on the independence of the objects of the world from our theories or descriptions. We recall from our initial sketch

¹ Many of Maturana's arguments mirror those put forward by some of the most influential theorists of the modern analytic/linguistic tradition, including the "radical" philosophers of science Kuhn (1962) Feyerabend (1975) and Hanson (1958), Richard Rorty (1979,1981), the "irrealist" Nelson Goodman (1978), as well as the "internal realist" Hilary Putnam (1978, 1981, 1989). In fact, in discussing the "puzzle" of perception, Goodman cites Maturana's early neurophysiological studies of vision as offering some evidence for the conclusion that "the visual system [has] fun making a world to suit itself" (Goodman:1978:73n-79).

of the two dimensions of realism (section 1.3), that to assert the essential independence of the object from thought is to say that the object can exist and have a determinate (or determinable) nature independently of human thought or activity.² It follows from this conception of essential mind-independence, that mind-dependent objects need not exist "in the mind," but merely have their existence imply the existence of human activity or thought.

We should remark that a painting or a chair, for example (but not the raw materials from which they are made), are clearly mind-dependent in this sense. Something is a hammer or chair in virtue of being used in a certain fashion, or being so designed to be used. This holds true, in fact, for all social or cultural objects (including the state, the economy, science, art, and so on) which depend for their existence and nature on purposeful human activity. Does that make realism irrelevant to the social world? Certainly not, for all these (social) things are materialized in, and dependent on, that which is essentially mind-independent, namely: the natural world. In other words, the essential independence goes one way: nature is essentially independent of mind, but mind (and all its products) is not essentially independent of nature.³

I will assume that the successful defense of this decisive independence dimension of realism requires that we adopt something like the scheme-reality dualism outlined in chapter I. In arguing for realism, then, we must continue to reject all inferences from the truism (1) all questions of the form

² In chapter V, I will present and defend the notion that the real consists of the actual and the possible, characterized by their being relatively determinate and determinable, respectively. See also Weissman:1989b:Ch5; 1977.

³ Ruben:1977:74; see also Devitt:1984:14–15.

"what is there?" are necessarily asked within a description or theory, to (2) we "cut up the world into objects" when we chose a certain scheme of representations, description or theory of the world.⁴ That is just to say that we must continue to resist all equivocation on the essential independence of known objects from the knower.

3.2 The Epistemological Contradiction

Before I set out in any detail the particulars of Maturana's system, I should explain the charge of inadequacy I have already directed towards its ontological dimension. The problem arises from the following epistemological contradiction (EC) which results from Maturana's attempt to remain faithful to the intuitionist method while specifying, in abductive inferential fashion, the nature of the living:

The Epistemological Contradiction (EC)

1. Maturana's constructivist intuitionism includes an anti-realist epistemology that insists on the futility of any and all reality claims.
2. Maturana also embraces an ontological theory called structure determinism which contains, like all such theories, a reality claim.⁵

To deny the possibility of all "reality claims" is to adopt a constructivist version of intuitionism that rejects as meaningless any and all ontological claims about the way the world "really is" independent of the knower's

⁴ Putnam:1981:49-53. Rorty follows Putnam's lead when he argues from (1) we never encounter reality "accept under a given description" to (2) we should "see ourselves...as making worlds rather than finding them" (Rorty:1981:xxxix). And here is Maturana's version: "perception should not be viewed as a grasping of an external reality, but rather as the specification of one" (Maturana:1980a:xv).

⁵ In his most recent publication Maturana describes his ontological task as follows: "I intend to show that the observer and observing, as biological phenomena, are ontologically primary with respect to the object and the physical domain of existence" (Maturana:1988a:4).

formative or constructive power.⁶ The constructivist impulse guarantees that our ontology will be a psycho-centric one, animated by the general idea that "the known is always a by-product [or creation] of the knower:"⁷

The transition from naive acquaintance...to the constructivist making of the given marks a fundamental change in the orientation of our intentions. Before we looked at the given or looked for certain things within it. Now, we are to determine, as an act of thought and will, that the given is to be organized in the ways determined by our interests and values....

Constructivism is the intuitionist passion carried to its limit: knowledge is guaranteed when the gap between knower and known is eliminated finally....⁸

Yet we are constrained in this way: having adopted an anti-realist (or constructivist) epistemology we cannot, without contradiction, make any ontological claims about entities or events as they may be independent of our ways of speaking and acting (including perceiving) — what I consider to be the mark of ontological claims in the common sense.⁹ We have noted (section 2.3) that these more common ontological claims are a specification of the domain to which our method applies. The realist interpretation of words

⁶ As first noted in note 24 of chapter I above, the following are the basic principles of radical constructivism: (a) knowledge is not passively received either through the senses or by way of communication; (b) knowledge is actively built up by the cognizing subject; (c) the function of cognition is adaptive (in the biological sense of the term); and (d) cognition serves the subject's organization of the experiential world, not the discovery of an objective reality (von Glasersfeld:1988a:2). Clearly, it is (d) alone that seems to contradict the sort of realism I am defending.

⁷ Held and Pols:1985a:513–4.

⁸ Weissman:1987a:180.

⁹ In Held's and Pols' words: "The contradiction consists in making, on the one hand, reality claims about (in this case) the nature of human cognition/observation — perfectly general claims about how human cognition/observation functions, no matter where or how it is exercised — and, on the other hand, insisting that this function is such that it can never in principle do anything but create its own "reality" (Held and Pols:1987:466).

and thoughts as natural and conventional signs of their objects, for example, commits us not simply to those signs, but to a world of possibilities and actualities whose existence and nature is essentially independent of that activity. We assume that the world contains both human artifacts constructed from nature and myriad natural plants and creatures, including, of course, humans. The specification of the nature of cognition — whether it is a biological phenomenon of the sort Maturana describes or something else — includes a theory of the real differentiations and orders present in that part of the world consisting of the organisms and minds capable of performing cognitive acts. In short, (2) of (EC) above suggests that Maturana is in fact making explicit claims about how things are independent of (any particular) knower.

3.2.1 Epistemological Inconsistency

There is this other consideration. I take (EC) to signal, in D.H. Ruben's phrase, an instance of strong epistemological inconsistency.¹⁰ Two claims are strongly epistemologically inconsistent if (a) they are logically consistent and (b) the truth of one implies that there can be no possible evidence for believing that the other is true. Maturana is committed to strong epistemological inconsistency in believing both (1) and (2) of (EC) to be true: from the truth of (1), there can be no possible evidence for believing that (2) is true (or even meaningful). Alternatively, if Maturana's theory of structure determinism is true, that is, if it correctly identifies some structure, regularities, or relations that hold for all those things that fall within its

¹⁰ See Ruben:1977:23.

domain, then Maturana has identified at least this one reality claim which is exempt from the relativistic strictures set down for all of us in (1).

3.2.2 A Possible Objection

We might anticipate the following sort of objection to this line of reasoning. Maturana could claim, in keeping with his pragmatic outlook, that neither (1) nor (2) are in any meaningful sense true, but merely "useful" in some way, possibly in making sense of our experience. While I will not grant to Maturana the luxury of doing purely conceptual analysis, it still seems to me that this flight from truth to pragmatics does nothing to solve the apparent conflict between the two claims. If one (the first, say, which concerns the lack of any meaningful access to a reality outside of the mind) is used in a way that helps us sort out our experiences, then it should follow, on the pragmatic reading, that our experience is such that this tool "works for us" (rather than "is true").

This assumption about our experience could prove useful, for example, in explaining our apparent inability to decide whether we are simply "brains in vats" or, more generally, to distinguish perceptually between illusions and "reality" (see section 3.5 below). On the other hand, to whatever extent the second, ontological claim (that we are structure determined entities) proves useful as an hypothesis, the clarification that results from applying the first claim to our experiences is lost. It no longer makes sense, in other words, to say that our experience is like we supposed it was as a result of applying the first claim to it. In that case, we could in fact distinguish between the possibility that we are brains in vats and another, better interpretation of our experience; namely, that we are in fact structured the way Maturana's ontological doctrine of structure determinism says we are. It would seem that the epistemological inconsistency between (1) and (2), read as a "pragmatic"

conflict, suggests that the usefulness of one claim depends on the very uselessness of the other.

It would seem implausible to maintain that Maturana is unaware of limits placed on his ontological theory by the explicit anti-realism of constructivist epistemology. Rather, I will argue that he believes his particular ontology to be uniquely capable of attaching to that epistemology without contradiction.¹¹ The obvious candidate for this role is a "subject-dependent" or "relativistic" ontology.¹² But the universal applicability (and truth) of the doctrine seems somehow to have escaped the very relativistic strictures it entails, and Maturana (at times explicitly) offers general ontological claims for that doctrine — hence (2) of (EC) above.

The force of uncovering this confusion of course rests on the implicit assumption that one's epistemology (or theory of knowledge) must be in mutual support with one's ontological commitment to a domain of objects to which our knowledge-claims might apply. One side of that mutuality is well recognized by Maturana (and other anti-realists); namely, that ontology is determined by our method in the sense that "the evidence for [ontology is just what our epistemology, our theory of method and evidence, tells us it is."¹³ However, the idea that our ontology conditions our epistemology, as no theorizing can take place in an "ontological vacuum,"¹⁴ is not as well

¹¹ See Dell:1985:4-5; Held and Pols:1987:457.

¹² Maturana:1978:60.

¹³ Gibson:1989:4.

¹⁴ Ibid:5.

recognized (or even accepted) and will be a point of focus for my criticisms of Maturana.¹⁵

Furthermore, I shall argue that Maturana's "relativistic" or subject-dependent ontology both exemplifies the reduction of being to knowing and serves temporarily to render invisible the epistemological contradiction mentioned above. To anticipate: the idea that something exists-relative-to-a-description only makes sense when taken as a metaphorical way of saying: the description of x exists.¹⁶ The use of the imposition metaphor helps explain one way in which Maturana's doctrine seem successfully to "leave us with some of the familiar world."¹⁷ Yet seen for what it is, this metaphor says

¹⁵ Held and Pols (1987) suggest that some of the defenders of Maturana's doctrine (as outlined at least by Dell:1982; 1985; 1987) are subliminally aware of this contradiction and so take evasive action whenever it threatens to emerge clearly. That action consists in "making a metaphysical/ontological claim when that is necessary for establishing one part of the philosophical doctrine which is being defended, and then depriving that claim of seriousness whenever it begins to become manifest that persistence in the claim will lead to contradiction" (Held and Pols:1987:456). Devitt's analysis of the "radical" philosophers of science (Kuhn and Feyerabend) yields a similar description of those philosophers as "ontologically coy" (Devitt:1984), a concept I will discuss below (section 4.2.1). I do not deny these essentially psychological claims but attempt to account for the "evasive action" and ontological "coyness" alike as necessary counterparts of the intuitionist method.

¹⁶ See Devitt:1984:140.

¹⁷ Ibid:140. Devitt attributes a similar position to Kuhn and Feyerabend. In order to accommodate the "realist rhetoric" of these philosophers of science, Devitt suggests that it is necessary to attribute to them the doctrine he calls "weak" (or fig-leaf) realism (p. 138). Yet we should note that Devitt's doctrine of weak or fig-leaf realism signals the use of that term in only a rhetorical sense. According to that doctrine what exists and has a nature independently of our conceptions is only an ineffable, unknowable thing-in-itself. "Weak realists" then are not committed to the independent existence of the objects of our everyday world or even of science — these things are all "mind dependent" in the sense that their nature and existence depends, roughly, on the ways in which we think about them. Therefore, despite their apparent willingness to talk about a noumenal realm of things-in-themselves, I shall consider them simply idealists. We shall see that the same can be said for Maturana in those rare occasions where he refers to the necessary ontological commitment to a "substratum" that is entailed by his epistemology (section 4.4 below). According to such doctrines commitment is only to the independent existence of Kantian things-in-themselves. The everyday world of common-sense and scientific objects exists only relative-to-theory. We are left with nothing but a world that is, in Rorty's words, "well lost" (Rorty:1981).

nothing at all about a world that is independent of our various ways of describing it. To the extent that Maturana recognizes the metaphorical nature of his "relativistic ontology" the need for evasive action presses to the fore. This is precisely the reason behind Maturana's implicit adoption (in contradiction to his stated anti-realist epistemology) of a non-radically relative ontology. It is of no consequence that Maturana explicitly claims not to be "interested" in a "metaphysical independent reality"¹⁸ for it is a corollary of our analysis of the problems associated with the intuitionist method, that the "lack of sufficient interest [in ontological matters] is not sufficient to prevent one from making a reality claim."¹⁹

My task for the remainder of this chapter will be to consider in some detail Maturana's constitutive ontology of the observer in order to defend my attribution of (EC) to that doctrine. I will tentatively conclude that, despite all the explicit claims to the contrary, there are only two possibilities for resolving this particular tension: (i) Maturana's doctrine might be reinterpreted in the appropriately realist way. This would entail modifying his anti-realist epistemology to account for his apparent access to workings of his ontology of "structure determinism." (ii) Failing to achieve (i) that doctrine might consistently be viewed as a form of radical skepticism or solipsism. Obviously, a "solution" along the lines of (ii) merely rids Maturana of the contradiction between his stated epistemology and his (implicit) ontology while leaving his particular doctrine with nothing to recommend it — nothing, that is, to those (including Maturana) who

¹⁸ Dell:1987:462.

¹⁹ Held and Pols:1987:466.

explicitly reject such doctrines. In this regard I follow Russell²⁰ in supposing that Cartesian doubt carried "too far" reduces philosophy to a mere technical game which loses all seriousness. That is partly because such doubt, once admitted in any particular domain of our knowledge, inevitably undermines knowledge claims almost everywhere.²¹ The most one is left with, as Russell argues, is a very mysterious "solipsism of the moment."²²

Outside of finding a solution along the lines of (i) or (ii) Maturana's theory remains a victim of (EC). Moreover, it does not matter for the purposes of this paper that one may be inclined to accept a solution along the lines of (ii), for Maturana clearly rejects both (i) and (ii).

3.3 Maturana's Ontology of the Observer

Maturana is probably best known to the scientific non-specialist as a co-author (with Lettvin, McCulloch and Pitts) of the paper "What the Frog's Eye Tells the Frog's Brain." Since the publication of that essay, his research has centered on the task of specifying the nature of the living in the form of a systematic, theoretical biology. In the introduction to his early Biology of Cognition (originally published in 1970) he describes that task as finding solutions to two seemingly distinct questions: namely, (1) What takes place in the phenomena of cognition and perception? and (2) What is the organization of the living?²³ His eventual and somewhat surprising conclusion is that cognition and the operation of the living system are in fact

²⁰ Russell:1948:180.

²¹ See Devitt:1984:51.

²² Ibid:181.

²³ Maturana:1980a:xiii-xv.

identical phenomena.²⁴ "All knowing is doing," or more accurately: all knowing is "operating effectively in the domain of existence" brought forth by the observer.²⁵

3.3.1 Structure Determinism

On the basis of his early neuro-physiological studies of color vision, Maturana came to view the nervous system of an observer as a closed, neuronal network — meaning closed to all "information" from the external environment. Let us briefly trace Maturana's reasons for adopting that conclusion.

It follows from the biological nature of perception that one "can never say in absolute terms"²⁶ what constitutes an input to our nervous system, since each of its states, serving as an "input," can modify the system as an interacting unit:

This has two aspects: one refers to the functional organization of the nerve cells which, with their responses, discriminate between different states of relative activity impinging upon them; the other refers to the ability of the nervous system, as a neuronal organization, to discriminate between its own states as

²⁴ Ibid:xvii. Dell (1985) suggests that Maturana's equating of cognition with living "precisely parallels [Gregory] Bateson's equating of mind with...the world of living systems" (p. 5). Dell argues that Maturana's ontology of the observer supplies the necessary ontological counterpart to Bateson's cybernetic epistemology (which contained only an "implicit" ontology) (p. 1). Although Dell finds Bateson's non-ontological cybernetics (which clearly is an instance of the reductive epistemics) "tautological and a bit mystical" (p. 5), he fails to see that Maturana's "relativistic" ontology is similarly inadequate.

²⁵ Maturana and Varela:1988:29-30.

²⁶ Maturana:1980a:38; emphasis added. Maturana is saying something unremarkable here: our percepts are not infallible guides to the structure of the external world, as I can mistake a distant airplane for a bird in flight. Is there anything about the mediated nature of perception that bars us from construing our percepts as natural signs representing something distinct from themselves? Only that we will have to admit the fallible nature of all our knowledge-claims. It is at this point that the methods of hypothesis and intuition diverge, for Maturana, like all intuitionists, is intent upon closing tight the gap between knower and known.

these are distinguished and specified by the further states of activity that they generate. From this capacity of the nervous system to interact discriminately with its own states in a continuous process of self-transformation, regardless of how these states are generated, behavior emerges as a continuum of self-referred functional transformation.²⁷

This "operational closure" of the nervous system is said to "enrich" a notion of living organisms as radically autonomous beings by showing that every process of cognition is necessarily based on the operations of a closed nervous system.²⁸ We shall see that the self-referential nature of cognition and perception, founded in the operations of a closed nervous system, directly implies that all changes within living systems are determined by their own organization and structure. That is to say, living systems are structure determined.²⁹

Maturana's doctrine of structure determinism is a generalized version of his theory of autopoietic organization applied to non-living as well as living entities.³⁰ He coined the term autopoiesis to capture the autonomy implied by the notion of self-referring and structurally determined systems.³¹ Here, then, is Maturana's answer to the second question listed above: Autopoiesis is both necessary and sufficient to characterize the organization of the living.

²⁷ Ibid:38.

²⁸ Maturana and Varela:1988:165-6.

²⁹ In section 4.2 I will provide a further treatment of structure determinism as it relates to the discussion there of the ontology of intuitionism.

³⁰ See Dell:1985.

³¹ Maturana introduced the term "autopoiesis" in his 1972 essay "Autopoiesis: The Organization of the Living." Prior to that essay he relied on the expressions "circular organization" and "self-referential systems" to make reference to the same phenomenon.

[I]t is the circularity of its organization that makes a living system a unit of interactions, and it is this circularity that it must maintain in order to remain a living system and to retain its identity through different interactions.³²

These interactions in turn "generate language, description and thinking."³³ Maturana is claiming no less than this: the process of cognition is a "strictly subject dependent creative process."³⁴ Paul Dell comments on the significance of Maturana's "seemingly modest" characterization of the organization of the living:

...if the organization of a living system is circular, then that organization is a closed organization — not thermodynamically closed, but organizationally closed. The significance of organizational closure is that it directly implies autonomy.... Each living system has its own autonomous individuality because the nature of its structure fully specifies how the system will behave under any and all interactions.... Because interactions with the environment cannot specify how an organizationally closed living system will behave, it therefore must be the case that such systems do not have inputs (and outputs)!³⁵

In other words, living systems qua closed autopoietic systems cannot receive any information at all. Living systems like humans are, in the cybernetician W.R. Ashby's words, "information tight:" it is the structure of the living system — and not any characteristic of the information "received from the environment" — that determines how it will "behave" or respond "under any and all interactions":³⁶

³² Maturana:1980a:9.

³³ Ibid:v.

³⁴ Ibid:49.

³⁵ Dell:1985:6.

³⁶ Ibid:6.

For every living system its particular case of self-referring circular organization specifies a closed domain of interactions that is its cognitive domain, and no interaction is possible for it which is not prescribed by this organization.³⁷

3.3.2 Structure Determinism and Cognition

It is not simply the behavior or actions of an living system that are so internally determined but what one can know, or believe, as well. Here then, in rough detail, is Maturana's justification for adopting his anti-realist epistemology. The cognitive domain of a living system, given its self-referring circular organization, places absolute limits on the possible interactions (including cognition and perception) available to that system:

...accordingly, for every living system the process of cognition consists in the creation of a field of behavior through its actual conduct in its closed domain of interactions, and not in the apprehension or the description of an independent universe.³⁸

3.3.3 A Realist Response

An adequate assessment of this anti-realist conclusion must come after the more detailed account of Maturana's system provided below. Yet we might consider the outlines of a realist response at this most general level. Let us assume that Maturana equivocates on the notion of an "independent universe." One could either interpret this last quotation as either (1) making the plausible claim that we are incapable of knowing or describing an "independent universe" of Kantian things-in-themselves; or (2) suggesting, pace Putnam, that the independent universe that the metaphysical realist purports to know and describe requires a "God's eye view" which lies outside the possible "domain of interactions" available to humans. (1), we have said,

³⁷ Maturana:1980a:49.

³⁸ Ibid:49.

poses no threat to the kind of realism we hope to defend, and therefore to any world "worth fighting for." (2) is probably closer to the view that Maturana actually holds. Yet Maturana continues to equivocate on the notion of independence, this time in terms of our independence from an observer-generated "medium" in which we are to exist. Maturana writes: "living systems are autonomous entities, even though they depend on a medium for their concrete existence and material interchange."³⁹ Does this medium upon which we all depend represent a description or apprehension of some aspect of the external world (or "independent universe")? It could not, assuming that we are indeed closed to all information external to our nervous system in the way that the theory of structure determinism requires.

