1 Situating Semantics: An Overview of the Philosophy of John Perry

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Perry: A System Builder Step by Step

Contemporary analytic philosophers are not known as system builders. For the most part they have focused on particular problems in specific subdisciplines—for example, the role of emotions in virtue ethics, opaque contexts in modal logic, bivalence in the philosophy of quantum mechanics—and published their results in relatively short journal articles, making little effort at larger syntheses. Some take this approach because they see it as more scientific; others because they believe synoptic synthesis is impractical or even unachievable. Their practice stands in marked contrast with analytic philosophy in the modern period and contemporary philosophy in other traditions. Writers in the former category—such as Leibniz, Locke, Spinoza, Hume, and Kant—and in the latter—such as Husserl, Heidegger, and Derrida—have developed expansive views that explain human nature, language, our place in the world, and sometimes the world itself. These projects were sweeping in scope and comprehensive in aim, presenting entire worldviews.

Recent decades have seen a few analytic philosophers merge the two approaches by developing systems piecemeal. W. V. O. Quine, Donald Davidson, David Lewis, and Hilary Putnam are representative of this current. These writers have focused on narrow topics across a range of subjects, finding solutions that fit together like a mosaic into a broader and more systematic picture. We believe that John Perry's work falls within this new tradition. For nearly four decades, Perry has worked on a range of topics in metaphysics, epistemology, and the philosophies of language, mind, and action. He has approached all his subjects from a point of view that is squarely analytic, concentrating on explaining specific phenomena by using common sense concepts and the apparatus of modern logic. The product of these efforts is a systematic account of human nature that respects our basic intuitions about the world while doing justice to the complex demands of human experience.

A few bottom lines underwrite all of Perry's work. He maintains that an account of human nature must be both naturalistic and centered on the self. In his hands, this account is rooted in a sophisticated, information-based semantic theory that reveals many so-called philosophical problems to be the products of overly simple or incorrect theories of meaning. The outlook defined by these assumptions appears in his earliest writings and remains a factor throughout his work. In this introduction, we present a comprehensive overview of Perry's philosophical system, representing it as a theory of the self. After describing his idea of the self, we present the detailed theory in three stages, focusing in turn on content, action, and persons. With the theory in place, we proceed to demonstrate how his ideas about content can be used to fend off challenges involving consciousness and self-knowledge. We close by noting which aspects of Perry's system are addressed by the various contributions to this volume.

Perry's Self

John Perry sets out in his work to "explain human thought and action, including language, memory, and intention."[1] This theory—the "human-theory"—is the inheritance of each of us who master language and wield concepts of self, action, and attitudes, and Perry seeks to articulate and develop it into a form that establishes its coherence with physicalism. Perry's version of the human theory sees the human agent as a being in time, understood both synchronically and diachronically. Synchronically, it models the agent as a physical input/output system that converts perceptual inputs into practical outputs via the intercession of folk psychological states (e.g., beliefs, desires, and intentions). Diachronically, it models the agent as something that retains its identity across time. Thus, the notions of *self*, *identity*, and *time* play central roles in the theory.[2] Since his work on the human theory frames his contributions to metaphysics, epistemology, and the philosophies of language and mind, we can introduce his results and the explanatory system he develops with an integrated description of the self.

Perry's account of the self is grounded in two fundamental assumptions. First, there is physicalism, the view that all entities and events are fundamentally physical. Embracing physicalism about the self means accepting that, whatever appearances there may be to the contrary, thoughts like perceptions and beliefs must at the very least supervene on physical states. Perry commits to physicalism as his philosophical starting point, calling himself an "antecedent physicalist." As such, he will remain so committed unless he sees some "clear reason" to give it up.[3] Second, Perry assumes the prima facie legitimacy of common sense; indeed, he develops a version of common

sense about the self, according to which the self is a physical system endowed with cognitive skills and capacities, made out in folk psychological terms, that support and integrate perception, action, and communication. Let us call this view of the self ''physicalist common sense,'' or PCS.

In Perry's version of PCS, humans think about, talk about, and act in the world as conscious organisms that retain their identity over time. A person's thoughts include perceptual states, which we share with many other types of organisms, and higher level states like beliefs and desires that may set us apart. These thoughts cause, and are caused by, events in the world. Among their effects are actions, including linguistic utterances, that convey informational content from person to person. These particular effects are expressions of the person and mesh with the thoughts that cause them in interesting ways. Further, these persons remain identical over time in a way that is keyed to memory. Perry's account of personal identity is sympathetic to considerations Locke and Shoemaker raise in favor of the central role of memory in our concept of a person; it emphasizes, however, that memory itself is a causal notion; so, whatever we can do with the concept of personal identity in speculation and imagination, in reality it is rooted in the ongoing history of a complex organism.[4]

Persons, then, are persisting physical systems that perceive, think, and act—that is, they are complex input/output systems that interact causally with the world. We acquire information content (IC) through perception and language, storing this content as beliefs and later use these beliefs to advance our goals and satisfy our desires. A distinctive feature of Perry's view, exemplified here, is the importance of classification. He sees our ability to classify phenomena as one of the most basic features of human beings. Consider that perception and action are essentially classificatory in nature. We distinguish what we perceive into necessary/unnecessary, friend/foe, pleasant/unpleasant, and so forth, and our actions are likewise dependent on our ability to discriminate and categorize what is success conducing from what is not. Understood as discrimination and categorization, classification can be understood as a practice we engage in to order our experience—this is how we ''keep things straight.''

Our ability to carry out these classifications depends on contentful states, that is, states that carry information about the world and, directly or indirectly, control action. For Perry, these states can be understood as operating at three different levels. At the first level, we have perceptions and other states whose neural foundations are genetically hardwired or otherwise developmentally determined. These states drive activity without the intercession of conscious, language-like thought.[5] When we operate at this level, we are within the causal flow, with perceptions flowing in and behaviors flowing out, unmediated by explicit consideration of beliefs or desires. To the extent

that our behavior at this level is successful, it is because we are attuned to our environment; that is, our contentful states and the relations between them accurately reflect particular features of and regularities in the environment, respectively. Human agents operate on the first tier, but most living things operate *only* on this tier.

The second tier is occupied by those first-tier systems that can classify their own states and experiences by using propositions and concepts. These systems have access to beliefs and language-type, detachable representations that can be used to keep track of events past, present, and future. Representations of this sort make planning, reasoning, and memory possible. Human beings, perhaps along with certain other complex organisms,[6] generally operate as second-tier systems. The third tier is attained by those second-tier systems that are interested in the self, for example, folk theorists, philosophers, and psychologists. At this level, we seek to classify processes and states of the mind. Here we not only use propositions and concepts to classify things by their content, but also reflect on these practices, make them explicit, and extend them with a view to identifying nomological patterns. This is the level at which Perry works as he develops his views and designs a theory that is meant to explain the operation of human agents on all three tiers.[7]

Consider an example. Imagine that Josh is walking along an empty sidewalk, thinking about soccer. After a few blocks, he turns into a busy marketplace, the sidewalk giving way to a concourse filled with people. Head down, he moves through the crowd. As he goes, he automatically keeps track of the people near him. He modifies his trajectory and his movements to avoid the trajectories and movements of the people in his path, and he does so without consciously thinking about it. Throughout this complicated negotiation, he has continued to obsess about soccer. After a few minutes of this, he hears his name called out. Looking up, he scans the crowd before his eyes fix on a friendly face illuminated by a smile. He now believes that his friend Mary is in the market with him, and he raises his hand and says, ''Hello, Mary!'' This simple example illustrates the first two tiers described above: (a) our ability to classify without conscious thought, a first-tier ability, and (b) our ability to classify using occurrent beliefs and consciousness, a second-tier ability.