Maturana is often very explicit about this. He insists on the necessarily subject-dependent nature of our scientific claims, including, of course, all attempts to describe or explain the relations that hold between an entity and its medium.⁴⁰ The specific scientific explanations he is interested in supporting — and the only statements that are in his view scientific — are "subject dependent, valid only in the domain of interactions in which the...observer exists and operates."⁴¹ The idea that we are capable of describing or knowing any aspect of a world external to the observer on which "we

³⁹ Maturana:1978:36; emphasis added.

⁴⁰ Ibid:28–9.

⁴¹ Ibid:29. See also Section 4.3 below. He in fact claims that such statements are only valid in relation to the situation facing the standard observer, a qualification that seemingly allows him to escape the solipsistic implications of not so characterizing the observer. However, it is clear from his epistemology that such a distinction (that of a standard observer from, I suppose, a particular observer like himself) is entirely dependent on the cognitive operations of a particular observer. So he is still left with the isolated observer and his or her operations of distinction.

depend"⁴² is obviously rendered impossible. Indeed, the very question, "what is the object of knowledge?" is for Maturana a meaningless one:

There is no object of knowledge. To know is to be able to operate adequately in an individual or cooperative situation.⁴³

An "adequate" operation is one that is directly or indirectly subservient to the maintenance of a person's living organization or autopoiesis. These operations serve as the only final source of reference for truth and rationality, while the self-referential nature of persons makes all such frames of reference necessarily "relative" in a very strong (i.e., solipsistic) sense.⁴⁴ In order to draw out these radically idealist elements, let us now take a closer look at the type of operations Maturana assigns to living systems.

3.4 Cognitive Distinctions and Existence

Consider the following dictum: "Everything said is said by someone."⁴⁵ Is this a mere truism? On the contrary, I suggest that Maturana has coined his own intuitionist version of the cogito that serves, like the a priori truth of "I think, I exist," as the unqualified foundation for his every other claim. This is apparent in Maturana's treatment of "unities." His claim is that "unity" (distinguishability from a background and, hence, from other unities) is the "sole necessary condition for existence in any given domain."⁴⁶ Unities are those entities which result from the performance of our most "basic cognitive

⁴² Maturana:1978:36.

⁴³ Ibid:53.

⁴⁴ Ibid:57.

⁴⁵ Maturana and Varela:1988:27; Maturana:1980a:xxii; 1988a:12.

⁴⁶ Maturana:1980a:96.

operation"— the operation of distinction. By means of this operation, and acting as "observers,"⁴⁷

...we specify a unity as an entity distinct from a background, characterize both unity and background with the properties with which this operation endows them, and specify their separability. A unity thus specified is a simple unity that defines through its properties the space in which it exists and the phenomenal domain which it may generate in its interactions with other unities.⁴⁸

It follows from Maturana's constructivism that this most basic cognitive act, distinguishing a unity from its background (and thereby defining its domain of interactions or "medium"), supplies all of the "reality" that either the entity or its medium can possess:

A universe comes into being when a space is severed into two. A unity is defined. The description, invention and manipulation of unities is at the base of all scientific inquiry.⁴⁹

We recall that Maturana also maintains, quite reasonably, that "living systems depend on a medium for their concrete existence."⁵⁰ We can now add to our initial sketch of the realist response to Maturana's equivocation on the relation between an observer and his or her medium. Our question comes to this: How could an autonomous living human being — a "subject" — both determine the nature of its relation with its environment (or

⁴⁷ An observer, for Maturana, is any being operating in language. In the case of humans, language (or the act of "languageing") is a situation we "find ourselves in," rather than see ourselves growing into it (1988a:12). We are already observers in language when we begin to reflect on our universal situation as language-users and the linguisticity of observing. It follows that "whatever takes place in the praxis of living of the observer, takes place as distinctions in language through languageing" (Ibid:12). See also section 2.4.1 above.

⁴⁸ Ibid:xix.

⁴⁹ Maturana and Varela:1980:73.

⁵⁰ Maturana:1978:36.

medium) and have its "concrete existence" determined by that same medium? Maturana suggests that "medium" is equivalent to "domain of interactions."⁵¹ However, since all domains of interaction are defined upon the specification of a unity by an observer ("a universe comes into being when a space is severed into two") the very nature and existence of that medium is entirely dependent upon the operations of distinction performed by the observer. Maturana cannot have it both ways: either the operations of distinctions of the observer "create" the medium in which he or she will live, or those operations are dependent in some way on the prior existence of that medium.

While Maturana does invoke a distinction between the "characterization" of a unity and the knowledge available to the observer of that unity, where the former consists in a "pointing to" the properties or organization of the unity and the latter consists in a "handling [description, I take it] of them in a metadomain of descriptions with respect to the domain in which he characterizes them," he readily admits that this distinction does not negate their common character as cognitive entities "belong[ing] to the descriptive domain."⁵² These remarks suggest that the medium is and can be nothing but a cognitive entity, and that Maturana's description of the medium determining concrete existence is merely a misleading (to the extent that the reader thinks that he or she is still in possession of something of the real world) way of underlining the mind-dependent nature of all reality.⁵³

⁵¹ Maturana:1980a:xxi.

⁵² Ibid:xxiii.

⁵³ Held and Pols (1987) reserve the phrase "Pickwickian" ontology for Maturana's "uncommon" use of that word. They suggest, rightly, that Maturana (as well as Bateson (1972) and Dell

It is clear that Maturana's dictum "everything said is said by an observer"⁵⁴ is not meant merely to underline the obvious and quite unobjectionable fact that all of our descriptions, theories, and claims about the world that result in the specification of a unity are cognitive distinctions. Maturana wants to make the stronger claim (that is neither obvious nor entailed by the language- or concept-dependent status of our descriptions⁵⁵) that the existence and nature of every unity is entirely dependent on the operation of distinction performed by the observer. Here Maturana signals his rejection of the independence dimension of traditional realist claims along with any ontological commitments beyond those of his psycho-centric intuitionism. Maturana is quite clear about this: "the entity characterized [by the distinctions made by an observer] is a cognitive entity".⁵⁶

On the assumption that we are constitutively unable to specify the independence dimension of realism, realist talk about mind-independent entities must simply represent "distinctions upon distinctions" which result in a "metadomain of descriptions" in which the cognitive statements about those entities are made.⁵⁷ Entities are, therefore nothing but cognitive entities, but once characterized

(1985)) switches between the characterization of "structure determinism" as an ontology in the common meaning of that term and an ontology in the Pickwickian sense, or what I have been referring to as a subject-dependent or "relativistic" ontology (Held and Pols:1987:457).

⁵⁴ Maturana:1980a:xxii.

⁵⁵ As Rorty (1979) rightly notes, there is 'no inference from "one cannot give a theory-independent description of a thing" to "there can be no theory-independent things"' (p. 279). But see note 4 above.

⁵⁶ Maturana:1980a:xxiii; emphasis added.

⁵⁷ Ibid:xxiii.

...the characterization is also subject to cognitive distinctions valid in the metadomain in which they are made by treating the characterization as an independent entity subject to contextual descriptions.⁵⁸

While talk of metadomains is confusing, one thing is clear: the notion that entities of our everyday world (or of science⁵⁹) exist and have a determinate nature independently of the cognitive powers (operations of distinction) of the mind is, for Maturana, a priori false, since it is precisely that mental activity which confers upon the entities of the world both their existence and nature:

Thus, [the observer] both creates (invents) relations and generates (specifies) the world (domain of interactions) in which he lives by continuously expanding his cognitive domain through recursive descriptions and representations of his interactions.... From this it follows that reality as a universe of independent entities about which we can talk is, necessarily, a fiction of the purely descriptive domain, and that we should in fact apply the notion of reality to this very domain of descriptions in which we, the describing system, interact with our descriptions as if with independent entities.⁶⁰

As I noted above (section 2.4.1), Maturana is clearly an intuitionist of form. His act of making "recursive descriptions" — like Kant's object-constituting power of the mind — is clearly something that is internal to the mind. So also must be the "raw material" (in this case, our very descriptions) that is worked up in this fashion and that constitutes that which Maturana

⁵⁸ Ibid:xxiii; emphasis added.

⁵⁹ As we shall see in the following chapter (4.3), Maturana explicitly rejects the independent existence of so-called scientific entities as well as those of everyday life (See Maturana:1988a:45).

⁶⁰ Maturana:1980a:51–2. It is telling to note that despite all this emphasis on the "reality" of the descriptive domain, in the beginning pages of their The Tree of Knowledge, Maturana and Varela claim that their position can only be understood by the reader if he or she "has a direct experience that goes beyond all mere description" (p. 16).

enjoins us to "apply the notion of reality to" (in contrast to the fictional reality of "independent entities").⁶¹ All that really exists, on this view, is the mind and the ever expanding domain of descriptions that constitute a "world" created and sustained by the observer.

How do we make a world? We do it...by using a conceptual system to schematize sensory data. That system is a complex of thinkable forms, so that projecting its differences and relations onto the data makes them thinkable too. Mind, now having this experience arrayed before it, inspects a "world" that mind has itself created.⁶²

Ironically, Maturana himself notes that the price paid for supposing that "only one's interior life exists" is solipsism.⁶³ Yet Maturana's foundationalist insistence upon "theorizing from scratch"⁶⁴ presents a picture of isolated individuals locked within their minds, with only the Cartesian dictum "everything said is said by someone" (or, more accurately, myself) to help them sort things out. What kinds of things is Maturana able to sort out? While Maturana is apparently willing to assume that certain theoretical

⁶¹ See also Ruben:1977:Ch1, where he argues that Kant's commitment ("independence claim") to the existence of "pre-conceptualized intuitions" that are essentially independent of the synthesizing operations of the mind is strongly epistemologically inconsistent with Kant's "interpretation claim" that any judgement or claims to knowledge necessarily presuppose the activity of interpretive thought. This instance of strong epistemological inconsistency is one that arises within the phenomenal realm and is not to be confused with the parallel inconsistency to be found in talking of noumena while holding that all knowledge is of phenomena. Yet the pre-conceptualized intuitions of the phenomenal realm are as unknowable as things-in-themselves: they stand in no relation whatsoever to the synthesis of the understanding.

⁶² Weissman:1989b:74.

⁶³ Maturana and Varela:1988:134.

⁶⁴ This is Devitt's phrase (Devitt:1984:194). Maturana would presumably agree with Putnam's characterization of metaphysical realism as relying on a "magical theory of reference" (Putnam:181:47). The reason for that should be clear: in starting from a prison-house conception of language, both see the realist as attempting to "speak the unspeakable."

and operational constraints on knowledge are immediately accessible to the mind (namely, that "we should apply the notion of reality to a domain of descriptions"), those constraints clearly prevent any and all reference to a mind-independent reality and, therefore, to that which is other than "one's interior life."

Maturana is clearly guilty of equivocation between constructing theories and constructing the world. There can be no question that we construct our theories of the world, and talk that accompanies that activity about "cutting up" and "imposing on" experience makes good sense.⁶⁵ But this is quite different from saying that we construct reality or that we construct the world. It is important, therefore, that we clearly distinguish between these two sorts of activity, the one performed as we create or fashion certain things (like linguistic conventions and social contracts), the other as we use signs to represent possible states of affairs in the external world:

We can decide what to search for within the world; but then we are not also free to decide, by creating rules for meaning and truth, all that is present there. We do stipulate what red shall signify, but not that anything is red. We have obscured this difference by emphasizing the activities best expressing our autonomy, as novelists create fantasy worlds and legislators write the laws creating social order. These examples are distractions from the task of formulating and testing hypotheses about those things whose existence and character are independent of thought and language.⁶⁶

⁶⁵ Part of the reason for this is that perception is selective. Mundle suggests the following ways in which that selectivity can manifest itself: "(a) that we can select what we see, touch, hear, etc., by controlling our movements; (b) that we can select which perceptible properties of objects, or which qualities of sense-data, we discriminate, by controlling our attention; (c) that the sensory apparatus with which we are endowed is selective in the sense that it discloses only some of the things around us (e.g. not bacteria) and only some of their properties (not e.g. their reflectance of ultra-violet waves)" (Mundle:1971:91-92).

⁶⁶ Weissman:1989b:71.

We must recognize the metaphorical nature of all talk of the mind or language imposing on the world. This is a point crucial for our analysis which claims to be uncovering tacit ontological commitments:

...it is very important to the appeal of the imposition view that [this] metaphor be taken literally. For then we still seem to have the world.⁶⁷

Taking that metaphor literally means supposing that the operations of the mind or language are such that they create or produce the objects of the world:

Without language and outside language there are no objects...we human beings are objects in a domain of objects that we bring forth and operate upon in language....⁶⁸

In what sense does Maturana still "seem to have the world"? Does it matter that he replaces the realist's ontological commitment to cities, trees and (possibly) electrons with phenomenal (meta-) domains or experiential distinctions? Is there anything in his system that speaks against this reduction of all reality to the ambit of inspecting mind? I will now attempt to answer these questions in the context of Maturana's treatment of perceptual illusions.

3.5 Maturana's Skepticism

Getting their start from a consideration of some common perceptual illusions, Maturana and Varela note that what we often take as simple apprehension of something (such as color) "has the indelible mark of our

⁶⁷ Devitt:1984:140.

⁶⁸ Maturana:1988a:38.

own structure."⁶⁹ Commenting on two common visual illusions, they note that these simple experiments "...[do] not reveal an isolated situation that could be called (as is often the case) marginal or illusory."⁷⁰ All this is valid, they claim, for "any other perceptual modality."⁷¹ We naively class daily experiences like these as illusions or hallucinations and not as perceptions "...claiming that they do not constitute the capture of an independent reality."⁷²

In other words, relying on a version of Cartesian skepticism and faced with the idea that scientific experiments can be used to demonstrate that the senses (most notably vision⁷³) can be fooled, Maturana, in *reductio ad*

⁶⁹ Maturana and Varela:1988:22. Here is Maturana's most recent example: "If one looks at the two shadows of an object that simultaneously partially intercepts the paths of two different lights, one white and one red, and if one has trichromatic vision, then one sees that the area of the shadow from the white light that receives red light looks red, and that the area of the shadow from the red light that receives white light looks blue-green" (Maturana:1988a:9). The illusion is unavoidable: our experience of the illusion is unchanged by the knowledge that the area of the shadow from the red light "should look white or gray" because it receives only white light (Ibid:9).

⁷⁰ Maturana and Varela:1988:21.

⁷¹ Ibid:21.

⁷² Maturana:1988a:10.

⁷³ Devitt suggests a reason for the common emphasis on this particular perceptual modality in discussions of illusions. It is that intuitionists (he does not use the word) assign special significance to observability, which in turn is uncritically conflated with sight (Devitt: 1984:130). Van Fraassen (1980), for example, claims that a theory is "empirically adequate" if and only if it correctly describes what is "observable" (pp. 4–12). Theories may otherwise "save the phenomena" but cannot be said to describe an independent reality (Giere:1987:224). We should remain "agnostic" about that reality (Devitt:1984:126–128). Van Fraassen seems to think that the conclusion of empirical adequacy is somehow better supported than the scientific realist's on the grounds that the former does not go beyond that which is directly observable. (We can define "observational belief" as one that follows from an object *x* triggering a human's sense organs in a way that leads her to judge, for example, that *x* is *F*. If this belief follows without inferring it from some other belief, then we can say that she observed that *x* is *F*.) Giere points out on the logic of "satisficing" that the "logically weaker" claims of Van Fraassen's constructive empiricism do not necessarily add up to a more "adequate"

absurdum fashion, uses that idea to then do away with science as the study of an "objective" (mind-independent) reality. Clearly much of the literature that talks about "brains in vats" and other rather fanciful reactions to the skeptical challenge contained in Descartes' First Meditation gets their start from this seemingly scientifically consistent view of perception that admits of no possible evidential or experiential distinction between perception and illusion. That the evidences of our senses "underdetermines" our views of "what there is" (or, alternatively, that theory "overdetermines" the evidence) leads many to suggest that this scientific view of perception (that admits of underdetermination) is consistent with radically opposed views of the nature of cognition. In particular many critics of a realist theory of perception infer that

[t]he mere fact that a person, as a result of a perceptual experience, comes to believe that a certain object is in front of him does not establish that it is in front of him. It is compatible with our theory of perception that he should come to this belief and yet there be no such object in front of him. It is compatible with that theory that he should come to beliefs about the external world as a result of perceptual experiences and yet there be no such world at all.⁷⁴

Does it now follow that scientific knowledge has in a way given rise to skepticism? That seems to be Quine's view:

explanation: "If we assign equal value to the truth of both empiricist and realist hypotheses, the empiricist hypothesis, being more probable, would have greater expected value.... But of course the realist would assign greater scientific value to true realistic hypotheses, which could give them greater expected value. So a realistic satisficer need not even be in the position of settling for second best" (Giere:1987:225). Even more to the point, our beliefs about observable entities (non-inferential beliefs in the sense noted above) may be just as fallible as many of our inferential beliefs about unobservables: "The [non-inferential, observational] belief is not 'given' to the sensory input" (Devitt:1984:132). It is, like all our beliefs, a result of human processing and interpretation.

⁷⁴ Devitt:1984:50. That is just to say that realists take fallibilism (not skepticism) seriously: one could be wrong about almost anything. Arguments designed to show, for example, that we just could not be "brains in vats" will fail for this reason.

Doubt prompts the theory of knowledge, yes; but knowledge, also, was that which prompted the doubt. Skepticism is an offshoot of science. The basis for skepticism is that awareness of illusion, the discovery that we must not always believe our eyes. Skepticism battens on mirages, on seemingly bent sticks in water, on rainbows, after-images, double images, dreams. But in what sense are these illusions? In the sense that they seem to be material objects which they in fact are not. Illusions are illusions relative to a prior acceptance of genuine bodies with which to contrast them.... [E]xamples of mirages...and the rest are similarly parasitic upon positive science, however primitive.⁷⁵

This is not to accuse the skeptic, however, of begging the question:

He is quite within his rights in assuming science in order to refute science; this if carried out, would be a straightforward argument by *reductio ad absurdum*. I am only making the point that skeptical doubts are scientific doubts.⁷⁶

Quine concludes on the basis of his claim that skepticism presupposes science, that science is therefore justified in using scientific knowledge in its own defense. Barry Stroud (1984) has criticized Quine on just this point. Stroud suggests that Quine's admission that the skeptic is "within his rights" to argue by *reductio* that so-called scientific knowledge is false, undercuts the scientist's ability to use that (scientific) knowledge after the *reductio* has shown it to be, as Quine indeed admits, "vulnerable to illusion on its own showing."⁷⁷ Quine's reaction to this challenge is to claim that the skeptic is "overreacting."⁷⁸

⁷⁵ Quine:1975:67-8.

⁷⁶ Ibid:68.

⁷⁷ Quoted in Gibson:1989:4. Devitt makes the same point with regard to the type of "Realism" he hopes to defend (but not against the skeptic): "...the skeptic need not make any knowledge or (belief) claims. He asks the Realist to justify his position and uses assumptions that the Realist seems in no position to deny to show that these attempted justifications fail.... The argument therefore, is something of a *reductio* of Realism: the Realist perspective itself shows Realism to be unjustified" (Devitt:1984:48-9). But Devitt may be giving up to the skeptic more

Stroud has interpreted this charge as meaning that the skeptical position is relatively "unconfirmed" in comparison with some other views.⁷⁹ This is clearly not what Quine had in mind (at least in his more realist moments).⁸⁰ It is rather that the skeptic's mistake lies in the failure to appreciate how epistemology and ontology reciprocally contain one another. As I have noted, the skeptic does recognize one direction of the containment; namely, the extent to which epistemology contains ontology. The skeptic is well aware that our theories of method and evidence (our epistemology) determine what our scientific claims about the world (our ontology) might look like. What the skeptic overlooks is the extent to which ontology contains epistemology:

The skeptic may indeed use a portion of science to bring doubt to bear upon science, but only by presupposing the truth of other portions of science.... Skepticism...presupposes some further ontology: "we might reasonably doubt our theory of nature even in its broadest outlines. But our doubts would still be immanent, and of a piece with the scientific endeavor" [Quine]. Never can all ontological commitments be doubted simultaneously; one would be "overreacting" if one thought otherwise.⁸¹

than is necessary. I cannot argue the point here, but see Tom Vinci's (1986) review of Stroud's book where he argues that the reductio can not successfully be used against science as a whole.

⁷⁸ Gibson:1989:4.

⁷⁹ Ibid:4. This also appears to be Russman's view, when he refers to skepticism about the external world as a "massively strong conclusion drawn from an insipidly weak premise" [e.g., that we might be dreaming] (1987:36).

⁸⁰ See Weissman:1987a:283–287 for an analysis of Quine's intuitionism.

⁸¹ Gibson:1989:5.

In short, as I have already suggested, epistemology does not occur in an "ontological vacuum."⁸² This is consistent with the view expressed in chapter II above, that every philosophical method has both ontological and psychological assumptions. That is an important point for our analysis which claims to be uncovering a reality (ontological) claim in Maturana's theory of structure determinism. Maturana would apparently accept this description of his efforts as resting on scientific presuppositions — but with a difference: his version of science does away with the "objects" of knowledge:

[Our] explanation of cognitive phenomena...is based on the tradition of science and is valid insofar as it satisfies scientific criteria. It is singular within that tradition, however, in that it brings forth a basic conceptual change: cognition does not concern objects, for cognition is effective action....⁸³

The argument from illusion, and in general the skeptical challenge to knowledge, often begins from a scientific (indeed physicalistic⁸⁴) view of the world — this much Maturana (and other skeptics) is likely to accept. Yet his anti-realist epistemology compels him to adopt the idealist conclusion that "cognition does not concern objects." Put somewhat differently, and in a way that highlights his initial (and paradoxically realist) commitments, Maturana's claim appears to be that the scientific realist viewpoint undermines the common-sense realist one. As Devitt writes,

The area of common sense that seems most threatened by science is that concerned with the secondary qualities, especially that concerned with colors.... The problem is that physics seems not to countenance them:...the world of physics is a colorless,

⁸² Ibid:5.

⁸³ Maturana and Varela:1988:244.

⁸⁴ See Vinci:1986:section V.

soundless, odorless, and tasteless world.... So it is only from the physicalist standpoint that science threatens the common-sense view of the secondary qualities. Further it is only from the scientific realist standpoint that science threatens common sense.⁸⁵

Let us put aside for the moment this problem of accounting for the so-called "secondary qualities" of objects and ask whether Maturana supplies any reasons for adopting his radically idealist view of common sense or scientific entities. We shall see that he does not. I will first consider his curious use of the word "world" (3.6) and then take up in more detail the problem of the underdetermination of our theories by that world (3.7).

3.6 On Worldmaking

Shortly after making the recommendation that we "put a question mark on any perceptual certainty" Maturana writes:

...this connection between action and experience, this inseparability between a particular way of being and how the world appears to us, tells us that every act of knowing brings forth a world.... [E]verything said is said by someone. Every reflection brings forth a world.⁸⁶

That the world (call it "meaning-1") underdetermines our theories of the world (which are in part determined by our "particular way[s] of being" and mode of "reflection") is considered sufficient reason to have the latter theories replace the former, at least in the sense that they too merit the characterization "world" (call it "meaning-2"). Clearly, however, this

⁸⁵ Devitt:1984:69. It is of course open to the realist who wishes to defend the common-sense view of objects and their secondary qualities to adopt a pragmatic perspective on a portion of physics. From this perspective some of the posits of that science receive a purely instrumental interpretation: electrons, muons and curved space-time are simply instruments for dealing with the observable world. But this is just to show that the common-sense view of the secondary qualities of objects is left untouched by the theories of physics.

⁸⁶ Maturana:1988a:10-26.

complex characterization of Maturana's use of the word merely underlines the fact that the word "world" has changed its referent:

Before, it [world (meaning-1)] signified nature, including us humans as we are located within it. Now, "world" [meaning-2] refers only to the experience created when sensory data are differentiated and organized by the system used for thinking them.⁸⁷

Assume world (meaning-2) broadly refers to our experience. What then is left of the world (meaning-1)? Maturana does invoke the specter of an amorphous "substratum" the expectation of which is needed, he claims, for "epistemological reasons."⁸⁸ It is important that he does not claim that the existence of the substratum is an epistemological necessity. Indeed, he cannot say that, since he also maintains that "nothing [including the substratum, presumably] pre-exists its distinction [by an observer]."⁸⁹

If I have interpreted him aright, we merely operate as if there were a substratum. The reason for that is as follows. All scientific claims, according to Maturana, involve the specification of a "mechanism" that is able to "generate the phenomenon to be explained in the domain of experiences...of the observer."⁹⁰ Furthermore, the generative nature of this mechanism is "constitutive" to the scientific explanation itself. It is important to note that we are remaining within the realm of observer-dependent distinctions. That is to say that Maturana is not claiming to be describing the nature of anything

⁸⁷ Weissman:1989a:514.

⁸⁸ Maturana:1988a:47; see Section 4.4 below.

⁸⁹ Ibid:45.

⁹⁰ Ibid:45.

external to the scientific explanation itself (as in Peirce's use of abduction,⁹¹ Hanson's retroduction,⁹² or Devitt's inference to the best explanation⁹³), although he does refer to this as an "ontological condition" of science. We are not to suppose that this seemingly abductive inference posits some real structure capable of causing the experience in question. Yet we do "feel the urge" — in science as well as "everyday life" — to "ask for the existence of a substratum independent of the observer in which everything [including the operation of the above generative mechanism] takes place."⁹⁴ But just as soon as we attempt to talk about, "language," or make any sense of the notion of a substratum we "lose" it:

Through language we remain in language, and we lose the substratum as soon as we attempt to language it. We need the substratum for epistemological reasons, but in the substratum there is nothing (no-thing) because things belong to language. In other words, nothing exists in the substratum.⁹⁵

Maturana now faces the formidable (it would seem impossible) task of explaining how we achieve sufficient grasp of "it" (remember: "it" is "no-thing" or property) even to say what Maturana says of "it;" namely, that we "need it for epistemological reasons" or that "it permits what it permits." It would seem more accurate to say that we never even had this "world" (the substratum) to lose. We are rightly suspicious of this "it" which can have no

⁹¹ Pierce:1965.

⁹² Hanson:1958:90.

⁹³ Devitt:1988:144-6.

⁹⁴ Maturana:1988a:45.

⁹⁵ Ibid:46.

properties so long as we suppose that having properties is a necessary condition for the existence of anything at all.

We can step back now and make the following claim. All this rather mystical talk of the substratum follows directly from Maturana's unique combination of three errors: he (1) fails to appreciate the condition of independence of the world from our descriptions and theories (CI);⁹⁶ (2) adopts a linguistic variant of reductive epistemics⁹⁷ in assuming that "things belong [exclusively] to language;" and (3) adopts a relativized-to-a-language ontology in order to accommodate his explicitly idealist epistemology.

Let us assume for the moment that Maturana is entitled to speak of an ineffable realm of things-in-themselves. What then could we conclude about the constraining properties of that non-existent, unspecifiable realm? All that we could say is that "we are constrained and that's that."⁹⁸ Used in this fashion the notion of constraint has no explanatory value at all. And that is why we consider it an idle addition to idealism. It is worth repeating at this point that realists, in holding to my condition of independence (CI), need not (indeed should not) argue for the independent existence of a world of things-in-themselves forever beyond our ken. And Maturana has made it abundantly clear that he is not "interested" in that world either.

Now Maturana could maintain that these worlds (meaning-2) that are brought forth by reflection are just not the world (meaning-1) alluded to a

⁹⁶ See section 1.2 above.

⁹⁷ See note 12 of chapter II above.

⁹⁸ Devitt:1984:192. Note the similarity between Devitt's conclusion and what Maturana ends in saying ("linguaging") about the "substratum" (his version of this unspecifiable realm): "all we can say is that it permits what it permits..." (Maturana:1988a:47).

page earlier. It is perfectly legitimate to use the word "world" in two (or more) distinct ways, so long as it is clear at any point which meaning is implied. So Maturana is completely within his rights to use the word "world" to refer to that which is "brought forth" (worlds (meaning-2)) in "someone's" reflections on the world (meaning-1).⁹⁹ But given Maturana's anti-realist claim that there can be no talk of "things" existing independently of what the observer "does," he is not left with two "worlds" — one (meaning-1) referring to that common world of natural things that the realist sees as the cause, or ontological grounding, of our experience, and another (meaning-2) which results from a particular way of "being" or "reflecting." There are, for Maturana, only these latter, "subject-dependent" realities:¹⁰⁰

Without observers nothing can be said, nothing can be explained, nothing can be claimed...in fact, without observers nothing exists, because existence is specified in the operation of distinction of the observer.¹⁰¹

In other words, existence, as something that is "specified in the operation of the observer," is just another attribute of entities that we, acting as observers, confer upon those "things" that we create in the process of carving up our experience. That ferrets and trees — or even people other than the observer for that matter — come to exist and have certain properties is entirely dependent on the "subject-dependent," human activity of making distinctions:

⁹⁹ Maturana:1988a:33.

¹⁰⁰ Maturana:1978:62.

¹⁰¹ Maturana:1988a:46-7.

The operation of distinction that brings forth and specifies a unity, also brings forth and specifies its domain of existence....¹⁰²

It should be clear at this point that Maturana, taken literally and with his tacit ontological commitments aside, is not even a "weak" realist, in Devitt's sense. He is not in anyway committed to, that is, the independent existence of unknowable, unspecifiable things-in-themselves. He is simply a metaphysical idealist. The world he can claim to have saved is nothing other than the world (meaning-2) of Putnam's solution to the referential gap between our theories and the world (meaning-1) that consists in the (metaphorical) situation where "the mind and the world jointly make up the mind and the world."¹⁰³ That solution amounts to an unqualified rejection of the very idea of a mind-independent reality where objects or things do not exist independently of our thinking or making. Rather, we make the world determinate as we "cut up" the world into objects by our descriptive activity. Neither should we suppose that this construction of objects is from conceptually uncontaminated experiential inputs — for those inputs are themselves the creation of that activity.

3.7 The Role of the Observer

As I briefly indicated above, science only threatens to undermine our common-sense view of objects when taken realistically and physicalistically (an anti-realist or non-physicalist view of science would seem to be irrelevant to the common-sense view). And so taken, the most that we could possibly conclude is that our common sense view of objects is "error-

¹⁰² Ibid:16.

¹⁰³ Putnam:1987:1; see also section 4.2.1.1 below.

ridden,"¹⁰⁴ or that we "cannot know some of the things that we think we know" about these objects.¹⁰⁵ We are certainly not entitled to the idealist conclusion that these objects do not exist:

To get the anti-realist conclusion we need the further premise that any common-sense physical object must have secondary qualities. But there seems to be no good reason for anyone who, on scientific grounds, is anti-objectivist to adopt this essentialist premise. Rather, he should view a common-sense physical object as a system of unobservable particles that is wrongly thought to have secondary qualities.¹⁰⁶

If we were to adopt such a fallibilistic and realist position, what might we conclude from Maturana's treatment of illusions? Maturana's own claim is that our experiences of illusions — as experiences that "we can not deny,"

...show how our experience is moored to our structure in a binding way. We do not see the "space" of the world; we live our field of vision. We do not see the "colors" of the world; we live our chromatic space.¹⁰⁷

Two comments are in order. First, who would doubt that "our experience is moored to our structure in a binding way"? It would be absurd to maintain that we could experience, or come to know, anything in a way that was not somehow dependent on our "structure." Specifically, there are at least three ways in which our structure (including our language) might limit our power for representing things external to us:

(1) We might lack the inferential or perceptual powers for learning about them....; (2) Our imaginations might be too feeble

¹⁰⁴ Devitt:1984:69.

¹⁰⁵ Vinci:1986:571.

¹⁰⁶ Ibid:69.

¹⁰⁷ Maturana and Varela:1988:21–3.

for extrapolating from the information we do have; [and] (3) We have a limited vocabulary of words and grammatical forms for representing things.¹⁰⁸

Maturana's objection to this realist interpretation of our situation evokes Putnam's unreasonable suggestion that realism, in speaking the unspeakable, involves a commitment to judging, without dependence on any concepts at all, whether our theories are true of reality.¹⁰⁹

Second, and following up our analysis in section 3.6, we may now ask: What is the "world" to which Maturana and Varela make reference in this last passage? Is it a world (meaning-1) that exists and has a nature (even though that nature may not be captured by our colorful and spatial ways of "living" in it) which is independent of our particular "ways of seeing?" Clearly, the idea that objects lack secondary qualities like color does not entail the more radical thesis that these objects do not exist, but merely that our common-sense view of them could be false. Indeed, this "scientific realist" perspective seems perfectly in line with Maturana's and Varela's views on the matter when they say

Doubtless...we are experiencing a world. But when we examine more closely how we get to know this world, we invariably find that we cannot separate our history of actions — biological and social — from how this world appears to us.¹¹⁰

Somewhat surprisingly, they maintain it to be "doubtless" that we are indeed experiencing a world. And it seems, moreover, that this passage implies our experiencing a common world (meaning-1), since they could, after all, have said that we are experiencing our worlds (meaning-2). The

¹⁰⁸ Weissman:1989b:159.

¹⁰⁹ Putnam:1981:130.

¹¹⁰ Maturana and Varela:1988:23.

only qualification appears to be that in judging the adequacy of our conceptions of the world (meaning-1) we must take into account the possible effects of the observer and his or her methods of observation on what is observed. (We may be "imposing" the secondary qualities on the objects of our knowledge, for example.) This is certainly not an uncommon view of the relationship between knowers and known. Realistically-minded philosophers and scientists have long argued that it is not contradictory to maintain both that observational results can be theory-neutral and that there can be no data without concepts.¹¹¹ Indeed Maturana could simply be read as saying that our knowledge of the world is colored by our concepts and hence open to error:

Our incapacity to experientially distinguish between what we socially call illusion, hallucination, or perception, is constitutive in us as living systems. The recognition of this circumstance should lead us to put a question mark on any perceptual certainty.¹¹²

Or as Richard Bernstein writes about what he refers to as the "new fallibilism:"

If we focus on the history of our understanding of science during the past hundred years, from Peirce to Popper, or on the development of epistemology during this period, we discover that thinkers who disagree on almost everything else agree that there are no nontrivial knowledge claims that are immune from criticism.¹¹³

It is important to note that we could still assume at this point that it is a fully-structured, yet observer-independent world that, in Maturana's words,

¹¹¹ See, for example, Kordig:1971:ix; Scheffler:1982:Ch2.

¹¹² Maturana:1988a:10; emphasis added.

¹¹³ Bernstein:1983:12.

we are "experiencing" and "getting to know." There is nothing, in other words, to prevent us from interpreting Maturana as making reference to human experience as "the effect of our interactions with a world whose existence and character are independent of the ways we think and talk about it."¹¹⁴ On the basis of this recognition of the role of the observer in determining what is observed, Maturana simply suggests that we put aside our daily tendency to treat our experience with the seal of certainty, "as though it reflected an absolute world."¹¹⁵ It seems reasonable to expect a high degree of indeterminacy of reference between our theories of the world and the world itself: where our every access to the world is mediated by thoughts, percepts and words construed as signs, it surely follows that we could be wrong about anything. In more analytical terms, it is not the objects that we are referring to that are indeterminate, but which objects we are referring to. The indeterminacy, in other words, is in the speculative nature of our attempts to refer to objects and their properties.

The fact that our senses sometimes deceive us — as the familiar examples of illusion show — is a form of Cartesian doubt that reflects the truth of the underdetermination of our theories by the world. It is surely the case that we often do impose a view of the world on the world, perceiving in many instances what we wish or expect to see. Yet objectivity is perfectly consistent with selectivity of focus, as our theories direct our observational attention toward some objects and away from others, for the simple reason

¹¹⁴ Weissman:1989a:515.

¹¹⁵ Maturana and Varela:1988:25.

that "there are always infinitely more things available to perception than we could ever pay attention to."¹¹⁶

To sum up: Maturana, read as a scientific realist, may be in a position to doubt the veracity of the common sense view of secondary qualities of objects, but not the very existence of those objects — that would be, as Quine's would have it, an overreaction. If he is a scientific anti-realist then his conclusions have no direct bearing on the common sense view. Either way, Maturana's analysis of illusions lends no support to his constructivist elimination of the "external" (observer-independent) world. Ironically, the elimination of that world creates insolvable problems for Maturana's doctrine. It is undeniable, of course, that Maturana presents us with a linguistic "reality" ("we should in fact apply the notion of reality to this very domain of descriptions"¹¹⁷) and argues for subject-dependent or "relativistic"¹¹⁸ realities in place of the traditional notions of "objective reality" or the "really real":

Every domain of existence is a domain of reality, and all domains of reality are equally valid domains of existence brought forth by an observer as domains of coherent consensual actions that specify all that is in them.¹¹⁹

Is it a subject-dependent ontology or linguistic reality that underlies the constitutive inability of the observer to talk about a world of things that exist "independently of what he or she does?"¹²⁰ One would guess that it had

¹¹⁶ Russman:1987:62.

¹¹⁷ Maturana:1988a:51-2.

¹¹⁸ Dell:1985:10.

¹¹⁹ Maturana:1988a:48-9.

¹²⁰ Ibid:50.

to be, and Maturana is often quite explicit about the necessarily subject-dependent nature of the real: "since living systems are self-referential systems, any final frame of reference is, necessarily, relative....[A]ll ultimate truth is contingent to personal experience."¹²¹

Let us admit that Maturana's entire neuro-biological project rests on this contrary impulse: he needs to present the doctrine of structure determinism as a claim about the way the world really is structured, and not just according to that particular observer's opinion. Held and Pols¹²² offer an extensive list of the equivocation on the part of Dell and Maturana between ontological claims in the Pickwickian (subject-dependent) sense and reality claims in the "common" sense which purport to say something about the way the world "really is" independently of the observer.¹²³ That formulation of Maturana's system which claims for it the status of a reality claim in the common sense throws Maturana into a blatant contradiction. In adopting an anti-realist and constructivist epistemology that asserts the absolute and "equal validity" of all observations, Maturana is in no position to make a reality claim that purports to describe the organization and features of a world — including our place and structure in the middle of it — that we all share.

I suspect that this confusion has its source in these three things, all of which follow directly from his intuitionism: (1) Maturana's reduction of reality to the small circle of distinctions "brought forth" by the observer; (2) the characteristic refusal of an intuitionist of form to consider the ontological

¹²¹ Ibid:57.

¹²² Held and Pols:1985a; 1985b; 1987.

¹²³ Held and Pols:1987:458.

presuppositions of that method; and (3) his pre-theoretic desire to escape the dangers of that "solipsistic abyss" toward which his intuitionism propels him. I shall close this chapter with two examples of this ontological tension that plagues Maturana's system.

The following passage from Dell indicates the manner in which the contradiction is avoided only by "taking a key term [ontology] in two distinct and opposed senses:"¹²⁴

[1] What is important to understand here is that perception is not and can never be objective — and yet, all observations have equal validity.... None of these observations are objective, but [2] all of them are valid in that they are specified by the structure of the observer in conjunction with what that observer's interaction with the medium allows. [3] For these reasons, Maturana insists that all realities which we bring forth are legitimate.¹²⁵

[1] is a statement of Maturana's acceptance of an anti-realist epistemology founded on the experiential indistinguishability of perception and illusion. [2] suggests that there is a way that we are that determines the truth of [1]. [2], in other words, contains an explicit and quite general ontological claim about the nature of human cognition and observation contained in the doctrine that we are structure-determined entities. [3] wrongly concludes from [1] and [2] that all our views of the world, including that of structure determinism and in contradiction to the implied universality of [2], are merely subject-dependent "realities." The contradiction, once again, consists in putting forward such a general claim about the functioning of human cognition as

¹²⁴ Ibid:459.

¹²⁵ Dell:1985:16; numbers in brackets mine.

that in [2] and at the same time maintaining that that functioning can only result in the creation of subject-dependent realities.

The same equivocation is contained in the following passage taken directly from Maturana and Varela. It clearly begins with an ontological claim in the common sense and ends with a somewhat vague reference to the subject-dependent nature of the "world" (meaning-2) that is available to us. So it would seem that Maturana, by the end of the passage, has undercut the force of his claim to have identified something about the way we are that is not dependent on what we "create with others." I have underlined the two key phrases that evoke a quite general ontological claim and a relativistic one, respectively:

...the uniqueness of being human lies exclusively in a social structural coupling that occurs through languaging, generating (a) the regularities proper to the human social dynamics...and (b) the recursive social human dynamics that entails a reflection enabling us to see that as human beings [there is still a trace of a reality claim in that last phrase] we have only the world which we create with others...¹²⁶

Maturana clearly exempts his own doctrine from the relativistic strictures it lays down for the rest of us. And this results from the fact that Dell and Maturana, for whatever reasons — have "not been able to operate without making reality claims they have failed to notice."¹²⁷ We might characterize the common denominator of all such idealist positions as follows: "knowing is making, where using an interpretation to create a thinkable experience makes a world."¹²⁸ This sounds very close to one of

¹²⁶ Maturana and Varela:1988:246.

¹²⁷ Held and Pols:1987:468.

¹²⁸ Weissman:1989a:517.

Maturana's more frequently used expressions: "all doing is knowing and all knowing is doing."¹²⁹ A direct result of this line of thinking, as Maturana himself notes, is that "we have only the world we bring forth with others."¹³⁰ The word "we" here is certainly important, and signals the potential for Maturana to be asserting the social or cultural-dependent nature of our views or constructions of "our" world. He in fact claims that our world is a "linguistic world that we build with others."¹³¹ Yet talk about the "social construction of reality" or the "linguisticity" of our experience is prone to the same sort of equivocation on the nature of the independence dimension of traditional realist claims as that outlined above. But more to the point, given his anti-realist epistemology and commitment to intuitionism, Maturana is not entitled to assert the independent existence of any of the possible objects of knowledge, including "others,"¹³² for certainly it is a necessary condition for being one of those "others" that I am not reducible to the cognitive distinctions of Maturana.