Perry thinks this development of PCS is sensible but acknowledges that it faces a range of problems. For example, any physicalist account of the self must address consciousness and free will, both of which seem intractable unless one's physicalism is loosened in some way. Second, the prospect that we remain the same self across time does not sit well with the physical changes marking the growth and maturation of an individual. There are also knotty epistemological concerns such as subjectivity, point of view, and self-knowledge, each of which seems more congenial to dualism than

physicalism. Problems like these have driven philosophers away from views like PCS and toward dualism, nominalism, or eliminativism in metaphysics and subjectivism, relativism, or skepticism in epistemology.

Perry resists the temptation to give up on PCS. He allows that the problems it faces are real but works hard to keep his solutions consistent with common sense while acknowledging that certain necessary refinements take the account beyond the naive folk picture. He locates this complexity, by and large, in his semantics, arguing that we can see the philosophical concerns that trouble PCS as creatures of language that can be handled with suitably sophisticated semantic analyses. We are sophisticated beings in a complex world, and our theory must be subtle enough to model this, but we can introduce the subtlety into the model without having to complicate the world beyond recognition.

The ''Human Theory''

Much of Perry's most prominent work over the past three decades has concerned the philosophy of language and mind, but in the background of all this has been his interest in the nature of the self and its place in the world. As we noted above, he has been out to produce a ''human-theory,'' that is, a systematic account of what we are as rational, cognitive agents and how we function in a dynamic world. His work on this theory is closely related to his semantic concerns, which generally relate to cognition and communication, two characteristically human activities. Humans are the proper object of a ''human-theory,'' but what does Perry take humans to be?

In Perry 2002, he supplies an answer to this question, proposing the following as a ''philosophical hypothesis'':

> (i) human beings are naturally occurring information-content harnessing devices; (ii) our system of using propositional attitude reports as explanations of actions (including internal acts such as theoretical or practical inferences) is a system of dual-purpose indirect classification, which involves attunement to the way humans work as information-content harnessing devices; and (iii) our concept of persons and personal identity reflects this attunement.[8]

In what follows, we will use this hypothesis to frame our description of Perry's self. We will emphasize the idea that humans are naturally occurring, IC-harnessing devices that can be attuned to their surroundings, wielding a dual-purpose indirect classification system in the interest of goal-directed activity, explanation, and understanding. In short, human persons are semantic beings capable of action. His theory of the self is a physicalist one. Within it, however, he is committed to accommodating our commonsense intuitions about consciousness, identity, and freedom, among other things,

as we will see later. In this section, we elaborate Perry's hypothesis, focusing on three salient dimensions: (a) the theory of content that explains what it is we harness, (b) the theory of action that connects our semantic abilities with our practical abilities, and (c) the theory of persons that unifies the elements into a full account of the self.

Theory of Content

Entrance into the theory of content is typically by way of metaphysics (e.g., what meaning and reference are, etc.) or epistemology (e.g., how we know what a sentence or utterance means, etc.). For Perry, the way in is through metaphysics. As he sees it, the world is chock-full of meaning, understood as informational content. ''Reality consists of situations,'' he tells us, and it is his understanding of situations that underpins his understanding of content. We begin this part with a description of situation theory and then follow that with Perry's account of information and IC. We close by considering his substantial contributions to semantic theory, detailing the role played by IC.

Situation theory The theory with which Perry's name may be most closely associated is probably situation semantics, a framework for explaining phenomena related to meaning that he developed with Jon Barwise in the late 1970s and early 1980s. The reigning paradigms for the semantic values of sentences at the time were truth-values as extensions and, for philosophers who followed developments in possible worlds semantics, functions from possible worlds to truth-values as their meanings or intensions. Other fact-based accounts were available, but they were widely regarded as having been discredited by ''the slingshot,'' an argument deployed by Church, Quine, Davidson, and others that contends that, on plausible assumptions, facts collapse into truth-values and so cannot be tenably taken as the *extension* of truth values. Barwise and Perry called this small argument ''the slingshot,'' in honor of Davidson's use of it to slay a giant, namely, Reichenbach fact-oriented semantics. On the issue in question, however, Barwise and Perry sympathized with Reichenbach rather than Davidson. On many other issues, they were influenced by Davidson, including his emphasis on truth-conditions as a central part of semantics and his advocacy of what Barwise and Perry called, after a remark of Davidson's critical of Fregean approaches, ''semantic innocence.''[9]

The central element of this account is the idea that sentences designate types of situations. There was no single problem that the introduction of situations was designed to solve; rather, Barwise and Perry saw a semantics based on situations as providing a framework within which certain conceptual problems could be given the right kind of solutions. It was the desire to supply perception and belief semantics with an innocent

account that forced the introduction of situations (Barwise and Perry 1980). The ''innocence'' in question is what Davidson calls ''our pre-Fregean semantic innocence,''[10] the idea that a word makes the same contribution to the content of a sentence or utterance, regardless of where in the sentence it occurs. Though Frege and others had solutions to these conceptual problems, Barwise and Perry viewed the solutions as fundamentally misguided because they were not innocent.

To illustrate the difference consider the following pair of sentences:

(1a) Sally believes Scott wrote *Waverly*.

(1b) Sally believes the man who wrote twenty-nine *Waverly* novels wrote *Waverly*.

Sentence (1b) might be true, while (1a) is false. This is puzzling on the assumption that the referent of an expression aids in determining the truth value of the enclosing sentence, given the fact that Scott is the man who wrote twenty-nine *Waverly* novels. Frege's well-known and very noninnocent solution is that embedded expressions do not have their usual referents but refer instead to what is normally their sense. In contrast, Barwise and Perry account for the difference by holding that the embedded sentences stand for different situations types. The property of being a man is, for example, a constituent of the situation designated by the embedded sentence in (1b), but not (1a). The basic reason for preferring an account like Barwise and Perry's over Frege's is a reason for thinking that semantic innocence holds, namely, that words mean something different in embedded contexts just seems implausible, to them as to Davidson.

With the development of situation semantics, semantic innocence became a fundamental tenet of Perry's philosophy of language. Situations have met a rather different fate. They have persisted as part of his metaphysics but, for a variety of reasons, have ceased to be the designate of utterances, their role taken up by various types of propositions. Metaphysically, ''real'' situations remain the basic components of reality for Perry. As the world divided into facts for early Wittgenstein, it divides into situations for Perry. What many think of as the basic metaphysical building blocks of the world—namely, individuals, properties, and relations—are ''uniformities'' or ''invariants'' across situations in this worldview. States of affairs are possibilities, conceived within a family of such uniformities; that is, they are possibilities for the properties and relations recognized therein to hold of the individuals recognized therein. A situation, a chunk of reality, *supports* a state of affairs. For example, the state of affairs in Perry's yard on 15 May 1980, supports the state of affairs $\langle$Running, Mollie, 1 = yes$\rangle$, making the latter factual. Situations can be typed by the kinds of states of affairs they support.

In addition, one type of situation can *involve* another; that is, if there is a situation of the involving type, there is a situation of the involved type. Such involvements are

called ''constraints.''[11] Constraints are ''systematic relations'' that hold between situations; more specifically, they are contingently existing, law-like relations that hold between specific types of situations.[12] They come in various types: necessary/logical; nomic/physical (e.g., natural laws); or conventional. These relations are a central part of Perry's metaphysics and epistemology. First, reality consists of situations knitted together by constraints—they are the relations that bind individuals, properties, and relations into the complex, overlapping patterns that constitute the world as we know it. Second, our knowledge of this world is grounded in our appreciation for the ways in which situations are so related. Indeed, as we shall see, attunement to these relations enables us to extract meaning from the facts we encounter in the world.

Information and information content Perry's situation-based, physicalist metaphysics is the foundation for his semantic theory. The meanings of our detachable representations—that is, our thoughts and words—are grounded in a naturalistic meaning that is fundamentally relational and implicative, where this is rooted in the involvement of situations. By moving in this direction, he rejects the idea of an internal, psychological theory of meaning and opts instead for an external theory of meaning that focuses on the ''described world.''[13] Meaning is all around us, underwritten by the existence of physical, logical, and conventional relations among situations. We get to meanings from situations with the help of *information*, where information is understood as what must be the case for the information carrier to have occurred as it did, given the way the world works. Though information first appears in ''Frege on Demonstratives'' in the form of singular contents of utterances, it remains mostly a crude metaphor until *Situation and attitudes*. The transforming event was the publication of Dretske's (1981) *Knowledge and the Flow of Information*, which had a strong influence on Perry's later writings. His use of information is in part a reaction to strengths and weaknesses in Dretske's account.

As Dretske defines information, an event *e* of type E carries the information *that p* if events of the type occur *only if* events of type *F* occur and an event of type *F* makes *p* true.[14] So defined, information has two distinctive features: it is indeterminate and it is infallible (i.e., it cannot be false). Both of these features distinguish information from meaning and, in particular, the semantic content of linguistic items and mental states. First, if an event carries the information *that p*, it also carries an indefinite number other pieces of information that are logically implied by *p*. In contrast, the fact that *p* logically implies *q* does not mean that a belief *that p* is also a belief *that q*. Second, to say that semantic content can be false is to say that a bearer can have the content

that *p* even if *p* is not the case. Falsehood is antithetical to the very concept of information, for, if something isn't true, it isn't information. These pose important challenges for Perry, who wishes to construct an information-based account of semantic content.

Perry takes information to be carried by physical aspects of the world.[15] Information is carried by facts or, more specifically, by situations that "carry information by virtue of making certain states of affairs factual."[16] The information carried by facts consists in the conditions that must have been realized by actual situations, given the way that situations are related to one another in the world, that is, given the constraints that bind situations to one another. This presupposes a largely stable set of constraints, each of which is regular and systematic as we have seen. The stability of this set of constraints ensures that one situation can dependably indicate how things stand with another. This situation-based account of information enables Perry to meet the first challenge posed above. An event can carry the information *that p* without carrying all logical consequences of *p*. As we have seen, information is always relative to constraints, and a constraint linking situations of type A to situations of type B does not link A-type situations to situations whose obtaining is logically implied by B-type situations. For example, a constraint linking being alive and breathing does not link events of being alive to situations involving mathematical propositions even if these situations are logically implied by the situation of something breathing. So, if the obtaining of a situation carries the information *that p* relative to constraint C, it does not carry all information that is logically implied by *p*, thereby meeting the first challenge.

Information is a significant step in the semantic direction for Perry, but it is only a step. We can read information off of facts in the world, and thereby learn things about the way the world works. But as the second challenge indicates, information is true *essentially*—if it isn't true, it can't be information. Because information must be true, "*X* carries the information that *P*" implies *P*; however, this is not the case with the meanings of our thoughts and words. To say of an utterance *U* of sentence *S* that it means *P* is not to imply *P*. Thus, the "carrying information" relation cannot be used to model the relevant "meaning" relation. Perry aims to model meaning insofar as we traffic in it, and an essentially truthful medium won't fit the bill. Our thoughts and our words can be true or false, and so semantics must meet the second challenge by doing justice to this bivalence. Thus, he needs something that (a) tracks the regularities in our experience and (b) can be false, because we often get things wrong. To do this job, Perry introduces IC, which he uses to classify representations that can get the world wrong.[17] This move is necessary to ensure that the concept of information

used as the basis of Perry's semantics has the intensional profile required by the second challenge. By introducing IC, Perry is able to capture the failure of the inference from means *P* to *P* while remaining committed to an external, information-based, semantic approach.

Following Perry, we turn to the standard issue home mousetrap for an example of IC, set in the context of action. Ideally, a constraint links the property of the cheese-carrying tray being depressed to the state of a mouse being on the trap. Given this constraint, the occurrence of this state of the tray carries the information that there is a mouse on the trap. When the state obtains in ideal circumstances and the trap snaps back, the necessary conditions in the environment obtain and the action is successful. But the connection between states of devices and organisms, on the one hand, and the external environment is obviously not infallible. The constraints that are operative in the real world are partial, not exceptionless, correlations. The tray may get depressed even if there is no mouse present, and so this state can be false, unlike carriers of information. The problem arises even more radically for the beliefs and other ''executable'' and ''detachable'' representations in complex, natural organisms—that is, representations that structure and shape our behavior underneath the level of consciousness and those that we can detach from the causal commerce of behavior and consider reflectively. In these organisms, success in the paradigm case depends on desires and beliefs, which provide longer-term representations of more stable regions of the environment, in addition to perceptions and tendencies to act. If our actions succeed in satisfying our desires, it is generally because our beliefs are correct. Beliefs, however, can be at least as unreliable as perceptions. We can represent the world as being *thus and so* when it is not, which is to say that we can *mis*represent the world. The states of the mouse trap and the complex agent do indicate how things stand in the world, relative to constraints, but because of their fallibility, they cannot be said to carry information. Rather, they carry representational content that Perry calls IC.

Perry develops this notion of IC, distinguishing between reflexive and incremental IC. Reflexive IC is relative to constraints, and incremental IC to both constraints and specific circumstances. To take an example from Israel and Perry 1991, given the principles of how they are formed, X rays carry a variety of different types of information. Consider an X ray of a dog with a broken leg. The X ray contains the *reflexive* IC that the dog *it* was taken of has a broken leg, relative to constraints based on how X rays work and animal anatomy. This is reflexive IC, since the content carried by the X ray is explicitly relative to itself. It contains the *incremental* IC that Mollie has a broken leg relative to all of that plus the circumstance that the X ray is *of* Mollie. We get to incremental IC by *loading* items from the context into the appropriate positions in the

reflexive content—for example, Mollie into the position in the reflexive content occupied by ''the dog it was taken of.''[18]

So developed, IC is crucial to an adequate understanding of our classificatory behavior. As we noted, Perry believes we are ''naturally occurring IC harnessing devices,'' and it is via our classificatory behavior that we harness IC. We naturally classify objects and events that we encounter, and our classificatory behavior is generally systematic and rational, keyed to the attributes of what we are classifying. We can classify these objects and events *directly*, in terms of their attributes, or *indirectly*, in terms of the information they carry about the attributes of *other* objects and events. Indirect classification is essentially connected to meaning: the information an object *O* carries about some other object or event is a semantic property, a type of meaning that can be attributed to *O*.[19] As before, when we move from idealized situations to the actual messy world, the flawless constraints that underlie information must be replaced by the partial correlations that actually obtain and that support IC. In developing his theory of IC in Perry 2001b, he focuses on situations involving utterances that can be indirectly classified in different ways, depending on how one perceives them in relationship to the surrounding world. Alternative classifications yield alternative ICs.