Let us focus, therefore, on the claim that "nothing exists" apart from this linguistic world that we bring forth with others. In making this claim, Maturana unwittingly subscribes to what has been called the "cardinal principle of idealism:" that "[b]eing is dependent on the knowing of it."¹³³ It comes as no surprise, then, when Maturana suggests that "human existence is

¹²⁹ Maturana and Varela:1988:27.

¹³⁰ Ibid:248.

¹³¹ Ibid:235.

¹³² Maturana:1978:60.

¹³³ Brown:1988:145.

cognitive existence," or, more specifically, "the atom and the hydrogen bomb are cognitive entities.... That is their reality."¹³⁴ To the extent that such weapons are cognitive entities it would seem to follow that all of us who think about them are, as Maturana claims, directly responsible for "bring[ing them] forth."¹³⁵ This clearly adds up to more than the principled suggestion that we take more responsibility for our actions. For when we conjoin statements such as "[e]very thing is cognitive" and "everything is human responsibility" with the subject-dependent nature of every possible "world," the responsibility for such things could only be individual and total.¹³⁶ Yet the suggestion that "we" take responsibility for such things sounds plausible only when we forget the subject-dependent nature of the "reality" brought forth by each of Maturana's world-spinning observers.¹³⁷

Let us concede that much of this talk about "world-making" is an embarrassment, and that effective action is possible only as our maps and plans succeed in accurately modeling some of the instrumental relations obtaining in nature. Structure determinism shares with my realism, it is true, an instrumental, pragmatic expression. Yet Maturana's constructivist pragmatism is not a theory of things and relations used (like a map or tool) in our dealings with an extra-linguistic or extra-mental world. Rather, constructivist pragmatics sees language or thought as the mind's principal instruments in creating a thinkable experience. In this way "mind" creates a

¹³⁴ Maturana:1988a:51; 1988b:80.

¹³⁵ Maturana:1988a:51.

¹³⁶ Ibid:51. See MacKinnon (1987) for a treatment of this "blame the victim" nature of Maturana's thought.

¹³⁷ Maturana:1978:60.

thinkable because coherent experience which is capable of satisfying our interests and needs. This worldmaking activity holds out clear moral consequences: those worlds will be designed to satisfy our interests and values.¹³⁸ Given structure determinism's subjectivist turn these interests and values become purely individual. What has become of the real world of plants, non-human animals and other people? Here is Maturana's response. Since

...outside language no thing exists...the real is nothing but an argument we use in our human co-existence whenever we want to compel another human being, without using force, to do something we want.¹³⁹

This anthropocentric denial of all things extra-linguistic, while serving, intuitively, as a reductio of Maturana's doctrine to the average reader, doubles as an artificial yet unbridgeable gap between humans and the natural world of which they are a part. Intuitionism seems least plausible as it fails to account for this one popular intuition: we often live or die as we accommodate to a world that we have in no sense made.

¹³⁸ See Weissman:1987a:8-9.

¹³⁹ Maturana:1988b:80.

CHAPTER 4

ONTOLOGY AND INTUITION: THE INSPECTABLE GIVEN

4.1 Introduction

Every philosophical method has ontological and psychological assumptions. It is a truism that all talk of our knowledge of objects requires a theory of those objects, just as "all philosophy, explicitly or tacitly, honestly or surreptitiously... deposits, projects or presupposes a reality."¹ That in itself tells us very little about what is to count as real. Yet we can discover much about our chosen method as we specify the domain of things and relations to which it applies. In these next two chapters I consider the ontologies of intuitionism and hypothetical realism, respectively.

4.2 Skepticism and the Given

We have seen that the intuitionist method is a reaction to the skeptical fear that reality might forever elude us:

We may be lost in a world we cannot know. These intuitionists respond by demanding that mind secure its position within a "world," first by creating its own intelligibilities in language or culture, then by using them to create a thinkable experience. Our access to reality is then guaranteed, for reality is mind's own product.²

¹ Bhaskar:1989:13.

² Weissman:1989b:3-4.

Mind becomes the measure of all things as its judgments regarding the "given" — in its two basic forms discussed below — are infallible and certain. That certainty is secured as the intuitionist appropriation of the given creates a "privileged relationship between subject and object."³ Having rejected the mediating signs of representative realism as merely speculative, the knower is to restrict his or her attention to the representations themselves, turning those "representations into realities":⁴

Rather than being an open window onto the world, they are a barrier to the direct inspection of the things represented. These signs, whether natural or conventional, have displaced the world to which they were to give access. For it is only these representations, not the world, that mind inspects and knows.⁵

In this chapter I consider in detail the ontology of the intuitionist method. I suppose that every instance of that ontology is, in one of two senses, an ontology of the given.⁶ Specifically, intuitionism requires that everything real, everything that could be said to exist, be given in one of two ways: (1) presentable in its entirety to inspecting mind; or (2) presented for inspection; with the difference being that the latter is the more radical alternative in supposing that the mind first creates or constructs, and then regards, the given.

Few intuitionists, even among those who tacitly support this second, more radical view, are apt to focus our attention on this aspect of their method. At best, they present their theory as ontologically neutral with

³ Bhaskar:1989:28.

⁴ Weissman:1987a:100.

⁵ Ibid:99.

⁶ See Weissman:1987a:Ch3; 1989b:Ch7.

respect to the metaphysical issues that separate realists from idealists, as the constructivists Carnap, von Glasersfeld and Quine, like the logical positivists before them,⁷ strain to avoid an outright dismissal of the existence of a mind-independent "ontic world"⁸ of "external things,"⁹ all the while denying us access to them (see section 4.2 below). Others, less politic, regard the independence claims of realists as either "outdated" and "banal,"¹⁰ or concerning a world of ineffable properties and things better off lost to analysis.¹¹ Still others, Kuhn and Feyerabend for instance, would prefer that we consider them "weak realists"¹² who have effectively distanced themselves from (2) along with its implication that the given, or reality, is "mind's own product."

I shall spell out and defend the new role of the given in section 4.5.1. This is particularly important in light of the widespread, yet erroneous, belief that philosophers no longer rely on that notion. But first, why suggest, as I do in the paragraph previous to this one, that certain intuitionists, as we have called them, remain unaware of their own ontological commitments? I have

⁷ A. J. Ayer, for example, claims not to be denying the reality of an observer-independent world. He presents the choice of phenomenalist sense-datum language over a material-thing language as a pragmatic, non-factual one. "What is the reality that constrains us, and prevents us from saying absolutely anything? It is the realm of 'empirical facts'...against which all statements are tested. It is in these facts alone that we must find Ayer's [anti-realist] ontology. In talking of them Ayer is not talking of language; he is doing metaphysics, despite the disclaimers" (Devitt:1984:56).

⁸ von Glasersfeld:1989a:7.

⁹ Quine:1981:Ch1.

¹⁰ Rorty:1985:354.

¹¹ Rorty:1981:3-18.

¹² Devitt:1984:15.

said that idealisms and anti-realisms of every sort are not only positions one professes (section 2.2) —they follow just as surely from adopting the intuitionist method. I would like to amplify in the following section this phenomenon of distancing one's theory from the ontology it contains, drawing on intuitionist theories covered already and extending Devitt's notion of "ontological coyness."¹³

4.2.1 On Ontological Coyness

How might one "distance" one's theory from the more radical version of intuitionism noted above? That can be achieved in one of two ways: we either divert attention from or ignore the ontological commitments of our theory. Maturana does both as he attempts to describe a priori the functioning of cognition and perception in human observers on the basis of his anti-realist epistemology. Specifically — and this was the conclusion of the last chapter — he ignores his implicit commitment to discourse-independent features of observers and their medium while taking up a distracting "relativistic" ontology meant to account for those real features of our world.

4.2.1.1 Internal Realism

Ignoring one's ontological commitment to real, discourse- or scheme-independent features of the world is compatible with an emphasis on the metaphorical "imposition view" discussed above (section 3.2.2), where a literal rendition of that view seems to "leave us some of the familiar

¹³ Ibid:Ch9.

world."¹⁴ The importance of that metaphor to the "ontologically coy" intuitionist should be clear:

Thus Berkeley did not deny the very existence of the common-sense physical world, but claimed that it could be reduced to something mental. And the phenomenologists liked to give the impression that they were saving that world. This conservatism was good tactics: abandon it and the anti-realist can expect refutation by the kicked stone and the incredulous stare. He may even, like Hume, have difficulty believing what he says.¹⁵

Putnam tells us in his most recent book that he rejects any "copy" theory of knowledge and truth (i.e., metaphysical realism together with correspondence truth), as well as the idealism that would have it that "the mind makes up the world" subject to various external constraints.¹⁶

Rejecting both positions as "alienated," he favors the following:

If one must use metaphorical language, then let the metaphor be this: the mind and the world jointly make up the mind and the world.¹⁷

How might we unpack this metaphor and assess its promise as a theory of knowledge and being? I will turn once more to Putnam's defense of "internal realism," supplying in brackets my own comments designed to relate his defense to the more radical sense of givenness noted above:

We cut up the world into objects when we introduce one sign or another [the imposition view]. Since objects and the signs are alike internal to the scheme of description [we literally impose this order on the "world"], it is possible to say what matches what" [representations have become the realities to which our

¹⁴ Ibid:140.

¹⁵ Ibid:221.

¹⁶ Putnam:1987:1.

¹⁷ Ibid:1.

sentences refer; we have, in intuitionist fashion, closed the gap between knower and known].¹⁸

Putnam suggests that internal realism and the activity of cutting up the world (what I have called the imposition view) provides a "reality without dichotomies."¹⁹ In place of the mind-independent and determinate complexes of properties²⁰ of the world we find a continuum of properties ranked from those relatively objective (eg., "being a region of space which contains at least one hydrogen atom") to those relatively subjective (eg., "being very amusing").²¹ Our common intuition is that there must be some identifiable point along this continuum at which subjectivity ends and objectivity begins, as the objective reality of our very hands and feet is no relative notion. But that is precisely the one move that is ruled out by Putnam's internal realism. Putnam recognizes the serious implications of his effort to do away with dichotomous thinking:

My rejection of these dichotomies will trouble many, and it should. Without the constraint of trying to "save" the appearances", philosophy becomes a game in which anyone can — and, as a rule does — say just about anything.²²

This pinpoints the very disturbing aspect of his book, which one reviewer recognizes:

...[this negative effort] to bring down the object/subject bifurcation...needs its complement, a positive differentiation between acceptable and unacceptable assertions about...the many

¹⁸ Putnam:1982:52.

¹⁹ Ibid:32.

²⁰ See chapter V below.

²¹ Putnam:1987:27.

²² Ibid:28.

faces of realism, failing which anything indeed does go. One suspects this effort will return us closer to the dichotomous world from which Putnam counsels flight.²³

We have suggested that the imposition view is simply a metaphor, possibly having application to experience, and certainly not a means by which we "cut up" or otherwise construct the "relatively objective" features of a world we have not made. The imposition view fails as a critique of realism when the conclusions of this latter doctrine hardly resemble a "God's eye view."²⁴ We have already noted the equivocation on the meaning of the independence of the world from our theories that undergirds such statements and leads to the fallacious identification of all talk about the features of an object with the very existence of that object's features (section 1.4). With this distinction in mind, we can restate and then reject Putnam's inference that leads him to call realism "incoherent" as follows: since (1) the question about what there is can only be asked within a scheme of descriptions, then (2) we cut up the world into objects when we chose a scheme of descriptions of the world. (1) is a truism: no one will deny that to convey the structure of the world in a conceptual or linguistic format makes our judgments "parasitic" on a scheme of representations.²⁵ (2) amounts to idealism and follows from a mistaken reading of that truism that places an "absurd requirement" on realism; namely, that we can judge, without dependence on any concepts at all, whether our theories are true of the world.²⁶

²³ Hobart:1989:191.

²⁴ Putnam:1981:84.

²⁵ Salinas:1989:114.

²⁶ Or that we can justify sentences by looking at the world "nonlinguistically" (Russman:1987:16); see also Devitt:1894: 195n3; Salinas:1989:114.

Putnam confuses two very distinct things. While he sees realists arguing for their position without the assistance of concepts or experience, they are in fact attempting something altogether different from that magical feat. Specifically, realists suppose that we are able to judge whether our theories are true of reality, the nature of which is independent of our concepts and experience of it.

In contrast, internal realism is informed by a Cartesian skepticism that seems to leave us with, at best, a philosophy of "as if": all we can assert about our sensory experience of an external world is that it sometimes seems "as if" we are experiencing that world. Objects become "convenient ideal fictions"²⁷ as we choose one response to the skeptical challenge to knowledge or belief that consists in giving up the search for a match between our representations (mental or linguistic) and the world. Philosophy is unable to "underwrite or debunk claims to knowledge;"²⁸ "there is no object of knowledge;"²⁹ and "knowledge...is not 'correct pictures' but viable procedures."³⁰

In light of these skeptical worries it seems that the supremely rational thing to do is to limit our statements to the "as if" variety. Realists, on this interpretation, merely assert that our experiences are as if there is a world independent of our experiences. Other positions (that we are all brains in vats or are simply dreaming, for example) are equally compatible with all the evidence available to the senses. It follows that realism in the traditional

²⁷ von Glasersfeld:1989a:5.

²⁸ Rorty:1979:3.

²⁹ Maturana:1980a:53.

³⁰ von Glasersfeld:1989a:6.

sense, since it is unable to give reasons for rejecting these other positions, is unjustified in its commitment to a structured world of mind-independent things. According to our best theories of science (from which skeptical doubts often get their start — see section 3.5 above) there can be no evidence supporting realistic theories about the world over, say, the theory that we are all brains in vats.

We must maintain that the skeptical doubt reflects the (scientific and practical) truth of the underdetermination of our theories by the world: "We could be wrong about anything."³¹ However, we recall that the necessary mutuality of our method and ontology does not require that we fall victim to psychologism (section 2.3.1.2), as we might were we to have our metaphysics determined by our epistemology in the fashion of internal realism. One reading of Putnam's imposition view suggests that our failure to "cut up the world" would leave the world without objects, properties or relations. What, then, could be said to exist according to Putnam's "internal" theory, other than the contents of our minds? All that we are left with are our "conceptually contaminated experiences and the theories they lead to."³² Unable to account for any discourse-independent features of the world, Putnam's original metaphor reduces to a version of the "alienated" idealism he had hoped to avoid, where the mind simply makes up the world.

4.2.1.2 Empirical Realism

Even critics of internal realism can employ the imposition view to divert attention from the idealistic implications of their theory. Consider Ian

³¹ Devitt:1984:52.

³² Ibid:192.

Hacking, for example, who rejects Putnam's idea that "objects do not exist independently of conceptual schemes," while accepting that we do cut the world up into objects when we introduce one or another scheme of representation.³³ Those objects, we are to imagine, are distinct from our representations, creating a scheme–reality dualism something like the one I suggested we adopt in section 1.4 above. Hacking contends that Putnam "runs a number of distinct theses together" in his critique of metaphysical realism which have no logical bearing on one another:

The fact that we cut up the world into various...categories, does not in itself imply that all such categories are mind–dependent.³⁴

Yet in the end Hacking wants to combine a metaphysical realist perspective about "natural kinds" with a "revolutionary transcendental nominalism" inherited from Kuhn.³⁵ These two positions are hardly compatible, as the following passages indicate. First, we have Hacking's straightforwardly realist support for the notion of scheme-independent "natural kinds":

The world simply does have horses and grass in it, no matter what we think, and any conceptual scheme will acknowledge that.³⁶

We suppose that Hacking thereby acknowledges his commitment to these things having a character and existence that is independent of our ways of "cutting up" or otherwise engaging the world. This is metaphysical realism.

³³ Hacking:1983:94–5.

³⁴ Ibid:95.

³⁵ Kuhn:1962.

³⁶ Hacking:1983:110; emphasis added.

By the very next paragraph, however, Hacking's commitment to a scheme-neutral world of horses and grass has been completely erased, and an "empirical realism" put in its place:

We can hardly avoid approaching nature with our present categories.... We are in fact empirical realists: we think as if we are using natural kinds, real principles of sorting.³⁷

This is the Kantian strain in Hacking's transcendental nominalism that we first saw in Gadamer's use of language (section 2.4.3.1):

The world stands before us as a never completed manifold; that which is subjective because of having been created by mind as it thinks the given is nevertheless called objective because we cannot help but think of it as standing apart from us.³⁸

We are to suppose that our conceptual schemes are at best regulative principles that need not be true of anything in the world beyond inquiry. Similarly, our ideas of natural kinds represent one more instance where thought sees its own shadow, as "forms are projected onto sense data."³⁹ So long as it serves our purposes, we persist in talking "as if" there are mind-independent things in the world (like horses and grass), adopting the more cautious position that there can be no "right... representation of the world."⁴⁰ Hacking's empirical realism, no less than Putnam's internal realism, is a form of constructivist intuitionism.

³⁷ Ibid:110; emphasis added.

³⁸ Weissman:1987a:72.

³⁹ Weissman:1989b:61.

⁴⁰ Hacking:1983:110.

4.2.1.3 Radical Constructivism

It has become fashionable in the latter part of this century among philosophers and other social theorists to talk about the "social construction of reality".⁴¹ Social constructivists rightly criticize the idea that humans are merely passive agents of perception and reflection, rejecting outdated epistemological stories about "iconic representations" of reality and "the mind as the mirror of nature." What they fail to realize, however, is that realism with regard to the external world need not, indeed should not, rest upon them.

Epistemologically, the constructivist perspective represents the following shift:

The shift from knowledge-as-representation to knowledge-as-construction of reality implies an epistemological shift from the search after the "right method" for telling the true (really real) from the false (the apparently real) in what we observe, to the analysis of the operations allowing the observer to distinguish what he or she distinguishes and therefore to organize his or her own experience.⁴²

This shift represents a change of ground from the discovery of that which our experience is about to "the environment as we perceive it is our invention."⁴³ Ernst von Glasersfeld characterizes this paradigm as "radical" in that it avoids resorting to a belief in a world existing independently of the "observer" (a world "in-itself"). von Glasersfeld's debt to the skeptics is clear as we survey his distinction between radical and trivial constructivism:

⁴¹ Berger and Luckmann:1966.

⁴² Chiari and Nuzzo:1988:92.

⁴³ von Foerster:1984:42.

...those who merely speak of the construction of knowledge, but do not explicitly give up the notion that our conceptual constructions can or should in some way represent an independent, "objective" reality, are still caught in the traditional theory of knowledge that is defenseless against the skeptics' arguments. From an epistemological point of view, therefore, their constructivism is trivial.⁴⁴

In their reaction to the skeptical challenge radical constructivists are inclined to adopt, like the empirical realist Hacking, a pragmatic, "as if" epistemology; one that maintains that knowledge as a representation of the differentiations and orders of an observer-independent, "external" world must be replaced by knowledge as that which is in some sense "viable" in relation to the "experiential world" of the knowing subject.⁴⁵

Whatever the subject perceives or conceives will necessarily be the result of the subject's ways and means of perceiving and conceiving — and there is no way ever to compare these results with what there was in the first place.⁴⁶

von Glasersfeld defines the mental constructions that result as "conceptual structures that epistemic agents, given the range of present experience within their tradition of thought and language, consider viable."⁴⁷ We can note this ambiguity in the very formulation of radical constructivism: are these cognitive structures viable as they succeed in making sense of "the world as the knowing subject experiences it,"⁴⁸ or the "experiential world of the knowing subject?" In other words, does the

⁴⁴ von Glasersfeld:1989a:6–7.

⁴⁵ von Glasersfeld:1984a:22.

⁴⁶ von Glasersfeld:1988a:3–4.

⁴⁷ Ibid:7.

⁴⁸ Ibid:5.

conceptual system, by projecting form onto sensory data, create everything determinate within experience; or does it formulate and test hypotheses about a world ("what there was in the first place") whose existence and character are independent of the ways we think and talk about it?

This question can receive no straightforward answer, as it is clear that von Glasersfeld, like Maturana (section 3.6), is committed to (at least) two distinct "worlds:" the one an observer-independent, "real world" that remains indifferent to our various ways of describing it; and the other a subject-dependent, "experiential world," as the "only one the human knower can conceive of."⁴⁹ First, we have these remarks concerning von Glasersfeld's commitment to an observer-independent, "real world":

Radical constructivism...does not deny an ontological "reality" – it merely denies the human experiencer the possibility of acquiring a "true" representation of it.... [and] holds that no such reality can be known....The human subject may meet that world only where a way of acting or a way of thinking fails to attain the desired goal — but in any such failure there is no way of deciding whether the lack of success is due to an insufficiency of the chosen approach or to an independent ontological obstacle.⁵⁰

These remarks recall Maturana's notion that our apparently autonomous descriptions of the world are somehow constrained by an observer-independent noumenal world, or substratum, which is entirely devoid of properties. Yet our commitment to the condition of independence (CI) (section 1.4) suggests to us that this realm of neutral, unsynthesized content — said only to "permit whatever it permits" — is but an idle addition to idealism. Refusing, moreover, to admit the reality of "bare,

⁴⁹ Ibid:7–8.