Semantic content To this point, we have seen that Perry takes us to use information and IC to classify situations indirectly in terms of what they tell us about other situations. As noted above, IC is the more relevant for Perry's purposes, as it allows him to characterize mind and language. Recall that, when we classify, we attend to certain attributes of the situation classified. When we classify indirectly, we attend to those attributes that indicate how things stand with a systematically related situation, where this relation is cashed out in terms of constraints. Indirect classification is the foundation of Perry's semantic story, and here we lay that out in more detail. We begin by surveying the semantic problems Perry has addressed during the past thirty years, concentrating on the development of his view. We then detail the mature view, presented most explicitly in Perry 2001b.

The problems Perry's knack for finding problems is on display in his early work in the philosophy of language, which focuses on demonstrative and indexical phenomena. In Perry 1977, he argues that statements containing indexicals and demonstratives, like those in (2), cause serious problems for Frege's semantic theory, based as it is on time-, self-, and location-independent senses and thoughts.

(2a) I am David Hume.

(2b) This is Edinburgh.

(2c) It is now 1775.

The problem in a nutshell is that Frege requires indexicals to function as *complete* senses in the sentences in which they occur. Because complete senses determine references for Frege, the senses of the sentences in (2) must change with utterance context, since their truth-values change with the context. It is implausible to suppose that the sense of any of the words in (2a), for example, change with context because what speakers know when they understand these expressions does not change. According to Frege, the sense of 'I' should complete the incomplete sense of 'am David Hume' (ignoring tense), but its features make it ill-suited to serve in this role. The upshot is that, *pace* Frege, indexicals must not have complete senses.

Perry addresses similar themes in Perry 1979 in the context of the then current concepts of *de re* and *de dicto* belief, the problem of quantifying in, and the ''new theory of reference.'' He maintains that action explanation poses problems for the standard analysis of beliefs as relations between individuals and context independent propositions:[20] we cannot account for why people act the way they do if we accept this picture of the attitudes. In order for a belief to lead to an action, the believer-actor must be related to the content of the belief in a context-dependent way one might express by using the word 'I'. For example, believing that *Hume is thirsty* (i.e., standing in relation to this proposition) cannot in and of itself lead Hume to ask for a glass of water and then proceed to drink it. He will only take these steps if he believes that *he* is Hume and so, from his perspective, that ''I am thirsty.'' However, what distinguishes the last belief from the first is not the proposition believed but how it is believed. It must be believed in a way that only Hume can believe it—something that the conventional picture cannot capture. To resolve this problem, Perry proposes that beliefs, like utterances, have multiple contents and that some of these contents are essentially indexical and self-locating, in that they specify where one is, who one is, or when it is in a way that that connects the believer viewed subjectively to individuals, time and places viewed objectively. In this early work, Perry argues that we need a level of meaning for utterances and thoughts patterned after Kaplan's concept of character, which different thoughts and utterances, with different contents and truth-values, can have in common. As he describes in ''Situating Semantics: A Response,'' in this volume, this view evolved into the reflexive-referential theory.

The important concept of unarticulated constituents emerges in Perry 1986. Having realized that explanations of our actions and many of our statements require self-reflexive contents, Perry notices that many of our statements lack explicit components

that function reflexively, picking out features of the statements. Consider his principal examples, weather and time reports. He argues that proper treatment of these requires one to incorporate the location where the report is made into the semantic content. This is so even though the reports themselves contain no elements that refer to these locations. The same is true of *thoughts* about time or weather. Thoughts on these topics may be about the location where they occur even though they lack an element that picks out these locations. Perry describes these unrepresented components of contents as ''unarticulated constituents'' and argues that they are pervasive features of language. Unarticulated constituents go on to become basic building blocks of Perry's account of how humans use language and perform actions.

In Perry's early work in the philosophy of language, the picture is that utterances and thoughts have two fundamental semantic properties: their meanings or roles, corresponding more or less to Kaplan's level of character, and their contents, the proposition a believer believes or a speaker expresses. For reasons Perry explains in his ''Response,'' this evolved into the reflexive-referential theory, in which the meaning gives rise to multiple contents in a systematic way, each content capturing what the world must be like for the thought or utterance to be true. The most basic contents are conditions on the thought or utterances themselves, and so are ''reflexive''; at the other end of the spectrum, we have the conditions put on the subject matter of the thoughts or utterances, taking all of the facts that determine reference as given. Evolution toward this view began with his response to Wettstein's criticisms of Perry 1986. In ''On Sense and Reference,'' Frege observed that true identities like (3a) might be informative, whereas those like (3b) almost never are:

(3a) Tully is Cicero.

(3b) Tully is Tully.

How this is possible was a puzzle for Frege under the assumption that the semantic values of the names are objects, since, granting this view, the claims made by (3a) and (3b) would appear to be the same. The puzzle, which seems to have been solved by Frege's distinction between sense and reference, was reopened by Ruth Marcus, Keith Donnellan, Saul Kripke, David Kaplan, Howard Wettstein, and other direct reference theorists who argued that the contribution of names to propositions expressed by utterances are individuals rather than senses or properties.

Perry describes utterances like (3a) and (3b) as differing in *cognitive significance*. A necessary condition for two utterances to differ in cognitive significance is that a rational speaker can take distinct attitudes toward them. He argues that one can explain the fact that a person may learn something from (3a) but not (3b) by focusing on what he

has come to call the ''reflexive truth conditions'' of the utterances. Reflexive truth conditions are what one grasps about an utterance purely in virtue of knowing certain facts about its structure and meaning. They are what one can grasp without knowing the context in which the utterance was produced, not knowing some or all of the connections that determine the reference of the names, and perhaps not even knowing the meanings of some of the expressions. Knowing only that 'Tully' and 'Cicero' are names, utterances of (3a) and (3b) have the truth conditions in (3a′) and (3b′), respectively:

(3a′) The referent of this utterance of 'Tully' is the same as the referent of this utterance of 'Cicero'.

(3b′) The referent of this utterance of 'Tully' is the same as the referent of this utterance of 'Tully'.

Perry also came to recognize that he needed to postulate more structure in the mind to adequately deal with semantic and doxastic phenomena, especially the concepts of saying and believing the same thing (Perry 1980). In the earliest work, beliefs were simply classified by the sentence ''accepted,'' that is, the sentence that the believer would use to express the belief. The first postulated structure was a mental *file* that is associated with repeated references to what the believer takes to be the same object. A mental file is a cognitive structure whose function is to unite information on a common topic. Because the names 'Tully' and 'Cicero' may head different files, containing different information, accepting (3a) may lead to the merging of distinct files and a reorganization of the audience's mental life with dramatic results. Such a rearrangement may occur with (3b), only if the two tokens of 'Tully' head different files, a far less likely occurrence. Perry contrasts the truth conditions of an utterance with the proposition it expresses, with the latter capturing something of the intuitive notion of *what is said* and which will involve individuals under theories of direct reference. Unlike the truth conditions, the proposition expressed will be the same for (3a) and (3b), if both are true.

A number of the foregoing ideas are applied to puzzles of belief in Crimmins and Perry 1989. In the years since *Situations and Attitudes* was published, the aforementioned assumption of semantic innocence gained a foothold in the philosophical community. Somewhat earlier, direct reference—the idea that names, pronouns, and demonstratives contribute individuals to claims made—also became popular. The problem Crimmins and Perry take on here is one generated by the joint assumption of semantic innocence and direct reference. These appear to conflict with the fact that one can change the truth-value of a belief report by substituting coreferential expressions into the embedded clause:

(4a) Miles Hendon believed that Edward Tudor was of royal blood.