⁵⁰ Ibid:8–22.

faceless existence" that such a concept requires, we prefer to equate existence with the existence of a property or complex of properties.⁵¹

Indeed, von Glasersfeld claims to have independently reached many of the same conclusions as Maturana.⁵² And we add that radical constructivism's equivocation on the word "reality" parallels Maturana's enigmatic use of the word "world." This brings us to the second type of world to which von Glasersfeld is apparently committed. He writes: "by 'experiential reality' I intend what we ordinarily call 'reality.'"⁵³ Ordinary reality is apparently reduced to that "malleable material waiting to be processed by multiple conceptual frameworks."⁵⁴ It seems that von Glasersfeld shares with the radical philosophers of science, Kuhn and Feyerabend, a kind of "realist rhetoric."⁵⁵ We are to suppose that the constructive activity of the mind alone creates a thinkable and familiar reality, with all that is extra-mental placed in a noumenal realm forever beyond our ken:

I am in agreement with Maturana when he says: ...an observer has no operational basis to make any statements or claims about objects, entities or relations as if they existed independently of what he or she does.... Concepts...have no iconic or representational connection with anything that might "exist" outside the cognizing system; and the raw material out of which

⁵¹ Weissman:1977:86-9.

⁵² von Glasersfeld:1989b.

⁵³ von Glasersfeld:1984b:8.

⁵⁴ Salinas:1989:111.

⁵⁵ Devitt:1984:137-8.

concepts are composed or coordinated cannot be known to have any such connection either.⁵⁶

Here we find von Glasersfeld falling victim to a constructivist version of the so-called short argument to idealism: since we "never encounter reality except under a chosen description,"⁵⁷ we should see ourselves as constructing worlds rather than finding them. The argument goes as follows. If the world of the realist is a "world outside all schemes," then, by definition, it must be completely unspecified and unspecifiable. So the "raw material" out of which our concepts are composed or coordinated must be an unconceptualized given. However, since nothing at all is given to rational awareness, including the "connection" between our concepts and "anything that might 'exist' outside the cognizing system," von Glasersfeld has no basis for saying that this raw material either "exists" or can fulfill the constraining function he assigns it.

It follows that von Glasersfeld, like Maturana, is theoretically committed only to the subject-dependent "experiential world" of the individual observer:

From the constructivist point of view, to observe means to focus attention on a specific part of one's experiential field. Usually the focusing of attention involves categorizing what one focuses on as a item of a particular kind, a property, a relation, a thing, a process, etc.... But once it is understood that all this discriminating, categorizing, and establishing of relationships takes place within the observer's experiential field, it becomes clear that no result of these operations can pertain to the world as such, that is, the world as it might exist objectively without the observer's activities.⁵⁸

⁵⁶ von Glasersfeld:1989b:8.

⁵⁷ Rorty:1981:xxxix.

⁵⁸ von Glasersfeld:1988a:22-3.

This, once again, rests on the subtle equivocation on the independence dimension of realism. von Glasersfeld mistakenly supposes that commenting on the independence of the world from our theories rests on the divine capacity to say what the world is like theory independently. We recognize the need to sustain a viable scheme–reality dualism for just this reason: the anti–realist argument of von Glasersfeld and others is supportable only as we persist in thinking of the "world outside all schemes" as necessarily an undifferentiated, ineffable substratum. And that characterization of the world rests on confusing the theory–dependence of discourse with the theory–dependence of the world itself.

To think otherwise is to suppose that the world must be inaccessible to the stories we tell, that content must be uninterpreted and uninterpretable by concepts. This assumption, in turn, is the outcome of the conflation...of the epistemic nature of our judgments on what there is (their bond to theory) with the dependence of what there is on the mental, with theory per se.⁵⁹

How does all of this reflect on von Glasersfeld's attempt to remain neutral on the issues dividing realists from idealists? We have seen that his commitment to an observer–independent "ontological reality" is not genuine, despite his frequent claims to the contrary.⁶⁰ His intuitionism is plainest as he supposes that everything we can know receives its differentiations and organization from the conceptual system used for thinking it. With an ineffable I–know–not–what to generate the raw material or data, all of the intelligibility credited to any possible experience (or "experiential world"), originates within the conceptual structures employed,

⁵⁹ Salinas:1989:113.

⁶⁰ von Glasersfeld:1988a:8; 1989a:7

as we attempt to "attain the goals we happen to have chosen."⁶¹ This pragmatic element, shared by Putnam, Maturana and von Glasersfeld, is perhaps the most confusing aspect of modern intuitionist thought and deserves separate comment.

4.2.2 Intuitionism and Pragmatism

Contemporary philosophers are apt to call themselves pragmatists, all the while supposing that doctrine to be in conflict with realism. I suggest that the opposition of these two theories is an academic aberration, one having its source in the intuitionist bias against speculation outlined above, along with the requirement that everything real be presented or presentable for inspection. The intuitionist appropriations of pragmatism are not, therefore, theories of things and relations used (like our maps and plans of chapter I) in our dealings with an observer-independent world, as a test of the truth of our often error-ridden hypotheses about that world.

Instead, these intuitionists turn to value-satisfying and Goodmanesque "world-making" activities to secure themselves against the threat of a world that would forever remain elusive. Rorty is paradigmatic when he insists that there can be no non-human, extra-linguistic factors to which we must answer. This reflects more than the unchecked authority and importance afforded to these modern philosophers, as it is precisely in our role as world-makers that idealism and pragmatism converge: the objects of the world exist and have a determinate nature because we have thought them; and we have done that because it made for a coherent experience in line with our values. It is enough that we think of the world "as if" it were

⁶¹ von Glasersfeld:1998a:6.

independent of us for its character and existence, so long as that satisfies our interests and needs:

Knowing is making, where using an interpretation to create a thinkable experience makes a world. Still more dangerously, this pragmatism may encourage a tacit contempt for those people who cannot think themselves out of one world, and into a better one merely by changing their interpretations. Richard Rorty's "conversation of the West" has that possibility within it. The dialogue he recommends is too much the social patter of those leisured people who need not be right or wrong, because their social positions are well-defended against the demand for relevance or the threat of error.⁶²

I suspect that the "experiential world" of the radical constructivist — like the subject-dependent reality brought forth by Maturana's lone observer — is a solipsistic one. This is a conclusion that even von Glasersfeld can have difficulty avoiding. Specifically, he recognizes as "problematic" the task of avoiding solipsism while accounting for other human beings in terms of the dictates of his theory that declares the "subject's idea of the world [to be] the subject's own construction."⁶³ It is not obvious, he says, "how such an idea of the world should come to incorporate the notion of others in the sense of other cognizing organisms who may construct their own idea of the world."⁶⁴

I suggest that the source of von Glasersfeld's troubles is to be found in his equivocation on the word world, together with his failure to appreciate the condition of independence (CI) of the world from our constructs or theories. Otherwise, it is hardly problematic that anyone's "idea of the world"

⁶² Weissman:1989a:517.

⁶³ von Glasersfeld:1989b:8.

⁶⁴ Ibid:8.

should contain a notion of others. In contrast, realism's rejection of the imposition view has this other effect: it "upgrades other people from the status of phenomenal objects constituted by my consciousness...to individual existences presupposed by my consciousness of them."⁶⁵

von Glasersfeld is right, however, when he insists that the realist is ultimately unable to "answer" the skeptic. But what he fails to see, in my view, is that radical constructivism fails in this regard as well. At times von Glasersfeld seems to imply that the skeptic is unanswerable and has fallen into the same "trap" as the realist in thinking that knowledge, in order to be "any good," must be about the "real world."⁶⁶ Other times, however, he suggests that his theory avoids these difficulties by invoking the notion of "fit" between concepts and reality in place of the more traditional "match."⁶⁷ The implication is not that the skeptic's question is unanswerable because it sets a standard for knowledge that knowledge, in general, is incapable of satisfying. Rather, the suggestion is that achieving some sort of correspondence between a thought or sentence and a state of affairs is rendered beside the point (along with the skeptic's concerns) once the world is reduced to myriad "experiential worlds":

...the world that is constructed is an experiential world that consists of experiences and makes no claims whatsoever about "truth" in the sense of correspondence with an ontological reality.... The world which we experience is, and must be as it is, because we have put it together that way.... The constraints of our world, with which our enterprises collide, we never get to see. What we experience, cognize, and come to know, is

⁶⁵ Russman:1987:147.

⁶⁶ von Glasersfeld:1988a:4.

⁶⁷ von Glasersfeld:1989a:6

necessarily built up of our own building blocks and can be explained in no other way than in terms of our ways and means of building.⁶⁸

This is von Glasersfeld's answer to the skeptic. Could there be a claim more speculative and precarious than the one affirming that each of us is a self-sufficient worldmaker? I suggested earlier that worldmaking is one way to put the best face on the terrors of skepticism: but that is just to say that these worldmakers have become skeptics. On this account, radical constructivism — far from being an answer to skepticism — merely reiterates the skeptical challenge and obscures the undesirable consequences of adopting that view behind the veil of "experiential reality."

4.2.3 A Possible Objection

Let us briefly take up a possible first objection to the way I have introduced the intuitionist ontology of the given. Is all this talk of "mind" creating or inspecting the given merely an outdated, Cartesian mentalism? Do we not misrepresent the position of these philosophers as we overlook the contemporary reinterpretation of experience and mental activity as belonging essentially to the social domain?⁶⁹ I suggest that in the context of the intuitionist ontology, that difference is only superficial. It reduces to the difference between individual and collective world-making:

Mind's product is socialized, though we have not altered the Cartesian view that nothing is better known to mind than mind and its works.... We are asked to believe that reality depends for its character and existence on our ways of thinking or talking about it....⁷⁰

⁶⁸ von Glasersfeld:1987:204–12.

⁶⁹ Wittgenstein:1953; Dewey:1965.

⁷⁰ Weissman:1989b:70.

We might find worldmaking of any sort to be a project that tortures belief. Still, we have yet to be driven to name-calling in order to reject that project, in the absence of compelling reasons for dismantling the naturalistic alternative. Where might we find those reasons? A good place to start is with the theory of perception:

Why does intuitionism survive? Because perception is our insistent paradigm for understanding. Perception encourages the security we feel at having things we can see or touch. Inspection is reassuring in this same, almost palpable way.⁷¹

The realist often considers perceptual data as evidence for things about which we might speculate, as a scratch at the door may be construed as a sign of a long-lost pet. That same data can be claimed for the given in intuitionism, while the two methods differ only as they defer to or attempt, fallibly and hypothetically, to exceed that data.

4.3 Structural Coupling as a Condition of Existence

Maturana is clearly one example of an intuitionist who attaches great importance to observation. His claim that the world is structure-determined has as its corollary the doctrine of "structural coupling."⁷² We recall from the last chapter that every structure determined system (or composite unity) exists in a "medium." This manner of existence implies a structural complementarity between every system and its medium, where every interaction (operation of a composite unity's properties) between a system and its medium that conserves the organization⁷³ of the system signals an

⁷¹ Ibid:217.

⁷² See for example, Dell:1985:12; Maturana:1988a:38; 1985:63.

⁷³ In the case of living organisms, Maturana equates this conservation of structural coupling with conservation of adaptation.

instance of structural coupling. Structural coupling, therefore, is a condition of existence for every system:

The very existence of a structure determined system, then, entails its structural coupling and the conservation of its structural coupling through all its changes of state.⁷⁴

Living systems, in particular, will exist only so long as their interactions trigger in them structural changes congruent with the structural changes of the medium to which they are coupled; otherwise structural coupling comes to an end, and the living system ceases to exist, as a human who fails to change his or her behavior in response to environmental changes may die.

Two questions present themselves: (1) Recalling the "operational closure" of our organization according to structure determinism (section 3.3), we wonder how this necessary-for-survival conservation of adaptation (or "ontogenic structural drift" as Maturana calls it) occurs in the absence of any information flow between the organism and its medium. Is Maturana lapsing into a realist theory of perception, complete with nested, stable systems negotiating their way through an environment? (Or, at a more individual level, how does Maturana bypass the operational closure of his own nervous system in order to receive information about the nature of ontogenic structural drift?) (2) Does Maturana offer any justifications of his intuitionism? I will now answer these two questions in the order presented.

(1) The short answer, focusing on the question directed specifically at Maturana, is this. Maturana's very method precludes the kind of discoveries he claims to have made. In particular, it bars all talk of "conditions of existence" and the "necessity" of structural coupling. Indeed, given the

⁷⁴ Maturana:1985:64.

operational closure of his nervous system, how could he know even something as basic to his theory as this: "living systems do not have input and outputs."?⁷⁵ These questions animated our discussion in chapter III of the epistemological contradiction (EC) plaguing structure determinism. I need only restate the conclusion reached above here: In adopting an anti-realist epistemology that asserts the absolute and "equal validity" of all observation, Maturana is in no position to make a reality claim that purports to describe the organization and features of a world — including our place and structure in the middle of it — that we all share.

There is a longer answer, however, that takes into account Maturana's intuitionist treatment of perception. Do we err in supposing, as we normally do, that perception is one manner of our causal (and therefore potentially instructive) interaction with a world that is mostly indifferent toward our perceivings, hence requiring that we grasp, however fallibly, some of the features of that world in order to sustain ourselves there? As Maturana himself notes:

...while the ontogenic structural drift takes place with conservation of adaptation, an observer that sees this conservation in terms of an operational congruence between a living system and its environment may describe this operational congruence in terms of perceptual interactions, as if the living system were grasping the features of the environment and using them in computing its following changes of state.⁷⁶

We naturally assume that perception serves as one manner of "grasping" of those features, in the form of natural signs,⁷⁷ which permit an

⁷⁵ Maturana:1980a:51.

⁷⁶ Ibid:64.

⁷⁷ See Weissman, especially 1989b; and chapter V below.

organism to "generate adequate conduct" or effective action with respect to its environment.⁷⁸ Our well-tested maps help to secure us in the world. Yet once we accept the notion of living beings as systems structurally coupled to their environment, we can no longer consider perception as a means of capturing the features of an "external world." Why is this so?

Again, there is a short and a more lengthy answer. First the short one. Our analysis in section 3.4 led us to believe that Maturana's medium is nothing but a cognitive entity. Whatever else we might think of that solution, it does have the effect of removing all mystery about how an organism exhibits purposeful behavior in relation to its environment: there is no observer-independent world with respect to which the observer must achieve effective action. This is the result as Maturana chooses to prioritize the first part of a dilemma thrust upon him by his theory: either the operations of distinctions of the observer "create" ex nihilo the medium in which he or she will live, or those operations are dependent in some way on the prior existence of that medium.

Maturana has one other reason for supposing that perception cannot represent the capture of an independent world. As we saw in section 3.5, Maturana's neuro-biological studies led him to question the operational validity in the biological domain of the distinction between illusion and perception. We suggested there that Maturana overreacts to this phenomenon in questioning the "ontological validity" of the notion of objectivity in the explanation of perception.⁷⁹ We now locate Maturana's

⁷⁸ Maturana:1985:64.

⁷⁹ Maturana:1988a:10.

mistake in this problematic inference which he endorses: If we accept the biologically based "experiential indistinguishability of perception and illusion," then it follows that "existence is dependent on the biology of the observer."⁸⁰ Ironically, Maturana also notes the one conclusion that does follow: "we should put a question mark on any perceptual certainty."⁸¹ Our naturalism tells us that every factual claim, down to and including perceptual judgments, is speculative and hypothetical. If humans, qua knowing subjects, are natural creatures, then we have no reason to suppose that the way humans know is any more infallible than the way they manage to do anything else.⁸²

This naturalistic conclusion, unlike the previous inference, does not overstate the force of Maturana's argument. Indeed, shorn of that overreaction to the overdetermination of evidence by theory, Maturana's theory begins to resemble a fallibilistic realism. But that route is effectively barred as Maturana's constructivist intuitionism of form, with its implicit demand that nothing shall be admitted as true or meaningful that is not presentable in its entirety to mind, forces him to accept the validity of that more doubtful inference. We see the influence of his intuitionism in this other passage:

...everything that takes place is brought forth by the observer in his or her praxis of living as a primary experiential condition, and...any explanation is secondary.⁸³

⁸⁰ Ibid:10.

⁸¹ Ibid:10.

⁸² Millikan:1984:298.

⁸³ Ibid:11.

(2) We have now a brief statement of Maturana's justification of his intuitionism: everything significant for reality has its source in the "world" of cognitive distinctions brought forth by an observer in his or her praxis of living. Explanation, this implies, is errantly speculative as it attempts to specify the generating condition or ground for the phenomenon at issue.

4.3.1 Speculation: Descriptive Generalization vs. Abductive Inference

Maturana's preference for that which is "brought forth" by the observer reflects his intuitionist bias in favor of that which seems secure and infallible (the "descriptive domain"), over speculative claims about the underlying mechanisms which may serve to explain our experience. Yet this represents more than the reasonable demand that our claims about the world be testable — as they must be when our only access to that world is in the form of natural and conventional signs. Rejecting all mediated access to the world, Maturana's preference for description marks the skeptical creation of a "experiential world" to replace the one that threatens to elude him. The first object of philosophic reflection becomes experience, or "the praxis of living" of the observer.⁸⁴ Everything else, the self included, arises as we "operate in language" in a vain attempt to explain that experience:⁸⁵

Self, self-consciousness, and reality exist in language as explanations of the happening of living of the observer.⁸⁶

All of reality is reducible to, because dependent for its very existence and nature on, the "praxis of living" or experience of the observer:

⁸⁴ Maturana:1988a:50; see also section 2.4.1 above.

⁸⁵ Ibid:49.

⁸⁶ Ibid:49.

...nothing exists outside the distinctions of the observer....
Nature, the world, society, science, religion...indeed all things,
are cognitive entities, explanations of the praxis of living of the
observer....⁸⁷

This recalls Whitehead's preference for generalized description over explanation as his principal instrument in speculating about the world's features.⁸⁸ Whitehead supposes, along with Descartes, that "subjective experiencing" serves as the primary datum for all metaphysical speculation. It follows that speculation is irresponsible only as it attempts to identify a more primary ground or condition for that experience. Whitehead's reformulation of Descartes' principle in terms of "actual occasions" still restricts responsible metaphysical speculation to the descriptive analysis of subjectivity:

'actual entities — also termed 'actual occasions' — are the final real things of which the world is made up. There is no going behind actual entities to find anything more real.... The final facts are, all alike, actual entities; and these actual entities are drops of experience, complex and interdependent.⁸⁹

There is an alternative to Whitehead's view, however. We might prefer to see both procedures of inquiry — generalization and abduction — as fallible and hypothetical for reasons having to do with induction and the principle of sufficient reason, respectively:⁹⁰

We may describe matters of act, and then generalize from our descriptions; or we may characterize some thing, and then argue from that description to conditions for, including the

⁸⁷ Ibid:51.

⁸⁸ Whitehead:1978.

⁸⁹ Quoted in Weissman:1989b:93.

⁹⁰ Ibid:95. Abductive inference rest on the latter principle as it requires that any state of affairs has conditions to which we may infer when explaining either its existence or character.

constituents of, the thing described. Each of the two steps in both procedures is hypothetical: i.e., we describe then generalize or describe then infer....⁹¹

There is one complication. When observability is the measure of instantiation (or test of truth) of the possibilities signified by our hypotheses, we are apt to confuse the sensory effects in us with the actual properties observed. Yet we need only remind ourselves that most perceptual evidence is different from its conditions or causes, as the shape of a perceived object does not reduce to the sensory differences it makes in us. It follows that description and explanation can serve to answer the "what" and "why" questions we often put to our experience of the world.

4.3.2 The Epistemological Contradiction Revisited

As a philosopher and neurobiologist, Maturana is clearly concerned with both sorts of questions. The pervasive "operations of distinction" are a form of description; and Maturana considers it the very "intention of science to explain" things.⁹² Yet his intuitionism effects a reduction of explanation (as an abductive inference to observer-independent conditions or causes of phenomena) to description in the following way.

Maturana's account of "scientific statements"⁹³ shows him to be an "operationist."⁹⁴ Operationists require that each meaningful theoretical term (a term purporting to refer to an unobservable entity, condition or cause) be defined operationally in terms of observables. An explanation of a theoretical

⁹¹ Ibid:96.

⁹² Maturana:1988a:6.

⁹³ See Maturana:1978:28-30; 1988a:5-9; Maturana and Varela:1988:28.

⁹⁴ See Devitt:1984:117-8.

term will specify the result of operations on observable entities that justify the application of the theoretical term. The result is a reduction of theoretical terms to observational ones: the former are merely shorthand for a more complex phrase consisting solely of observational terms purporting to refer to observable entities. Unobservables — the frequent objects of abductive inferences — are simply "useful fictions." Subjunctive conditionals (descriptions of operations) of the form "if you do x, you will observe y" replace explanations.