(4b) Miles Hendon believed that *he* was of royal blood (pointing to Edward Tudor).

(4c) Edward Tudor was of royal blood.

(4d) He was of royal blood (pointing to Edward Tudor).

If these contexts are innocent, then 'he' and 'Edward Tudor' make the same contribution to the content of utterances of (4a) and (4b) that they make to utterances of (4c) and (4d). According to the theory of direct reference, this contribution is just the individual Edward Tudor. If this is so, however, then (4a) and (4b) should always have the same truth value, since the sentences are identical in all respects except that (4b) contains 'he', where (4a) has 'Edward Tudor', and, under these assumptions, these expressions are semantically equivalent in the sense that they make the same contribution to the proposition expressed by the reports. This consequence runs up against the fact that (4a) can be true while (4b) is false.

Crimmins and Perry reconcile innocence and direct reference with facts about substitutivity by complicating the semantics. They begin with the assumption that beliefs are concrete mental particulars whose parts include *notions*, roughly the mental equivalents of singular terms that stand for the topics of beliefs (e.g., Edward Tudor), and *ideas*, which are essentially mental predicates that stand for what is attributed to the topic (e.g., being of royal blood). Though the embedded clauses in (2a) and (2b) express the same proposition when taken alone, reports containing them do not. The content of the former report contains an 'Edward Tudor' notion, whereas the content of the latter is a demonstrative notion, corresponding to however Miles is thinking of the person indicated at the moment. Crimmins and Perry argue that the notions and ideas that make up a belief described in a report are unarticulated constituents of the proposition expressed by the report. Hence, the reports make different claims. The authors account for the truth of the first claim and the falsehood of the second by assuming that Miles has two mental files for Edward Tudor that Miles does not realize are of the same individual. If one file contains what he believes about Edward Tudor, when thought of under that name and as the successor to the crown, (2a) will be true. If the second file contains what Miles believes about him, taken as the poorly dressed boy in front of him, (2b) will be false. This solves the problem.

The account For Perry, semantic contents are ICs, and these are propositional tools used to get at patterns and regularities in nature, functioning as classificatory media. Given this, there is no reason to think that we should find only one IC associated with each situation we classify. In fact, given the density of relationships in which

real situations stand, it is to be expected that there will be multiple ways to classify a given situation in terms of what it indicates about other situations and, so, multiple ICs associated with it. As noted above, this is in fact Perry's view, and it has a significant influence on the shape of his reflexive-referential semantic theory, which applies to both linguistic and cognitive representations. In Perry 2001b, he examines situations involving utterances of sentences. These utterances can be indirectly classified in multiple ways, with alternative classifications yielding alternative ICs; each IC is properly understood to be a semantically evaluable content of the utterance because each purports to carry representational information about situations related to the utterance. Following Austin, Strawson, and Grice, Perry takes success and not truth to be the principal semantic standard for evaluating utterances. Thus, each of these ICs is a success condition on the utterance, that is, each indicates what must be the case for the utterance to have occurred, given the way the world works.[21]

This flies in the face of traditional semantic accounts of utterances, according to which they have a single, truth-evaluable semantic content and then possibly additional pragmatic contents. Success, though, includes truth, especially when one focuses, as Perry (2001b) does, on simple, indicative statements.[22] With these, the speaker will have wanted in most cases to express a truth, among other things. Thus, Perry is able to take success conditions for utterances of indicative sentences to include *truth* conditions. These ICs serve as conditions satisfaction of which ensures the truth of the utterance, given how the linguistically relevant parts of the world work. The speaker may wish to do more with the utterance than express a truth, though, and this would be reflected in success conditions that are more traditionally pragmatic in character.

In Perry 2001a, we are given a systematic means of identifying these ICs, namely, the "Content Analyzer."[23] This is a schematic formula that can be used to pick out truth and other success conditions associated with success-evaluable representations. The formula is:

(CA) Given *such and such*, Φ is ⟨true⟩ iff *so and so*.

Filling this out, Perry notes that "Φ is any truth-evaluable representation, *such and such* are facts about the representation, and *so and so* is the content assigned to Φ, given those facts. So and so is what *else*, in addition to such and such, has to be the case for Φ to be true."[24] While Perry casts this in terms of truth conditions, it can generate success conditions as well. The *such and such* deliver background conditions that constrain how the world is supposed to work by making explicit the aspects of the world that are relevant to our determination of why the linguistic or cognitive representation was

tokened. As you vary the *such and such*, you will get different truth conditions on the right-hand side of the formula. There appears to be no predetermined limit on how one might vary these conditions, which implies that there is no predetermined limit on the number of ICs associated with a given representation. These contents reveal different ways in which the representation is systematically related to other situations, and the density of relations in the world could generate an unlimited number of contents. However, the contents identified by Perry reflect his own interests and purposes, which are more limited.[25]

An example will help us get at the types of contents that receive the most attention in Perry's work. As noted above, this account applies to linguistic and cognitive representations, but we focus on the former for the purposes of this example. Consider the following sentence *S*, ''You are listening to me,'' uttered by someone within earshot of you as you walk down the hall. Call this utterance ''*U*(*S*).'' Using CA, we can identify the following ICs associated with *U*(*S*):

1. Given that *S* is interpreted relative to English syntax (and not some strange code), *U*(*S*) is true iff the referent of 'you' in *U*(*S*) is listening to the referent of 'me' in *U*(*S*).

2. Given that *S* is in English and 'you', 'are listening', and 'me' are interpreted conventionally, *U*(*S*) is true iff the addressee of *U*(*S*) has the property of listening to the speaker of *U*(*S*).

3. Given that the speaker is Jack and the addressee is Jill, *U*(*S*) is true iff Jill is listening to Jack.

4. Given that Belief(P) and Desire(Q) caused the production of *U*(*S*), *U*(*S*) is true iff the person addressed by the believer of P and the desirer of Q is listening to the selfsame believer and desirer.

5. Given that Jack wants Jill to acknowledge Jack's awareness, *U*(*S*) is successful iff Jill comes to believe that Jack believes Jill is listening to him.

Contents (1) and (2) are *reflexive*, since the conditions specified on the right side of the iff make mention of the utterance itself. Contents of this sort structure the production and interpretation of utterances, as they express those semantic aspects of sentences uttered that must be respected if we are to use them properly. These are the aspects we know how to exploit in producing successful utterances. These contents can also be where interpretation stops, in the case where we lack information about the intended referent of 'you', for instance.[26] Contents (3), (4), and (5) are *incremental*, in that they do not make mention of the utterance; they are obtained from reflexive contents by *loading* them with items drawn from the context of utterance. Content (3) is *referential*, because it is loaded with the referents of the referring terms 'you' and 'me' in

S. Content (4) is *architectural*, which is to say that it concerns "part of the same device, as opposed to something that is outside the device."[27] A representation has this content by virtue of its relation to other elements in the system that gives rise to it, and, in the case of an utterance, this includes the representational states of the speaker that are causally responsible for its production. Finally, content (5) is *pragmatic*. This content specifies a success condition that is not a truth condition, as its satisfaction is not necessary for the truth of *U*(*S*).[28] This reveals that the informational structure of situations is rich and multifaceted, supporting indirect classification of many types and for many different purposes. The classifications vary in terms of their distance from the event itself—they can be quite reflexive or more incremental.[29]

Perry's reflexive-referential theory is a theory of the ICs of representational states and events, such as beliefs and utterances. Take an utterance like *U*(*S*) above. The sentence type *S* is associated with a *meaning*, or a function from context to content, where the *content* is a success condition.[30] Among the ICs associated with the utterance will be (a) truth-evaluable contents that correspond to the different ways in which its truth orients us to the world, relative to various constraints and (b) success-evaluable contents that correspond to the different ways in which its success as a speech act orients us to the world, relative to various constraints. The *total content* is the total impact this utterance has on the systems of which it is a part, measured as a complex aggregate of the various ICs that are associated with it.[31]

We can close this section by characterizing what in general the final deliverable of a semantic theory should be, following a suggestion made in Perry 2002.[32] A semantic theory will specify the meanings of representations, where these can be states or events. One way to model this specification is in terms of functions that deliver ICs as their values. Focusing on events, take a representation event *e* of type *E*. (The same could be done for states, *mutatis mutandis*.) For this, there will be functions of the form

$$Y_E^x(a, t, F, e) = P.$$

Y assigns *P* to *e*, an event token produced by *a* at *t* in context *F*. The superscript *x* indicates what aspect of *e* the function *Y* concerns, where this corresponds to the *such and such* mentioned above in connection with the CA. In other words, *x* is a classification parameter that varies with the constraints relative to which we are evaluating the IC of *e*. (Presumably, the context variable *F* will vary with *x* as well.) For example, if we are interested in all informationally relevant constraints, *P* would be a proposition delivering the total content of *e*. For Perry, then, a semantic theory would fully specify these *Y* functions.[33] As *e* will have constituent structure, the theory must model regularities associated with the structural elements across $e_i \in E$. Each such element will have an

associated meaning and a contextually determinable range of contributions to associated ICs. The theory must provide systematic rules on constituent contribution that constrain these *Y* functions, ensuring that the propositional values are structured accordingly.[34] Each significant representation *e* will be associated with a range of ICs, and a semantic theory's job will be to determine this associated range by implying specified *Y* functions as theorems from axioms about the relevant constituent elements of *e*. Perry's work in semantics to date can be seen as a systematic attempt to develop a theory that does just this.

Theory of Action

Let's revisit Perry's philosophical hypothesis, focusing for now on the first two conditions. The first condition characterizes human beings as IC harnessing devices, which implies that we can capture IC and put it to use. The second focuses on a particular practice of human beings—namely, the practice of using beliefs and desires to explain action—but in doing so it calls attention to three important facts about the self: (a) it engages in action, including explanation using detachable, language-like representations; (b) the actions it engages in are meaningful, given that they can be indirectly classified for the purposes of explanation and understanding; and (c) we are attuned to these facts, which is to say that we *know how* we work as agents. On this view, we are input/output systems that take in IC via perception, using it to guide action via both executable representations that underwrite our know-how, marking us as first-tier systems, and detachable representations that figure into our propositional attitudes and mark us as second-tier systems. In this section, we focus our attention on the second condition and, in particular, the role of action in relation to IC. We begin by attending to the cognitive background of action (i.e., how IC is harnessed and put to use) before turning to a particularly important problem for a PCS account of action: the meshing problem.

Action and its cognitive background We are systems that *act*, where this is more than merely behaving. As a fan of folk psychology, Perry is committed to the idea that actions stand in complex relationships with cognitive representations, including beliefs, desires, and intentions. A robust account of action will depend, then, on an adequate account of these relationships, and that requires spending more time with the cognitive representations that figure into our IC transactions as well as the epistemic states they support. We create, store, process, and apply representations. Perry understands representations to be causally efficacious states of the system, and he believes they play the roles they do in our cognitive economy *because* of their

representational content. Thus, we are intentional systems, that is, systems that employ representations because of what they are *about*. Further, since we can misrepresent the world, we are also intensional systems, in that we employ ICs some of which are false. Finally, as we indicated previously in this section, the representations we employ come in different forms: (a) representations with executable contents to which we are attuned but that we cannot detach from the physical states that have them; (b) representations with perceptual content of the kind associated with Humean perceptual impressions; and (c) representations with detachable, language-like contents, such as beliefs and desires. Type (a) is grounded in genetics or custom, and together with (b) mark us as tier-one systems.

These representations underwrite our epistemic capacities. We can be said to know about ourselves and our world precisely because we can make use of representations. But they support knowledge in different ways. Types (a) and (b) underwrite procedural knowledge, or *know-how*. Perry takes know-how to be knowledge of ''facts about 'way-of' relations,'' that is, knowledge of how you bring about *X* by way of *Y*.[35] This knowledge does not consist in possession of a formula, or in explicitly represented (or even representable) knowledge, but rather in *attunement* to methods of bringing about results. If *S* brings *X* about by way of *Y*—for example, brings a swish about by way of a shot or a 300-yard drive about by way of a swing—then we can think of *S* as participating in a system that comprises those individuals, properties, and relations necessary for the bringing about of *X* by way of *Y*. Attunement to methods of bringing about *Y* requires that we ''track'' the relevant information carried by the states of this system. For example, to know how to settle a soccer ball with your right foot requires that you take information in via perception and then allow that information to guide how you position your right leg and your foot while receiving the ball; this typically happens very quickly and need not require any explicit, conscious representation. That is, one need not be able to say what it was that one just did to know how to do it. Here we are part of a system that involves us and a speeding soccer ball, and we are attuned to a method that concerns states of this system, namely, the method of bringing about a settled soccer ball by way of the right foot. As Perry puts it, ''my being attuned to the system is a bit like my becoming part of the system.''[36] As such, causation flows through us, guided by our perceptual impressions and executable representations, both of which are keyed to constraints operative on the system and are sensitive to changes in states of the system.

Type (c) representations figure into our propositional knowledge, or *know-that*. This type of knowledge marks second tier systems, as described in section II. These represen-

Table 1.1
Perry's classification of the states of an IC harnessing device.

	Thoughts	Actions
Causation	Representational States	Executions
Informational Content	Propositional Contents	Accomplishments

tations are epitomized by beliefs, understood to be cognitive states that can be indirectly classified by propositions structured in terms of ideas and notions (i.e., ideas of individuals). These exist to retain information and facilitate cognition and action. They can be linked to incoming information or to each other, or they can stand alone and be unlinked. If two beliefs are linked—say, by virtue of containing the same notion and so by being about the same individual—they form a *file*, which is a distributed collection of information that purports to be about the same object. We typically take IC in via perception, detach it from the perceptual experience and store it in a file, making it available for later use when we re-encounter and recognize the denotation of the belief. This is what Perry refers to as the "Detach and Recognize Information Game."[37] Perhaps the most important notion we have is the notion we have of ourselves, that is, our *self-notion*. As we will see below, this notion functions as a kind of roundhouse for the distribution of IC from perception through action.

The representations we employ and the knowledge that depends on them are crucial to our operation as IC harnessing devices. It is by virtue of these representations that we are able to take IC in via perception, manipulate it via thought, and channel it out via action in ways that are guided explicitly by our propositional knowledge and implicitly by our procedural knowledge. As IC harnessing devices that operate in the world, Perry argues that we can be classified in two ways, namely, informationally and causally. This is true for all stages of the IC harnessing process (i.e., for our thoughts as well as for our actions). Table 1.1 summarizes Perry's classifications.