How does one begin to translate all of the theoretical commitments of science into subjunctive conditionals? When we discussed above (2.2) those first world-related provocations to reflection, it seemed reasonable to suppose that practice and science — if not metaphysics — commonly infer abductively to unobserved or even unobservable states of affairs obtaining in and conditioning nature. Maturana's operationism is explicit as he specifies the criteria of validation of scientific explanations (the "scientific method"):

- (a) The specification of the phenomenon to be explained through the stipulation of the operations that a standard observer must perform in...order to be...a witness of it in his or her praxis of living [domain of experiences];
- (b) the proposition, in the domain of operational coherences of the [domain of experiences] of a standard observer, of a mechanism, a generative mechanism, which when allowed to operate gives rise as a consequence of its operation to the phenomenon to be explained, to be witnessed by the observer in his or her [domain of experiences]...;
- (c) The deduction, that is, the computation, in the domain of operational coherences of the praxis of living of the standard observer entailed by the generative mechanism proposed in (b), of other phenomena that the standard observer should be able to witness in his or her domain of experiences as a result of the operation of such operational coherences, and the stipulation of the operations that he or she should perform in order to do so;

(d) the actual witnessing, in his or her domain of experiences, of the phenomena deduced in (c) by the standard observer who actually performs in his or her praxis of living the operations stipulated also in (c).⁹⁵

Let me briefly summarize these four operations. In the first, the observer specifies a procedure of observation that, in turn, specifies the phenomenon that he or she will attempt to explain. In the second, the observer proposes a "conceptual system"⁹⁶ (or generative mechanism) as a model of the system that he or she assumes generates the observed phenomenon. In the third, the observer uses the proposed generative mechanism to compute a "state or process"⁹⁷ as a predicted phenomenon to be observed in the modeled system. Finally, in the fourth operation, the observer attempts to observe the predicted phenomenon as a case in the modeled system. When these four operational conditions are conjointly satisfied, then the generative mechanism proposed in (b) becomes a scientific explanation of the phenomenon brought forth in (a).

This one conclusion seems to follow: science is a domain of individually (not socially) accepted statements, validated by that very procedure required for specifying the operations necessary for the generation of those statements. It would seem that the generation and subsequent validation of scientific statements is an entirely circular and individual affair! Indeed, Maturana comes close to admitting this to be the case when he writes:

⁹⁵ Maturana:1988a:7.

⁹⁶ Maturana:1978:28.

⁹⁷ Ibid:28.

Science is a closed cognitive domain in which all statements are, of necessity, subject dependent, valid only in the domain of interactions in which the standard observer exists and operates.⁹⁸

Maturana's criteria for the validation of scientific explanations are only superficially similar to the method of abduction.⁹⁹ Both assume explanations are "generative" in that they specify a mechanism that as a consequence of its operation is capable of generating the phenomena to be explained. In the case of abduction, that mechanism is, more often than not, an instrumental relation obtaining in or conditioning nature. Maturana's conclusion is very different: scientific explanations "explain human experience and not an independent objective world."¹⁰⁰ Still, we share with Maturana a concern about the status of that substratum which seems to undergird our ability to specify generative mechanisms in the first place:

...it seems natural to ask for a substratum independent of the observer as the ultimate medium in which everything takes place....We need the substratum for epistemological reasons.¹⁰¹

I suggest that subjunctive conditionals are a poor substitute for "why" questions: specifically, in virtue of what is it the case that

if we were to perform such and such operation we would get so and so observable result? The operationist must leave this, implausibly, as an inexplicable "brute fact" of the world.¹⁰²

⁹⁸ Ibid:29.

⁹⁹ See note 16 of chapter 1 above.

¹⁰⁰ Ibid:5.

¹⁰¹ Maturana:1988a:45-6.

¹⁰² Devitt:1984:118.

4.4 The Ineffable Substratum

Maturana explicitly rejects as a solipsistic "trap" the kind of subjective idealism I assign to him.¹⁰³ Only this one question remains: does the notion of a "necessary" substratum independent of the observer "save" him from that abyss? In this section I want to consider further the (often only implicit) suppositions of modern linguistic analysis that give rise to this notion of an ineffable, yet constraining substratum.

Maturana, like other intuitionists of form, denies the observer all contact with an "objective" reality on the basis of the constitutive inability of the observer to "attend-to-without-altering"¹⁰⁴ something. No thing, with the one possible exception of the substratum, "pre-exists its distinction by an observer."¹⁰⁵ While it follows that the activity of the observer may be a descriptive, prescriptive or even radically constructive one, rarely is it suggested that it is, in Pols' phrase, a "radically creative one."¹⁰⁶ That is to say, the knower produces or constructs what is known, but only on the basis of what he or she does not produce. Pols refers to that content which serves as the raw material for a construction as the "nonpropositional."¹⁰⁷

So it seems that in the context of intuitionist thought all talk about the abandonment of the "myth of the empirically given"¹⁰⁸ — with its

¹⁰³ Maturana and Varela:1988:133–4.

¹⁰⁴ Pols:1986:23.

¹⁰⁵ Maturana:1988a:45.

¹⁰⁶ Pols:1986:23; emphasis added.

¹⁰⁷ Ibid:24.

¹⁰⁸ Sellars:1963:126.

implication that nothing is given to inspecting mind — is a distortion: intuitionism requires that everything acknowledged as real should be inspectable as given, whether presented to mind or created by it. Is the myth true? Sellars' essentially Kantian point is familiar to constructivists and realists alike: mind is never altogether passive to the data, when everything inspected will have been classified or ordered by us already.¹⁰⁹ Sellars (unlike Peirce¹¹⁰) never denies that something is, finally, given for inspection.

We can list a few examples of the ways in which the nonpropositional may be given to the knower: (1) given for worldmaking; (2) given to be known via the imposition of (propositional) form; (3) given to stimulate the production of paradigms it is nevertheless independent of; and (4) given to be pragmatically coped with.¹¹¹ This new sense of the given — like Maturana's substratum that "permits what it permits" — is often meant to "rescue" these intuitionists from radical idealism.¹¹² Yet their commitment to this ineffable, empirical stimulus — the nonpropositional — is hardly genuine, since they are bound above all else to preserve what Pols refers to as the notion of "linguistic enclosure":

The items or entities entertained by rationality when it knows...are literally and merely propositions. But what rationality entertains is propositional (or linguistic) not just when rationality is directed upon a complex of propositions such (say a body of theory) or upon a single proposition, but also when (before philosophy intervenes) it supposes itself to be

¹⁰⁹ See Weissman:1987a:114.

¹¹⁰ Peirce:1965:133.

¹¹¹ Pols:1986:24.

¹¹² Ibid:24.

directed, by way of the senses, upon some "item" or "items"...or "world" whose nature or natures, as entertained, are not propositional.... Alternatively: rational experience is linguistic.¹¹³

It is precisely their acceptance of this notion of enclosure that leads linguistically-minded intuitionists to say that realism somehow requires "break[ing] out of discourse to an arche beyond discourse."¹¹⁴ In the same vein, having rejected every realist interpretation of reference as a impossible word-world relation, Rorty suggests that truth and knowledge are nothing more than "social phenomena," or propositions-brought-forward-in-defense-of-other-propositions."¹¹⁵ Since language is, in the long run at least, a social matter, linguistic enclosure is by definition social enclosure, and the very nature of truth becomes merely the agreement of a community of language-users. Maturana seems to agree:

Since everything that is said is said by an observer to another observer, and since objects (entities, things) arise in language, we cannot operate with objects (entities, things) as if they existed outside the distinctions of distinctions that constitute them.... Through language we remain in language, and we lose the substratum as soon as we attempt to language it.¹¹⁶

We may now identify more precisely why it is that Maturana "loses" the substratum just as he attempts to speak of it. According to the notion of "ineffable empirical stimulus," whenever we attend rationally to "objects" or

¹¹³ Ibid:25. Sellars follows up his attack on the "myth of the given" with this comment on the relation of thought and language: "...all awareness of sorts, resemblances, facts, etc., in short, all awareness of abstract entities — indeed, all awareness, even of particulars — is a linguistic affair" (Sellars:1963:160).

¹¹⁴ Sellars:1963:196.

¹¹⁵ Quoted in Pols:1986:25.

¹¹⁶ Maturana:1988a:44–6.

"things" of the world (the nonpropositional), the rationality of our focus arrives only at the propositional outcome of its own constructive activity. Everything else enters only at "sub-rational level:"

The nature of the insistent presence of the nonpropositional [the substratum in Maturana's case] in the propositional outcome of the formative, or constructive, power of our (empirically engaged) rationality cannot be rationally expressed.¹¹⁷

So the structure (if it has such) of the nonpropositional *qua* nonpropositional is not available to the rational observer. Indeed, although it is said to "function as a stimulus to cognitive progress,"¹¹⁸ the nonpropositional substratum remains ineffable in at least two senses. First, as just noted, any structure that it may have on its own remains outside the possible scope of our rational awareness and, therefore, our language. We cannot express in language what is extra-linguistically the case: "without language and outside language there are no objects."¹¹⁹ Second, and this point follows immediately from the preceding one, the nonpropositional remains ineffable not only in respect of its character, but also in respect of the way in which it could serve as a stimulus to rational awareness. It follows that philosophers who are committed to the notion of linguistic enclosure should

acknowledge that if they wish to speak of reality they must use the word only in a Pickwickian sense. They should be content with a propositional "reality," a rationally-formed "reality," a

¹¹⁷ Pols:1986:27.

¹¹⁸ Ibid:28. Notable examples include: the "inaccessible raw material of Goodman's worldmaking," the "paradigm-independent stimuli" of Kuhn, the "substratum" of Maturana, and the "materia prima" of Edmond Wright (see also Pols:1986:27, and Wright:1986:15).

¹¹⁹ Maturana:1988a:38.

linguistic "reality"; and should give up any claim to reality tout court, reality without qualification.¹²⁰

4.5 The World of Experience

The constructivist response to the skeptical challenge is to give up the notion of truth as correspondence with an observer-independent reality. That sort of correspondence relation is ruled out of order as we suppose that there is no conceivable way to check our knowledge against a world "presumed to be lying beyond our experiential interface."¹²¹ The radical constructivist rejection of realism, therefore, mimics Putnam's suggestion that that doctrine is a incoherent one and "for Him alone"; or that realism requires "access to a world that does not involve our experiencing it."¹²²

Yet radical constructivism, internal and empirical realism, as well as Maturana's theory of structure determinism, all seem to have claimed for themselves an alternative "world" or reality that does not seem to require the knowing subject to exceed the data. Intuitionists, that is, restrict their attention to data that is given. The "world" that results is often called the "world of experience." That world may be a Kantian one deriving from mind's inspection of a complex of phenomena schematized or conceptualized at the moment of our inspecting it; or it may be constituted of an array of phenomena not requiring that conceptualization because of being intelligible

¹²⁰ Pols:1986:28. Pols suggests that the even the ex-realist Putnam is searching for an unqualified, rather than merely a Pickwickian or relativized-to-a-language, reality, as he considers the "extratheoretic ideal" towards which theories (as "successive approximations to a correct description") converge (Ibid:28).

¹²¹ von Glasersfeld:1989d:2.

¹²² Salinas:1989:2. Indeed, von Glasersfeld credits Vico with making explicit the relation between God's works and the pretensions of realism: "God alone can know the real world, because it was He who created it; the human knower, analogously, could know only what humans have constructed" (von Glasersfeld:1989a:4).

in themselves, as Plato's Forms are given to nous. We confront the given in a continuum of ways, ranging from passive regard through active prescription of form, eventually arriving at the most radically idealist stance: construction. We now turn to these several ways of regarding the given, together with their implicit accounts of its relative autonomy. Our suggestion is the following: the intuitionist claim that we "cannot know" the mind-independent world follows from that method's reduction of knowledge to the inspection of a given:

Everything that might be known will have to be brought before our inspecting minds.... But then something must be given, or there will be nothing at all, meaning nothing to know and nothing that is.¹²³

4.5.1 The Inspectable Given

A method's ontology specifies the least features of those things to which the method applies.¹²⁴ I assume that every method will have psychological assumptions, too, as we try to specify the features of the mind capable of using that method. I will not add to what was said in chapter II about those psychological assumptions of intuitionism. My concern for the remainder of this chapter will be to identify some of the common features of the various intuitionist ontologies. I will ignore for the most part the ways in which particular intuitionist ontologies may differ, as Hume's intuitionism of content will be different in important ways from Maturana's intuitionism of form (2.4.1). Those differences are undeniable, yet incidental to my claim that they all identify reality with an inspectable given:

¹²³ Weissman:1987a:115.

¹²⁴ Ibid:Ch4.

Every intuitionist supposes that there is something, be it sensory data, thought, words, or sentences, which fills the mind as we think or perceive the world. No matter that philosophers differ in the words they use to signify this act, whether they call it perceiving, reading, acquaintance, conceiving, or apprehending. Their point is the same: Some content is presented, inspected, and seen — hence, known.¹²⁵

4.5.1.1 The Least Features of Every Inspectable Given

How is it that the given is inspectable? There are two requirements for any given in order that it may be thought or perceived: the given will be (a) differentiated and ordered in itself, and (b) manifest, or present to a mind.

4.5.1.1.1 The Given as Differentiated

I noted at the start of this chapter that the given is either presented or presentable to inspecting mind. These two options mark the distinction between a given that has no intelligible character in advance of the time when differentiations and order are projected onto it, and one that has some intrinsic character of its own. These are the positions endorsed by the prescriptivist intuitionists (or constructivists) von Glasersfeld, Maturana and Putnam, and intuitionists of content like Hume, respectively. On the one side, mind (or language) creates the things set before it, and on the other, they are merely given to us in some unexplained way. The common element of both perspectives, and of all those middle-way positions that would have the intelligibility of perceptual data founded only partly on the mind's activity, is that the given is, necessarily, differentiated and ordered if it is to be the object of inspection.

Maturana is emblematic as we consider in this regard his notion of "unity." We recall that the operations of distinction of an observer produce

¹²⁵ Ibid:159.

simple or composite "unities" as entities delimited from a background (section 3.4). This "sole necessary condition for existence in any given domain" provides all of the necessary differentiation of the unities that function as Maturana's inspectable given:¹²⁶

An observer may distinguish in the praxis of living two kinds of unities, simple and composite unities. A simple unity is a unity brought forth in an operation of distinction that constitutes it as a whole by specifying its properties as a collection of dimensions of interactions in the medium in which it is distinguished.... A composite unity is a unity distinguished as simple unity that through further operations of distinction is decomposed by the observer into components that through their composition would constitute the original simple unity in the domain in which it is distinguished.¹²⁷

4.5.1.1.2 The Given as Ordered

In addition to its differentiation, a recognizable given will have to be ordered spatially or temporally so that all of its parts are perspicuous, as the spatial relations between a Maturanian unity and its medium (for example, a single page within a book) are constitutive of both. Every unity is, therefore,

...a simple unity that defines through its properties the space in which it exists and the phenomenal domain which it may generate in its interactions with other unities.¹²⁸

A fully comprehensible given requires one further integrating measure: That which is differentiated and ordered in space or time must be brought under a coordinating system or totality. In the case of Maturana's book, that coordinating logic may be the constitutive ability of the observer to see (or, more radically, to create) the singular book as a composite unity of

¹²⁶ Maturana:1980a:96.

¹²⁷ Maturana:1988a:12.

¹²⁸ Maturana:1980a:xix.

many pages. The intuitionist conditions for a differentiated and ordered given guarantee these two things: first, that there will be some content available for inspection; and second, that all of that content will be inspectable.

They are to assure that the given will be visible so that there is something...to be thought or perceived. Equally important, they are meant to assure that nothing is hidden.¹²⁹

Maturana's intuitionism of form clearly provides for both of these results. First, we recall that the observer's specification of a unity marks the "sole necessary condition for existence in any domain."¹³⁰ Maturana has thus provided for a differentiated and ordered given — available, moreover, to the observer from its very inception. Could a portion of the given remain unavailable because hidden from the observer's view? There can be no such elusive part, for "without observers nothing exists."¹³¹ We can ask the same question in another way to emphasize its realist bias: "Can it happen that there is a given whose existence is independent of the mind inspecting it?"¹³² After all, we should not overlook the extra-mental half of Putnam's metaphor: the mind, together with the world, creates both, he says.

We might infer from the regularity of something's appearance before us that it does exist when we are not perceiving it, but that is only speculation. The inference might be mistaken. Intuitionism abhors speculation, preferring that the only reality to which it lays claim is the one set before it. Esse es percipi, it says. Nothing can exist if it is not given to thought or

¹²⁹ Weissman:1987a:159.

¹³⁰ Maturana:1980a:96.

¹³¹ Maturana:1988a:47.

¹³² Weissman:1987a:162.

perception. This is the idealist core within the intuitionist ontology.¹³³

I suppose that this intuitionism represents the more abiding emphasis within Putnam's recent work;¹³⁴ one that would place knowledge of an already differentiated manifold in God's mind alone. This same point can be put in another way. If the essential complementarity of mind and world is not to be construed as simply a form of solipsism, then we must suppose that there is, at the very least, a partially differentiated and ordered manifold (or world) awaiting the contribution of mind. Otherwise, all of the reality credited to the given has its source in the mind that thinks it; and the world is rendered an unknowable, inaccessible thing-in-itself.

It is meaningless, in my view, to say that something exists or is real, while having no possible idea of the properties which might supply its identity. That is the reason why I have emphasized throughout this dissertation that a world populated with such things-in-themselves is but an idle addition to idealism. Such a world can no more form an irreducible part of Putnam's well-known metaphor, than the ineffable substratum can save Maturana from solipsism. I suspect, moreover, that this will be the common result of every intuitionist attempt to describe the essential reciprocity of the knower and the known. We saw in chapter II how the essential reciprocity of method, mind and ontology lends support to Descartes' psychologism (section 2.3.1.2). Intuitionists ever since have faced, to paraphrase Quine, a similar "reciprocal containment" problem. We should discuss why this

¹³³ Ibid:162-3.

¹³⁴ See Putnam:1987; 1981.

happens before taking up, finally, that other least feature of the intuitionist given — that the given be present in its entirety to a mind.

4.5.1.1.2.1 The Reciprocal Containment Problem: Quine

Quine himself often vacillates between realism and operationism as he considers the implications of the reciprocal containment of ontological theory and method for his theory of "surface irritations."¹³⁵ On the one hand (and focusing on the idea that method determines ontology) he speaks pragmatically of the physical objects of science as "irreducible posits comparable, epistemologically, to the gods of Homer."¹³⁶ Other times — and focusing on the reverse containment — he remains committed to "unregenerate realism" and declares: "For my part I do...believe in physical objects and not in Homer's gods; and I consider it a scientific error to believe otherwise."¹³⁷ Why does Quine change his story? Above all else he, like Maturana, is committed to the notion of "linguistic enclosure":

What comes of the association of sentences with sentences is a vast verbal structure which, primarily as a whole is multifariously linked to non-verbal stimulations. These links attach to separate sentences...but the same sentences are so bound up in turn with one another and with further sentences that the non-verbal attachments themselves may stretch or give way under the strain. In an obvious way this structure of interconnected sentences is a single connected fabric including all sciences, and indeed everything we ever say about the world.¹³⁸

¹³⁵ Quine:1967:271–2.

¹³⁶ Quine:1980:44.

¹³⁷ Quine:1981:44–72.

¹³⁸ Ibid:12.

Quine wants to provide within language for the organization and existence of everything that may be credited to our world. It is only our choice of predicates that determines what we will find there, as something will be said to exist only if it can be specified by a bound variable connecting it to that "vast verbal structure" of language.

Existence, Quine has said, is only the value of a bound variable, though he adds that quantified sentences occur within a network of other sentences so that it is not quantification alone but also the relation of a quantified sentence to the other sentences of a theory which secures our right to make the existence claims. Language is, in all of this, the instrument for making the world thinkable. Mind is the measure as it chooses one or another semantical framework.¹³⁹

4.5.1.1.2.2 The Hermeneutic Circle

Also opposed to my naturalism is that version of hermeneutics that would have human inquiry forever trapped in a "circle" of interpretation — implying the perfect reciprocity of ones' ontological commitments and chosen method. In contrast to the work of Dilthey — who attempts to incorporate realism into his hermeneutics, or theory of understanding¹⁴⁰ — some hermeneuticists call for a recognition of the fundamental "groundlessness" of our experience. They would suggest, along with Putnam, that our experience of the world is neither a subjective, nor objective affair:

[1]...reality is not just constructed at our whim, for that would be to assume that there is a starting point we can choose from: inside first. [2] It also shows that reality cannot be understood as

¹³⁹ Weissman:1987a:284–5.