Viewed causally a thought is a *representational state* with local physical properties. Seen from the point of view of a content-based explanation, what is relevant is the thought's *propositional content*. The causal aspect of an action is the physical movement, what Perry calls an *execution*. Executions of movements help us *accomplish* things; seen from this perspective, actions are designated *accomplishments* and are often characterized in terms of their content, for example, picking up the glass. Accomplishments are typically understood relative to the IC of the agent's intentions, which represent an agent's goals. Intentions are a type of thought and so have a causal and

informational aspect. As representational states, they cause executions, and as propositional contents, they locate those movements in the context of a larger plan, thereby revealing what the executions mean for that agent, that is, what goals they accomplish for her.[38]

The meshing problem By calling us "IC harnessing devices," Perry announces that the informational aspects of our thoughts and actions are relevant to our operation. That is, IC is causally relevant for him—he is no epiphenomenalist about the informational aspect of human agents. As Perry sees it, we function as we do because the two aspects of our thoughts and actions *mesh*. Our representational states structure our cognition and behavior in ways that are attuned to regularities and success conditions. Thus, cognition and action play out causally in ways that are 'sensitive' to content, according to Perry, and this is what constitutes meshing. As it turns out, though, meshing is more easily described than defended. A cogent defense requires an adequate response to the *meshing problem*, first posed in Fodor 1980. As Fodor states it, the puzzle concerns the viability of explanations of actions in terms of transparent contents. For example, we can explain why Perry reaches out, picks up the cup in front of him, and brings it to his lips for a drink by attributing to him mental states with transparent contents: he acted as he did because he believed of the cup, *c*, *that it was filled with water* and he desired *to drink water* and that these lead him to form the volition to pick up *c*. These contents involve relations between mental states and entities external to Perry. What makes this type of explanation puzzling is that the ability of mental states to cause actions rests on their local physical properties (their 'formal characteristics', in Fodor's terms) and not their relations to entities outside of the agent's body. The connection to *c* plays is irrelevant to the capacity for Perry's belief to cause his action. So, if explanations like this capture important generalizations, it can only be because these external contents are so aligned with their formal characteristics that they can act as surrogates for them, that is, mesh with them. How they can be counted on to do this is the meshing problem.

To see why the meshing problem is a problem, it is useful to note what might happen if formal properties and external relations came apart. If this occurred, sensible combinations of mental states might cause inappropriate actions (e.g., states with the contents described above could cause Perry to scratch his head) or strange combinations of states cause appropriate actions (e.g., the belief that the earth is flat and the desire to watch television cause Perry to reach out and take a drink). An adequate solution must show how a state comes to have a particular external content just when it

has the formal properties enabling it to cause actions that can be rationally explained using those external contents.

Fodor's solution to the problem sees the formal properties of a mental state as a common source of for both its causal properties and its content, thus tying the force behind causal explanations of action to contents used to rationalize those actions and accounting for their alignment. Israel and Perry agree that explanation by means of external contents is possible, ''The belief and the desire make sense of the action. The action will promote the satisfaction of the desire if the belief is true.''[39] But they think Fodor's solution will not work. They note that not only are transparent contents external, they are circumstantial—that is, determined by context—as Putnam's ''twin'' examples and many of Perry's writings hammer home. This leads to an even more radical version of the problem:

> How can causal and content properties of tokens mesh, if the content properties of a token depend on both its form and on such particular external circumstances, while causal properties depend on form alone? If contents are sensitive to external circumstances, and so classify persons who are internally similar as different, and those who are internally different as similar, how can content-based principles of rationality mesh with causal laws?[40]

Since external contents are a function of formal properties and external circumstances and causal properties a function of only formal properties, formal properties alone cannot explain how causal properties and external contents yield parallel explanations of actions.

A solution to the meshing problem must show how the causal properties and transparent contents of mental states are linked so that the causal properties will result in an action when and only when the transparent contents explain that action. Perry's solution to the problem, developed first in collaboration with David Israel, proceeds in two stages. First, it captures the fact that the causal power of mental states reside in their local physical/formal properties by formulating a generalization in terms of the reflexive truth conditions of mental states, linking these states with the actions they cause. As with utterances, the reflexive truth conditions of mental states are explicitly tied to the structure of the state and so can reflect the local causal properties that account for actions in the most fundamental way. Second, applying the idea of multiple contents detailed above, it provides a systematic link between reflexive truth conditions and incremental truth conditions that ensures the viability of explanations by means of the latter whenever explanations by means of the former are viable. This solution takes incremental contents to be natural elaborations of reflexive contents that capture the local physical properties of mental states. Reflexive ICs lead to more and more

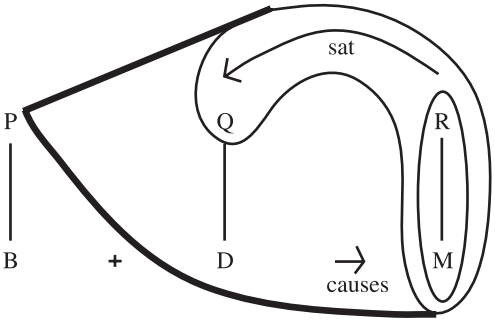

Figure 1.1
A representation of the way in which content and causation mesh in the context of intentional action.

incremental ICs when external objects replace descriptive contents that pick the objects out, that is, as more and more facts about the connections between the believer's ideas and the external world are loaded.

This is not to say that the IC is causally efficacious in its own right (it isn't); rather, what is required is that the causal powers of the representational states be determined by the IC they carry. This determination has a causal feel to it but can be distinguished from the efficient, push/pull causation that is the focus of causal talk in this domain. Dretske's (1988) distinction between *triggering* and *structuring* causation can help us here. Representational states that participate in causal exchanges, producing effects, are *triggering* causes, but their roles in these exchanges are structured by the IC they carry; that is, the exchanges in which they participate and how they participate in them are shaped by their informational profile.[41] Thus, IC functions as a type of *structuring* cause, determining the triggering causal powers of the states that carry it. It is for this reason that we can explain our actions as we do—we treat actions as signals in a system that is architecturally rigged to transfer IC from perceptions and internal states to actions aimed at satisfying the goals of the system.

By way of summary, we can turn to Perry 2002, where we find a detailed discussion of what he calls the "Meshing Principle."[42] For our purposes, we can examine Perry's formulation of the principle by inspecting figure 1.1. The belief state B and desire state D cause a movement M (bottom row). Because reflexive truth conditions capture the causal properties of states, the link between the reflexive truth conditions of B and D, on the one hand, and the reflexive description of M as an execution describe this causal connection. At the same time, the belief and desire have incremental contents P and Q, respectively, and the movement can be characterized in terms of the results

it produces, R (top row). Given that content and causation mesh, when B and D cause M, B will have a content that ties M to a result the achievement of which will satisfy the content of D. That is, the agent will believe that by executing movement M, one will accomplish R and thereby satisfy the desire D as specified by Q. The content of B ties M to R and R to Q, which is the content of D, and so D motivates the agent to execute M in a way that is guided by B. Thus, causal connectedness suffices for content connectedness, and the result is a coherent IC harnessing system that meshes causation and content.

Theory of Persons

As we learned from Locke, a philosophical theory of persons must provide an analysis relating the concept 'person' to the concept 'human being'. Perry accepts this challenge, and in fact complicates it by suggesting that 'the self' need not be another way of getting at the concept 'person'. A person, for Perry, is ''a physical system with the unity physical systems can possess, not a unity based on some other inner agent and perceiver or mysterious principle.''[43] And whereas 'self' can be used as ''a prefix for names of activities and attitudes,'' establishing a difference between the concepts 'self' and 'person', Perry opts for the ''straightforward'' view that the self just is the person.[44] As a physicalist, it is not open to Perry to identify the person/self with some ''mysterious principle'' that is essentially unrelated to the human being. Human beings are ''live human bodies,'' but as we have seen, much of Perry's work has been devoted to developing an account of these in all their complexity. In particular, his PCS version of folk psychology, the ''human-theory,'' is anchored in the view of human beings as IC harnessing devices who are attuned to themselves as such and who have self-concepts that reflect this attunement. The theory that emerges from his work, then, is that the person/self just is the human being in the typical case—although they are not conceptually identical, they coincide in normal experience. Further, this person/self/human being must be understood as a complicated, physical system that traffics in IC, harnessing it for cognition and action, a fact that accounts for the explanatory relevance of propositional attitudes.