¹⁴⁰ Dilthey relies on an "inner/outer" dichotomy in defining understanding: "we call the process by which we recognize some inner content from signs received by the senses understanding" (Dilthey:1979:248).

given and that we are to perceive it and pick it up, as a recipient, for that would also be to assume a starting point: outside first.¹⁴¹

Like Dilthey, Varela invokes the concept of interpretation in his attempt to understand experience, but this time from a perspective that purports to "go beyond" the positions of idealism and realism.¹⁴² But does it? Considering [1] Varela clearly wants to distance himself from any idealism that would have the objects of the world depend for their existence and nature on our minds. [2] is more complex. Let us assume that he follows Sellars in rejecting the positivist notion of an unschematized given to experience. While some version of a naive "picture" theory of knowledge may suffer from these statements, the kind of realism we have been assuming is left unscathed. Varela confuses the fact that we must do something (interpret, explain, observe) in order to obtain any knowledge of the world, with the idea that what we discover about the world is essentially dependent, i.e., dependent for its existence and nature, on that activity:

...when we follow the guiding thread of circularity and its natural history, we may look at that quandary from a different perspective: that of participation and interpretation, where the subject and object are inseparably meshed. This interdependence is revealed to the extent that nowhere can I start with a pure account of either one, and wherever I choose to start is like a fractal that only reflects back precisely what I do: to describe it. By this logic, we stand in relation to the world as in a mirror that does not tell us how the world is: neither does it tell us how it is not. It reveals that it is possible to be the way we are being, and to act the way we have acted. It reveals that our experience is viable.¹⁴³

¹⁴¹ Varela:1984:322; numbers in brackets mine.

¹⁴² Varela:1986:14.

¹⁴³ Ibid:322.

My criticisms of hermeneutics are not meant to deny the obvious fact that the knowing subject "participates" in the determination of what is known (a logical necessity), or that interpretation is an integral part of the knowing process. Where I disagree with Varela is in the abrupt move from "participation and interpretation" to the idea that the subject and object are "inseparably meshed." He wants to support

...the possibility of a world view beyond the split between us and it, where knowledge and its world are as inseparable as the inseparability between perception and action.¹⁴⁴

Let us concentrate, then, on the injunction to view knowledge and its world as inseparable. In a certain sense, we have already admitted this much in previous chapters. No unconceptualized access to the world is possible: realists do not try to "speak the unspeakable." In other words, if Varela means only to underline the fact that nature — the external world — and our thoughts about nature mutually interact and effect one another, then we are in full agreement.¹⁴⁵ But of course this is not all that Varela means to assert. He goes on to say:

In this middle-way view, what we do is what we know, and ours is but one of many possible worlds. It is not a mirroring of the world, but the laying down of a world....¹⁴⁶

¹⁴⁴ Ibid:14.

¹⁴⁵ As we have noted on many occasions, it is a common objection to realism that that position calls for the (obviously impossible) task of comparing our representations with an unconceptualized reality. That would be the conflation of the mind-dependence of theory with the mind-dependence of reality. Or alternatively, it represents the confusion of the independence of nature from mind with the independence of our thoughts about nature from mind. And in Ruben's words, it is not the causal but the essential independence of the real from our activity and thoughts that we are concerned with (Ruben:1977:76).

¹⁴⁶ Varela:1986:14.

This, again, represents an equivocal use of the word world, alternating between constructing many possible theories of the world ("what we do [construct theories in this case] is what we know") and constructing or creating ("laying down") the world.

4.5.1.2 The Given as Present to a Mind

I have argued that every intuitionist given is necessarily differentiated and ordered. Is it true, in addition, that the given exists only if it is "seen to exist"; i.e., given in its entirety to thought or perception? That is the implication of Maturana's version of esse es percipi: "nothing pre-exists its distinction."¹⁴⁷ But this is true of every intuitionist, as they hope to eliminate every chance of error by limiting reality to those things to which they have unmediated access. Maturana is paradigmatic:

...we should in fact apply the notion of reality to this very domain of descriptions in which we, the describing system, interact with our descriptions as if with independent entities.¹⁴⁸

von Glasersfeld, too (despite his misunderstanding of the independence dimension of realism), is prepared to change the meaning and referent of the term "reality:"

If taken seriously [constructivist principles] are incompatible with the traditional notions of knowledge, truth and objectivity, and they require a radical reconstruction of one's concept of reality. Instead of an inaccessible realm beyond perception and cognition, it now becomes the experiential world we actually live in.¹⁴⁹

¹⁴⁷ Maturana:1988a:45.

¹⁴⁸ Maturana:1980a:51–2; emphasis added.

¹⁴⁹ von Glasersfeld:1989d:5.

go as minds alternately reflect upon or ignore those "worlds"? I suspect that it is only as intuitionist philosophers choose to ignore their method's ontology that such questions seem to go away.

between knower and known pushed to its logical extreme: naive acquaintance (Hume) and prescriptivism (Kant) with regard to the given move ineluctably toward the more complete constructivism. Before, a mind regarding or searching within the given is still not a mind credited with the ability to create or even determine the character of all that is given to it, as Kant's prescriptivist intuitionism claims only that mind organizes and unifies the (unschematized) data received.¹⁵² Now language or thought are the necessary ground for the existence and character of every other thing: mind, individually or corporately, creates the given from materials of its own making.¹⁵³

This Berkeleyian consequence of adopting the intuitionist method has two consequences. The first is that nothing uninspectable can exist. We say with Braithwaite, for instance, that natural laws have no reality apart from their applications:

The world is not made up of empirical facts with the addition of the laws of nature; what we call the laws of nature are conceptual devices by which we organize our empirical knowledge and predict the future.¹⁵⁴

Second — and possibly more unsettling — is the implication that inspectable yet currently uninspected things fail to exist as well. How will contemporary and predominantly atheistic philosophers provide for the enduring existence of all those things not currently being thought or perceived? Does everything within our many "experiential worlds" or "descriptive domains" come and

¹⁵² Ibid:179.

¹⁵³ Ibid:179.

¹⁵⁴ Braithwaite:1964:339.

In chapter II we traced the modern roots of this intuitionist result to Descartes' cogito. In the absence of God's guarantee, Descartes' existence, like the existence of every other thing, is conditional upon its being manifest to Descartes' mind:

I am, I exist, that is certain. But how often? Just when I think; for it might possibly be the case if I ceased entirely to think, that I should likewise cease altogether to exist.¹⁵⁰

It is all the more plausible now to see von Glasersfeld's "experiential reality" and Maturana's all-inclusive "descriptive domain" as simply two solipsistic "worlds" arising out of these contemporary reformulations of Descartes' criterion for existence. Yet these theorists are hardly alone in this, as every intuitionist supposes

...that Descartes' criterion for his own existence is the standard for every existing thing: each of them exists only as we know that it exists because of having it directly before our inspecting minds. It is not surprising, therefore, when Hume reduces the existence of things to the force and vivacity of our impressions, or when Kant identifies existence with the vivacity and coherence of those "objects" which are visible to the mind which has made them, or when Quine argues that existence is the value of a bound variable. Each of these solutions satisfies the demand that existence be ascribed to only those things which are constituted by the manner of their appearance before our minds. But then it also follows that nothing exists unless it is directly inspectable in this way, where mind's ability for confirming that it knows something is a condition for the very existence of the thing known.¹⁵¹

To the extent that we allow the conditions for knowledge to subsume the conditions for existence, the mind becomes responsible for the very existence of things. This is the intuitionist passion for closing the gap

¹⁵⁰ Descartes:1955:99.

¹⁵¹ Weissman:1987a:165.

CHAPTER 5

THE ONTOLOGY OF HYPOTHESIS: POSSIBILITY AND ACTUALITY

5.1 Introduction

In the last chapter we saw how the intuitionist identification of reality with the inspectable given has the effect of reducing every possible object of knowledge to some feature of the mind that thinks it. This was the result, for example, as von Glasersfeld's skeptical rejection of all mediated access to an observer-independent world compels him to replace the term "reality" with "experiential reality" (section 4.2). Yet realists suppose that it is this very observer-independent world — and not experience — which is the proper object of the theory of knowledge. Experience is merely the activity by which we come to know the world.

In chapter III, while discussing Maturana's treatment of perceptual illusions, I implied that his anti-realism represents an "overreaction" to the skeptical challenge. This is, admittedly, a relative notion, yet one that receives support both from arguments designed to show the scientific roots of that challenge (section 3.5), as well as from our naturalism. We refuse to say that the world is exhausted by, or even conditional upon, our experience:

Those who do say it worry that our knowledge is precarious, unless we bridge the gap between mind and the world by displacing all of form from the world into mind. This is panic turned grandiose, though the world does not require that we create it, or even that we make it thinkable, if there is a form intrinsic to the world.... There may be only these two choices: a world having an intrinsic but discoverable form of its own; or a

world, better called "experience" which mind creates as we project thinkable form onto sensory data.¹

While acknowledging that some of what I have said will not count against a thoroughgoing phenomenology of experience,² I persist in saying that the intuitionist description of the knowing process, as carrying us no further than our "experiential world," fails as a substitute for knowledge of the world itself. Only the latter takes up the challenge of showing how our thoughts and words might have reference to a world whose character and existence are independent of the fact that we may think or talk about it. Experience is not the object of knowledge, and the constructivist "world of experience"³ is simply a misleading metaphor.

This chapter, which is by far the most speculative of all, concerns the ontology of our alternative to intuitionism: the method of hypothesis. This is a method that categorically rejects any notion of the object of knowledge as the creation or discovery of a mind that either attends to its own contents or relies on language to determine, via some sort of "imposition," the properties and relations of the world. We admit that language is vital to our survival and communication (see chapter I) without having to reject the common sense notion that language, in its reportorial and most common use, represents states of affairs independent of language and thought.

Here is the first problem of our ontology: How does a state of affairs that is independent of language come to be represented in language, i.e.,

¹ Weissman:1989a:545.

² Though I am not convinced that such a position would be at all plausible, or even describable. See Weissman:1989b:22-4.

³ von Glasersfeld:1989d:5.

become the object of knowledge? We begin with this modal interpretation of Wittgenstein's picture theory of meaning and truth:⁴

...the facts in logical space are possibilities; every possibility is expressible in a state of affairs and in the sentence which represents that state of affairs; the co-expression of a possibility in a state of affairs and a sentence results in that correspondence relation which is truth.⁵

We say that sentences represent states of affairs by expressing the very possibilities instantiated in those states of affairs. It follows from this modal and Platonic reading of Wittgenstein that both sentences and states of affairs are expressions of a possibility which is distinguishable from them. Yet my account will differ from Wittgenstein's in two essential ways.⁶ First, I will assume that possibilities are both separable and distinguishable from their particular instantiations in language or actual states of affairs. Wittgenstein, in contrast, does not allow for the reality of possibles, independent of their instantiation in sentences or states of affairs: While the world is exhausted by "the facts in logical space" (1.13), "[n]othing in the province of logic can be merely possible" (2.0121).⁷

Rejecting Wittgenstein's restriction on his realism, we assume there to be these other, "eternal" (or logical) possibilities which exist apart from their more determinate expressions. And second, our reformulation of Wittgenstein's facts in logical space as properties existing as possibilities allows us to reject as empirically unfounded the isomorphism implied by the

⁴ Wittgenstein:1971.

⁵ Weissman:1977:57–8.

⁶ Ibid:55–6.

⁷ Wittgenstein:1963.

idea that a sentence represents a state of affairs by "picturing" it, just as our maps of the world generally are no mere likenesses of the terrain they represent.

5.2 Wittgenstein on Material Possibility

In the Tractatus, Wittgenstein's picture theory suggests a modal Platonism as a means of solving the problem of knowledge; where both the content of our propositional knowledge (our "pictures") and that which they are said to mirror (states of affairs) are expressions of one and the same form: "A picture has logico-pictorial form in common with what it depicts" (2.2).⁸ As each displays a form common to both of them a sentence comes to represent a state of affairs external to it. That form is a universal — a "fact in logical space."

Wittgenstein's skepticism about the reality of properties existing as possibles is a view that he shares with many philosophers:

We are physicalists or phenomenologists, with no place in either of them for the possibilities just mentioned. Even their characterization as "logical" misleads us, given one or the other of these ontological persuasions, for logic is understood as a set of rules, not as the principles of order expressed in every domain of being, including language, music and physics. Logical possibilities are, this implies, the shadows cast by rules; they are not entities of any sort.⁹

In particular, Wittgenstein would prefer to eliminate universals in favor of the internal properties or material conditions of objects, especially their combinatorial powers. It follows that the reality of a state of affairs is exhausted by the internal properties (or forms) of individual and particular

⁸ Ibid.

⁹ Weissman:1989b:86.

"substances" (or objects): "If all objects are given, then at the same time all possible states of affairs are given" (2.0124).¹⁰ Weissman reconstructs Wittgenstein's argument as follows:

Objects and names do sometimes assemble into configurations, because, among other reasons, they can do so; their configurations are the sure sign of prior capacities. These capacities, the internal properties of objects and names are their "essence." It is because of essence that objects and names contain the possibility of all situations (2.014). Every one of the possibilities in logical space "must be part of the nature of the object" (2.0123). If all objects and names are given, then all possible states of affairs are also given; latent form, the possibility of form, is identical with the fact that objects and names have internal properties qualifying them to combine with one another.¹¹

These remarks clearly suggest that Wittgenstein's reduction of possibilities in logical space (forms) to the "essence" of objects has the effect of limiting the real to the properties of particular objects and reducing eternal possibilities to material ones.¹² Saying that any event is possible, we mean that one or more of its material conditions are satisfied. This result is problematic in two respects. First, Wittgenstein's theory of objects is flawed in that it cannot account for the structural, or static, as well as dispositional, or dynamic, properties of objects.¹³ While Wittgenstein does talk about their configurations, this structural (or external) aspect of objects is rendered

¹⁰ Wittgenstein:1963.

¹¹ Weissman:1977:61.

¹² We often say that a sentence represents (or a state of affairs is) a "material" possibility when we suppose that some of the material, causal conditions for its occurrence are either (i) present; eg., "Snow is possible;" or (ii) projected, i.e., these material conditions, while not necessarily present, could be formed from the combination of existing conditions; eg., "It is possible that 10 feet of snow will fall this summer."

¹³ See Weissman:1977:64; 1965:187-90.

obsolete by his identification of the essence of objects with their internal properties (or dispositions). What would be the relation of objects, as "pure potentiality,"¹⁴ to their possible structural configurations? We normally assume that all objects will have both static (structural, external) and dynamic (dispositional, internal) properties, where possession of the former is a necessary condition for an object having properties (or "powers") of the latter sort. We suppose, for example, that having a brain organized in a particular fashion is a necessary feature of every being capable of philosophical reflection, just as the proper functioning of a pencil rests on its having a structure (mass and shape) of a certain sort. It is clear that Wittgenstein's objects are not so constrained, existing prior to any configuration as pure potentiality. Their configuration, moreover, is purely "accidental" and not, therefore, a necessary condition for having dispositions:

...Wittgenstein has not proved that objects must participate in configurations; there seems to be no a priori reason against saying that an object might, like a wholly inert gas, never join others in configuration. Moreover, these external properties result as objects are configured; they are no substitute for the structural properties that are required if objects are to have their internal properties.¹⁵

Second, we recall that Wittgenstein's reduction of eternal possibilities to material ones was to receive support from his account of objects or substance. Since that account does not make room for the structural, internal properties of those objects, that reduction fails. Nothing seems to provide now for the form of which true sentences and actual states of affairs in the world were to be co-expressions. As Wittgenstein denies the reality of

¹⁴ Weissman:1977:63.

¹⁵ Ibid:63.

universals, the purported isomorphism of a sentence and a state of affairs reduces to mere likeness. This is the well documented failure of Wittgenstein's picture theory of knowledge: sentences and states of affairs generally do not share the same form. Is there some other way of thinking about possibilities that avoids having to refer to eternally existing states of affairs?

5.3 Properties Existing as Possibilities

It is commonly assumed that every legitimate use of possibility is reducible to a variety of material possibility. Typically, candidates for that reduction fall into one of these three categories: (1) (efficient) causes qualified by their dispositions to interact with one another; (2) regulative principles (such as natural laws and linguistic rules); or (3) forms of mental intending (intentional objects).¹⁶ Each of these are meant to explain the nature of possibilities by construing them as material possibilities.

Our suggestion is that there remains this other use of possibility, saying that there exist logical possibilities for a certain property or set of properties.¹⁷ The actually existing or projected material conditions that undergird (1) through (3) above will be strictly irrelevant to the reality of these properties existing as possibilities and marking "definite differences eternally available for instantiation."¹⁸ These possibilities are universals, a realist rendering of Wittgenstein's "possibilities for form" or "facts in logical space." Contra Wittgenstein, we will argue that these universals exist ante rem as

¹⁶ Ibid:72-79.

¹⁷ Ibid:70.

¹⁸ Ibid:1977:79.

possibilities; possibilities available, moreover, for instantiation in actual states of affairs. How will we account for the reality of these universals? Their reality is acknowledged in principles having application to the world independent of the natural laws and linguistic rules upon which they have regulative force: the principles of non-contradiction and plenitude.

5.3.1 The Principle of Non-contradiction

It is generally accepted that the principle of non-contradiction operates in thought and language as a ineliminable formation rule or regulative principle, specifying a least condition for coherence. If that were not the case,

A sentence and its negation are then co-assertible — both p and not p — so that we may affirm that the principle of non-contradiction is and is not suspended. How could that be true, short of ambiguity in what we intend by "suspended"? Evidently, the principle operates in language as an ineliminable rule of special force.¹⁹

Here, the ontology of hypothesis is daring: Why not go one step further and suppose that the principle has force in the world itself, outside of thought and language? Or do we simply violate the principle of economy in cluttering up our ontology with abstract principles supposedly operating "out there" in the world, when we can (supposedly) account for the force of those principles within language and thought? Those who would agree with this last statement might adopt the maxim: "In ontology, the less the better."²⁰ Two responses are in order. First, and trivially, there is no inference from the fact of the principle's force within thought and language to its non-application to the world itself. Second, why not consider what would follow

¹⁹ Ibid:81.

²⁰ Devitt and Sterelny:1989:228.

from denying its application there, imagining that the principle fails to exert any force in the world outside of thought and language?²¹ Weissman comments:

One result will be that everything, for any respect in which it is considered, both is and is not. This is true whether we construe "is" to signify existence or predication. Whatever exists will, for that very reason, also fail to exist, for if not, not both p and not p, then both p and not p; it will exist and not exist. If red is one of its attributes, then it will also be not-red.²²

This first result is what Weissman calls the "both...and..." principle according to which everything both is and is not an instance of any particular property;²³ everything in that world would both be a ferret and not a ferret, four-legged and not four-legged. Yet our reluctance to admit co-existing contradictories into the world leads us immediately to this second result: the organizing principle of that world is now "neither...nor..." where our reflections on the first principle lead us to suspect that the two contradictories exclude one another, so that no thing is either four-legged or not-four-legged.

We normally suppose that items occurring in the world are differentiated from one another in respect to their differing properties. But on the first principle there is no way to distinguish them, because everything would have and not have every one of a set of contraries, or worse, every property. Were the second principle to apply, no property would qualify anything. Where the "both...and..." principle entails a world too

²¹ On one reading of the claim that the principle "has no force outside of language or thought," it follows that contradictions may actually occur in the world.

²² Weissman:1977:84.

²³ Ibid:84.

rich to imagine, this "neither...nor..." one requires that the world be devoid of character.²⁴

I will assume that neither of these imaginary principles have application to our world. It may be objected that this is a reductio that presupposes what it is supposed to establish; namely, the applicability of the principle of non-contradiction to our world. Have we not simply rejected these two imaginary principles because they have resulted in contraries not admissible on the basis of the principle of non-contradiction? We agree that all attempts to demonstrate the necessity of this principle (or any other principle so elementary) will fail because of presupposing it. Yet that is not the last word here, for we claim only to have displayed one possible result of assuming that the principle did not have force in our world. We rest having shown that the result is a choice between two worlds equally strange to us. We need only admit that the final step of this argument (i.e., saying that we must accept the principle of non-contradiction since its denial leads to a contradiction) would be question-begging, while accepting the principle as a useful directive for inquiry.

There is this other reason for supposing that the principle of non-contradiction does have force within the world itself and not merely within language and thought. Non-contradiction rests on the more fundamental principle of identity: everything is what it is and not some other thing.²⁵ Alternatively, and in terms of a thing's properties, no thing is both constituted of its properties and not-constituted of those properties. This will be a material claim that helps us locate non-contradiction in the world

²⁴ Ibid:84.

²⁵ Weissman:1989b:147.

outside of language, though we still will not have a logical demonstration of its necessary application there:

Let us suppose that everything is constituted of its properties, whether finite or infinitely denumerable, and that properties are constitutive of each thing's identity. Contradictions are generated when we say of any thing that its properties both include and do not include some particular property or properties. The thing is just itself, as constituted of its properties. Not having one or more of them, or having other properties additional to those constituting it would make that thing be constituted at the same moment by its properties, and by these same properties plus or minus one or more others.²⁶

These points suggest the following foundation for the reality of universals (properties) existing as eternal possibilities:

...contradiction operates in the world as a principle limiting the association of properties to one another [i.e., the principle of identity]. Its application in thought and language assures that we shall not meaningfully be able to ascribe to the world states of affairs that already could not obtain there.²⁷

Only this one qualification remains: the principle of non-contradiction serves only to determine which properties are free of contradiction. In order to generate properties existing as possibilities, we need to introduce the further, complementary assumption that whatever is not contradictory is in fact possible — the principle of plenitude.

5.3.2 The Principle of Plenitude

I have argued that no property is possible if it violates the principle of non-contradiction, so that nothing can be said to both have a property (eg., four-legged) and not have that property (not-four-legged). Alternatively, that a property satisfies the principle is a necessary, but not sufficient,

²⁶ Ibid:147.

²⁷ Ibid:82.

condition for its being a possibility. For any property to be possible we must invoke the further, complementary "principle of plenitude" which claims that whatever is not a contradiction is a possibility.²⁸ In other words

...something is either, though not both, a contradiction or a possibility. It follows now that properties satisfying the principle of plenitude because they are not contradictions are, necessarily, possibilities.²⁹

Furthermore, possibilities that necessarily exist can be said to exist eternally. As an example, consider the numerous, yet finite, possible ways 10 books (presently on the floor) may be arranged on a shelf. Any particular arrangement of the books will be possible in both a logical and a material sense. First, we note that the principle of plenitude sanctions any configuration not admitting of contradictory properties as necessarily, hence eternally, possible; as it is possible to have the titles arranged alphabetically in a row left to right, but it is not a possibility that the first book in that row will also be the third. The properties associated with the alphabetically arranged books would exist as logical possibilities even were I to choose a different arrangement, or no arrangement at all. Second, we suppose that the alphabetical arrangement is materially possible whenever sufficient material conditions for that state of affairs are present or projected, eg., the shelf, the books themselves along with their titles, and someone capable of arranging them accordingly.

²⁸ Weissman:1977:89-91.

²⁹ Ibid:92.

5.4 First Philosophy and The Mind as a Theatre

The notion that the principle of non-contradiction has force in the world as it sets restrictions on the possible association of properties is, I believe, consistent with Ruth Millikan's realist identification of properties as structures, or kinds of natural necessity found in the natural world.³⁰ These are properties whose character and existence are independent of language or thought.³¹

This structure [of an identity] is exhibited in the refusal of a property to admit any of its contrary properties onto the ground of any substance it qualifies.... This structure is exactly expressed by the law of non-contradiction.³²

It follows that coherence, or the lack of contradiction in one's set of beliefs, can serve as a test of correspondence between words and the world:

...coherence in thought corresponds to an abstract feature of the world. The law of non-contradiction reflects the (or a) structure of being. It is a template of the general structure of world affairs as it should reflect in thought....³³

Both Millikan and Weissman want to distance their theories from the traditional concerns of "first philosophy," according to which philosophy's role is to discover important truths a priori; that is, by reflection alone and prior to any empirical or scientific enterprise. We have had opportunity to note that, in particular, traditional epistemology has been overly concerned with the problem of justifying our knowledge-claims in a way that would

³⁰ Millikan:1984:Ch18.

³¹ See Weissman:1977:89.

³² Millikan:1984:300.

³³ Ibid:300-301.

satisfy the skeptic. We should emphasize now that a certain view of the mind and its activity dominates these discussions -- the intuitionist view of the "mind as a theatre."³⁴ In a very real sense, this view of the mind and its works, when not viewed simply as a prop for radical subjectivism, guarantees that the skeptical challenge will not be met:

There is a view of the mind and of perception that makes the skeptical worry acute. It is sometimes called, anachronistically, "the movie-show model" of the mind. The mind, the conscious self, does not have direct access to the external world: its access is via the sense organs.... The mind is like a person sitting in a movie theatre watching these perceptual impressions play on a screen. However, there is one crucial difference. The person can leave the theatre and look outside, but the mind cannot; it is forever confined to the action on the inner screen.³⁵

Weissman rejects this metaphor in its entirety, along with the privileged, a priori knowledge of the world it promises: There is no "mind's eye"³⁶ capable of seeing things "as they are, with no gap or medium distorting our view of them."³⁷ Our only alternative is "to speculate fallibly upon a world whose intelligibility is independent of the claims we make about it."³⁸ This can be stated another way: we are rejecting altogether the notion of "mental images" as a misleading metaphor deriving from the common understanding of perception as a process by which we "pick out" and

³⁴ Weissman:1989b:15.

³⁵ Devitt and Sterelny:1987:199-200.

³⁶ Weissman:1989b:15.

³⁷ Ibid:63.

³⁸ Ibid:136.

"entertain" images (including photographs and moving pictures) in the perceptual field:

When I am in a state of awareness that we metaphorically call "having a mental image," there is literally no object of awareness at all. There seems to me to be an object because I am in a state significantly like the state I am in when I see something. The similarity of the experience explains why we use this metaphor "mental image," but there literally are no such images. If there are no such images, then there are no objects for the state of awareness we call "having a mental image."³⁹

We can agree with Russman that the rejection of this metaphor eliminates the need for all "mental images" and intentional objects, and serves to undermine that "ineluctable thrust toward idealism" prefigured in all versions of "indirect" realism founded on the existence of these mental entities.⁴⁰ For once we equate the referents of our mental activity with these intentional objects

...then surely thought and language do fall into the solipsist abyss, where nothing but a generous God secures the reference of any thought or word beyond the stage of our private theatres.⁴¹

It is better, as Russman argues, that we say "some judgments are objectless, but meaningful, and therefore false."⁴² Yet Russman draws a false conclusion from the rejection of this metaphor: we are to suppose that "meaning no longer requires objects" of any sort, especially ones like

³⁹ Russman:1987:75.

⁴⁰ Ibid:74.

⁴¹ Weissman:1989b:86-7.

⁴² Russman:1987:74.

"eternally existing states of affairs."⁴³ In contrast, our treatment of properties existing as possibilities suggests that the very meaning (or sense) of our thoughts, words and sentences are possible states of affairs. I should be explicit: I am assuming that these eternal possibilities (along with their instantiations in space-time) are both the "senses" and "objects" of thought and language. The idea that the senses (or referents) of our words, sentences and thoughts are possibilities is not vulnerable to the problems associated with mental or intentional objects rehearsed above; and that is so because eternal possibilities are not mental entities:

They exist whether or not anyone thinks about them, just because of embodying no contradiction. They are, as Wittgenstein described them, the facts in logical space.... Everything actual is one of them, or more exactly, a possibility instantiated. Thought and language secure their grip on the world by signifying these possibles.... Meaning, this implies, is prior to truth, as possibilities signified are prior to the ones instantiated.⁴⁴

We specify the conditions for meaning and truth, then, in this way. First, our thoughts and words are meaningful when construed as signs of logical, as distinct from material, possibilities. It follows that these logical possibilities are the objects (or senses, referents) of our signs. Second, our thoughts and sentences⁴⁵ are true when these objects or states of affairs are actual. Something is actual when a possibility is instantiated. Even as every cat remains earth-bound, "the cat is on the moon" has sense, i.e., is

⁴³ Ibid:73.

⁴⁴ Weissman:1989b:87.

⁴⁵ Sentences, rather than words, are the least units of truth because of representing the most elementary facts of being, such as "x exists," or "x is round." See Weissman: 1989b:87.

meaningful because of embodying no contradiction, whether or not that possibility is ever instantiated. The nature of truth is a correspondence relation: the truth of a sentence is conditional upon the extra-linguistic fact that the possibility signified is actual, as when, in the presence of an actual cat on a mat, we correctly construe the natural signs of our perception as representing that actual state of affairs.

It is important to note, however, that we are still left with the problem of identifying which thoughts and sentences satisfy these conditions for meaning and truth. That is to say, in specifying these conditions for truth and meaning, we have come no closer to supplying the infallible foundations for our beliefs "first philosophy" seeks. How might we determine whether a particular thought or sentence signifies a possibility; or, when we convinced that it does, whether that possibility is instantiated? Is there really a cat on that mat? The answers to such questions will bear the mark of the hypothetical method: all of our contact with the world, including our observation of cat-behavior, will be mediated by natural and conventional signs organized into testable hypotheses.⁴⁶

It should be clear that our naturalistic answer to Kant's legitimate question "How is knowledge possible?" is not designed to satisfy the skeptic. Yet that does not mean that we have no answer at all:

Kant expected the answer to his question to supply a foundation for knowledge. And in a certain sense our answer does, but not in the sense of propelling our knowledge to be any more real or closer to some ideal of knowledge than it was before. The answer supplies a foundation for our knowledge by enabling us

⁴⁶ Ibid:Ch3; see also Weissman:1987a:289-91; 1977:Ch6.

to understand what foundation — what solid natural-world rock — it had been resting on all along.⁴⁷

This brings us a bit closer to answering the following question. Does the hypothetical method rest on a foundation of truths "grasped" a priori? Our application of the principles of plenitude and non-contradiction to the world did seem to have that a priori character, especially when we said that whatever is not a contradiction is, necessarily, a possibility. We want to know what separates this method from the intuitionist one that claims to achieve unmediated access to the given, as Plato's nous regards the Forms, or Descartes discovers the cogito.

We begin by noting that the principles listed above are not sufficient to generate the existents of our theory, including the domain of eternal possibilities.⁴⁸ The substantive, and fallible, nature of our theory enters as we speculate that these eternal possibilities are properties or complexes of properties having possibility as their mode of existence.⁴⁹ I assume that all philosophic inquiry is best understood in terms of this hypothetical method of producing meaningful sentences and testing for their truth. Our words and thoughts construed as signs for these possibles could only provide mediated access to the world, in contrast to the immediate access claimed for the variant forms of intuitionist thought. As we argued in the last chapter, intuitionism demands that everything real be presented or presentable for inspection. The very conditions for existence were subsumed under the conditions for knowledge:

⁴⁷ Millikan:1984:333.

⁴⁸ See Weissman:1989b:162–4.

⁴⁹ Ibid:164.

Sensations, ideas, words, sentences, theories, and mind itself are alleged to be inspectable, hence real. Other things, e.g., material objects or eternal possibilities, have no claim to reality because they are not inspectable. This idealist result is a consequence of the intuitionist demand that we eliminate every chance of error by closing the gap between thought and its objects. Error is precluded when nothing is concealed....⁵⁰

All forms of intuitionism derive from (or prefigure) Descartes' non-naturalistic starting point in epistemology where the knower is radically separate from the known. This has the result of placing philosophers behind a "veil of ideas" where they

...sought vainly to reach the world...(or alternatively, to pull the world in behind the veil). They placed themselves behind this veil by beginning with a vision or theory of mind as a realm in which ideas lived but which was outside the world these philosophers wished to reach with their ideas — the world, at least, of nature.⁵¹

We immediately add that there are these contemporary, linguistic versions of that veil (or "language games") where philosophers attempt to create meaningful theories "floating loose from the rest of the world."⁵² Our point all along has been that the attraction of this sort of idealism is rooted, for one, in the desire to eliminate every chance of error by reducing reality to all that is given to, or created by and then set before, inspecting mind.

I am assuming, in contrast, that our status as natural beings calls for a different understanding of our capacities as knowers. Lacking the ability to directly inspect or create the "given," our only alternative is to formulate

⁵⁰ Ibid:63.

⁵¹ Millikan:1984:332.

⁵² Ibid:332.

meaningful hypotheses, and then test for their truth.⁵³ Most of our thinking will be speculative in this way: there is a world whose existence and character are independent of our thoughts, so that

Every thought or sentence addressed to possibilities that may be, but are not necessarily, actual (as none are) is a hypothesis.⁵⁴

The speculative nature of much of our thinking, including perceptual judgments, as when we falsely credit the cat with being on the mat, speaks to the fallibility of that thinking:

If man qua knower is a natural creature, we have no reason to suppose that the way man knows is any more infallible than the way man manages to do anything else.⁵⁵

Now we assume that method is not independent of our character as natural beings; and having rejected as illusory the notion of "mental images," we suppose that our theories, language and thoughts must be in the world, along with everything else, accepting constraints from nature. That applies as well to our understanding of the necessary applicability of the principles of non-contradiction and plenitude as receiving support from the notion of objective identity:

If the law of non-contradiction is grasped "a priori," this must be so only in the sense that nature, via evolution, has built this grasp into us as a mirror or reflection...of a structural principle in the natural world with which we must deal in order to survive.⁵⁶

⁵³ Peirce:1965:2:135-155.

⁵⁴ Weissman:1989b:79.

⁵⁵ Millikan:1984:298.

⁵⁶ Ibid:257-8.

We can have no "a priori illumination of the world"⁵⁷ and should be prepared for the worst: "we might be permanently misled or deluded" about its nature.⁵⁸ Yet it does not follow that the nature of truth (to use Brand Blanshard's term) is not a correspondence relation. Our assumption has been the naturalistic one that the law of non-contradiction has force in the world, and that human beings, qua natural creatures, are constitutively able to construct meaningful, perhaps true sentences about that world:⁵⁹

From this standpoint it seems clear that man's knowing must be some kind of natural relation that he often bears to his world. Hence true sentences, being direct vehicles for conveying knowledge, must also bear some kind of natural relation...to man's world.⁶⁰

5.5 Actuality and Possibility

I am suggesting that a property existing as a possibility is not reducible to the set of its actual occurrences. I suppose instead that there are these two complementary, yet irreducible, modes of existence: actuality and possibility, where the difference between these two is the one of properties instantiated

⁵⁷ Weissman:1989b:129.

⁵⁸ Ibid:130.

⁵⁹ I therefore agree with Hilary Kornblith that our naturalistic refusal to answer the skeptic on his or her own terms signals our acceptance, at some level, of what he calls "ballpark psychologism," a doctrine that suggests that "to know something...is to arrive at a true belief...in a way very much like the way one ought" (Kornblith:1985:10). When it comes to specifying the features of mind capable of possessing knowledge, that is, we are committed to the mutual relevance of philosophy and an empirically tested cognitive psychology. Something similar follows from Ruth Millikan's rejection of epistemological holism: "If man is a natural creature and a product of evolution, it is reasonable to suppose that man's capacities as a knower are also a product of evolution.... Nor will it do to claim that coherence in a set of beliefs is the test of truth without at the same time attempting some explanation of why having a coherent set of beliefs rather than an incoherent set has anything to do with adapting to the world — that is, without explaining what coherence is for, how it helps..." (Millikan:1984:8).

⁶⁰ Millikan:1984:7.

and properties existing as possibles, respectively. We must sharply distinguish our view, therefore, from that version of modal realism that would reduce properties to the "set of all the [actual] instances."⁶¹

5.5.1 Modal Realism

Many philosophers find talk of possible worlds or possible individuals simply incredible.⁶² David Lewis's theories do violence to common sense, I suggest, for this reason: his reluctance to accept properties existing as possibles leads him to conflate actuality and possibility. Specifically, Lewis identifies every property with the set of its actual occurrences:

The simplest plan is to take a property just as the set of all its instances — all of them, this- and other-worldly alike. Thus the property of being a donkey comes out as the set of all donkeys, the donkeys of other worlds along with the donkeys of ours.⁶³

His notion of "possible worlds" is designed, for one, to explain statements about states of affairs that might have been: some things that did not happen could have happened, eg., "Germany might have won WWII."⁶⁴ The "incredulous stares"⁶⁵ follow from Lewis's reduction of properties to their actual occurrences. An ontology of possible worlds commits one to the existence, in addition to this universe, of countless alternative universes where "anything that could happen, did happen; and anything that could

⁶¹ Lewis:1986:161.

⁶² See, for example, Devitt and Sterelny:1989:31.

⁶³ Lewis:1986:50.

⁶⁴ Devitt and Sterelny:1989:31.

⁶⁵ Lewis:1973:86.

exist, does exist."⁶⁶ While we might suppose it to be true "around here" (in that universe that is "actual-for-us"⁶⁷) that Germany lost WWII,

...to say that such and such is possible — to say that it might have happened — is to say that it did happen somewhere else: it happened in some other possible world. It is true that Germany might have won because there is some unfortunate world where it did win.⁶⁸

These remarks suggest that Lewis in fact has no conception of possibility distinct from actuality. Possible worlds are just those actual worlds that are not actual-for-us, i.e., we have no causal access to them.⁶⁹ On our naturalistic view, it is difficult to imagine how Lewis's possible worlds could serve as an explanation of anything that may occur here, in our world. We would be committed to non-natural relations: someone using the name "George Bush" would be in a relation not just to our Bush, but also to entities in other possible worlds. These are entities to which we stand in no causal relation: possible worlds are causally segregated from one another.⁷⁰ My alternative has been to accept the reality of logical possibles sanctioned by the principle of plenitude: whatever is not contradictory is, by the law of the excluded middle, necessarily possible.⁷¹ We replace Lewis's possible (not-

⁶⁶ Devitt and Sterelny:1989:30.

⁶⁷ Ibid:30. Devitt rightly points out that Lewis's use of "exists" often appears to mean something like "here": to use our example, "three-legged ferrets," as a possible property not instantiated here, does in fact designate some creature "someplace else."

⁶⁸ Ibid:31.

⁶⁹ Lewis:1986:69–81.

⁷⁰ Devitt and Sterelny:1989:30.

⁷¹ The principle of plenitude claims only that whatever is not a contradiction is a possibility. We arrive at the necessary, hence eternal, existence of those possibilities only as we apply the

actual-for-us) worlds with properties existing as uninstantiated possibilities; eg., Lewis's talking donkeys. And in place of the modal realist claim that "anything that could exist, does exist," we say that everything that is not a contradiction is a possibility, and in that sense, exists as a possibility.

Possibility, this implies, is a mode of being complementary to actuality, but not reducible to it, for there is nothing in the principles of plenitude and contradiction to suggest that anything possible must be actual, as we do not say about anything we perceive — another person for instance — that he or she exists necessarily because of being a complex of non-contradictory properties.

We do not say this, and we are not encouraged to say it, because the principle of plenitude affirms only that it is possibles which stand in alternation to contradiction: either a contradiction or a possibility. It does not follow that the instantiation of any possible is necessary.⁷²

Lewis's conflation of possibility with some form of actuality parallels the reduction of all logical possibilities to material ones. While the properties and relations associated with "pure communism" (or "talking donkeys," for that matter) may be examples of eternal possibilities with no instantiations, those associated with a victorious Germany in the early 20th century are not. To think otherwise is to confuse material possibilities with eternal ones, for the possibility of the latter state of affairs lapsed along with the material conditions sufficient to bring it about. This follows from the determinate

inference rule of the excluded middle, so that "something is either, but not both, a contradiction or a possibility" (Weissman:1977:92).

⁷² Weissman:1989b:163.

nature of "individuals" (like early 20th century Germany), where every actual state of affairs differs from a possible one in being not further determinable.⁷³

5.5.2 Between Possibility and Actuality: Possibilities Instantiated

How then do we distinguish possibility from actuality? Possibility and actuality are two complementary modes of existence distinguished from one another on the basis of determinacy: "possibility differs from actuality as the determinable differs from the determinate."⁷⁴ Actual states of affairs (like a hungry person) are relatively straightforward. The complex of properties that constitute that event, together with the natural and conventional marks, sounds and mental states an observer might construe as signs of that event, are properties configured in space and time (or "space-time") and therefore determinate with respect to quality and number:

Properties configured in space and time include mass, charge, spin, and all the emergent properties resulting from the aggregation or configuration of these properties, as voice and a capacity for walking result from assembling the parts of a body. Actualities include, therefore, the things normally counted as physical together with the assemblies of things transformed by their interactions (i.e., events), and the dynamic, geometrized space-time where differentiated things and events are generated and sustained.⁷⁵

Properties existing as possibilities, however — in contrast to those actuals receiving individuation in space and time — will remain further

⁷³ See Weissman:1977:Ch3.

⁷⁴ Ibid:110.

⁷⁵ Weissman:1989b:160.

determinable in both quality and number, as the bare possibility of hunger awaits its determinate expression (or instantiation) in a particular animal.⁷⁶

Admittedly, this sketch of the ontology of possibles requires added exposition, but that is a project for another time. I suspect that few will be convinced from these remarks alone that "eternal" possibilities represent more than mere "shadows cast by our ideas." Fortunately, realists too can ignore their ontological commitments, while continuing to use the method of hypothesis. We can retreat a bit, therefore, from this ontological characterization of those possibilities in the following summary. The objects of our signs are, in the first instance, logically possible states of affairs: "she is hungry" is a meaningful hypothesis organized from signs representing a possible — because non-contradictory — situation that may or may not obtain in the world. The objects of our signs will be actual states of affairs whenever it happens that we refer in our hypotheses to instantiated possibilities. Observability remains the mark (or test) of instantiation, while the nature of truth is a correspondence relation: our hypothesis corresponds to a determinate and extra-linguistic state of affairs in the world when that person is in fact hungry.

⁷⁶ We can note also that our every effort to secure the welfare of non-human life presupposes a generally realist perspective on the external world: we are to reclaim that world for itself, by freeing the natural order from all those anthropocentric distortions that would reduce it to one or another extension of ourselves, our language or our experience.

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