So understood, a person's actions are structured by the IC of cognitive states and are performed in the service of system goals. We can now say a bit more about how the physical nature of the system helps to structure these actions. Our pursuit of our goals in the world is structured fundamentally by what Perry calls *epistemic/pragmatic* (E/P) *relations*, which are subjective relations that support ''subject dependent ways of knowing'' and ''subject dependent ways of acting.''[45] For example, the relation *in front of me* is an E/P relation. (Other examples include *now*, *here*, *on my skin*, etc.) There are certain

ways of knowing about things in front of oneself to which one is attuned—for example, square your head so that you are looking forward and open your eyes, reach forward and feel with your hands, or turn your head to one side and cup your hand to your ear. There are also certain ways of acting on something in front of oneself to which one is attuned. For example, if one wants to give a plate to someone who is standing in front of oneself, one reaches forward with plate in hand, presenting it to the intended recipient. In general, where *R* is an E/P relation, it will support ''normally *R*-informative ways of perceiving/knowing'' as well as *R*-effecting ways of acting. Perry argues that the *R*-informative ways of knowing and the *R*-effecting ways of acting are architecturally connected to a type of buffer that serves as a roundhouse for information that is obtained in *R*-informative ways and so becomes potentially *R*-effecting, and this buffer becomes a standing idea, or notion, of the individual that happens to be occupying that subject-relative place at any given time. Returning to our example, one perceives the thing in front of oneself and acts on it in a way that is guided by an idea of that thing as *the thing in front of me*, making this the *in front of me* notion. One may also know about it under some other guise, but knowing about it in this way is what accounts for how the perceptual information taken in structures the actions one performs on the individual in that place.

E/P relations are a reflection of two things: (a) we are subjects that perceive and act, and (b) we are systems that have a physical architecture. Given (b), we should expect (a) to be dependent on that architecture. For Perry, this dependence is cashed out in terms of E/P relations—this is his way of developing an embodied theory of cognition and action, akin in interesting respects to that of Merleau-Ponty.[46] E/P relations underwrite architecturally rigged IC channels involving input and output functions. These channels convey IC in ways that do not require conscious recognition of the sort typically associated with detachable representations. As such, we modify our behavior in *R*-effecting ways based on the *R*-informative IC we have taken in, and all of this is often done under the level of conscious radar. Thus, it is clear that our attunement to ourselves and our environment depends on these relations, as does our know-how.

For our purposes, perhaps the most important example of an E/P relation is *identity*, with its associated *R*-notion, the self-notion. What we get with *identity* is a type of *R*-relation that figures prominently into cognition and action in a special way. We don't need an objective self-notion for many types of actions—the information flows in at the subjective level, from normally self-informative ways of perceiving to normally self-effecting ways of acting without involving detachable representations. This is guaranteed architecturally by the physical nature of the type of system we are, reflecting the fact that we are ''points of origin'' on the world and can channel IC from that

point of view without having to render it objectively. Our understanding of what it is to be a person, both at a time and across time, is rooted in our self-notion. The detached concept we have of persons arises in the first instance out of our own attached, subjective experience and, so, is a reflection of our self-notion. In Perry's view, our concept of the person will be accurate to the extent that it reflects our own attunement to how our self channels IC from world to action.

One important aspect of our concept 'person' that grows out of our own subjective experience is the relation of different stages of the same person, that is, the relation of *personal* identity. Identity as an E/P relation is a short-term, subjective instance of this more general relation. Identity in our own case is grounded in the structured flow of IC from perception through action, a temporally extended event that is experienced subjectively as involving the self-same person. Although these events are often brief, they can be longer in duration—our understanding of our own persistence over time is dependent on our continuous and unified experience of IC-mediated interactions with our environment. The same is true of selves experienced objectively—we understand how humans act and react based on our belief that they remain unified across changes in circumstance. We know that putting a piece of cake in front a hungry dessert fan will typically result in the disappearance of the cake and that tossing a ball at a boy with a glove will typically result in catching behavior. Whether subjective or objective, though, these events are understood as involving different stages of the same human. Indeed, our working knowledge of how humans work—our ''human-theory''—comprises hedged regularities such as these involving different human stages that are ''H-related,'' that is, different stages of the same human.

But *why* are different stages of humans so related? What explains this relationship? For Perry, the answer to this question involves another relation, the ''P-relation,'' that is, ''the relation which explains (or, if known, would explain) the approximate validity of the principles about humans that we subscribe to.''[47] This is his analysis of ''the unity relation for persons, that relation which obtains between two stages if and only if there is a person of which both are stages'' or, in other words, his analysis of the relation of personal identity. Perry takes the P-relation to be a causal one, involving the familiar causal pathways of memory and anticipation. This fact illuminates the importance of bodily identity, since it typically underwrites causal connectedness, conditions our intuitions about personal identity, and indeed, structures our commonsense understanding of what it is to be a person. To be sure, bodily identity is neither conceptually necessary nor sufficient for personal identity—the often creative literature on personal identity has made a strong case for this—but in most cases with which we are familiar, bodies and person stick together. In those thought experiments where

they come apart, our concept of person can be challenged, leaving us with little that we can confidently say. As the P-relation resides in the explanans, though, we associate our concept of person with it in these challenging circumstances—like a good theoretical tool, it gives us guidance in the difficult circumstances while doing justice to common sense.

Common sense dictates that we take human beings to be perceiving, thinking, acting subjects who have a perspective on the world they occupy. We are reasonable beings with minds that move us intelligently through the world. We are both effects and causes, responding to our environments in ways conducive to our own survival and, in the best cases, our own pleasure. Perry accepts this characterization and models us with it in mind.[48] But, whereas Hume and the moderns took Aristotle's "rational animal" characterization as the starting point for their theories of human nature, Perry is better described as taking humans to be a complex type of "semantic animal." Granted, Perry believes that any organism that is responsive to its environment—quite probably any living organism—is a semantic being, in that its responses must reflect at least a hardwired sensitivity to the informational/causal character of the world. We are the same, in that we are also tier-one systems with hardwired responses to aspects of our environments, including those that are reflected in the E/P relations that account for our subjective perspective on the world; however, we are so much more than this. As tier-two and -three systems, we can also traffic in IC detached from the causal influences of the present moment and stored for later manipulation and use. We are IC-harnessing devices that are attuned to this fact, and so, when we traffic in meaning, we can know that we are doing it and thereby display a greater degree of flexibility and control—that is, *intelligence*—over ourselves and our environment. IC also accounts for the fact that we are goal driven, as it is our ability to take the IC we've stored, manipulate it, and generate representations of how we would like things to be that motivates us to act as we do. In sum, then, we are the reasonable, goal-driven creatures we are because we are able to harness IC and employ it in complex ways.

Problems for the Self

Perry treats problems faced by PCS in various places—consciousness in Perry 2001a, free will in Perry 2004, subjectivity and self-knowledge in Perry 2002. In this section, we focus on the details of two of these, namely, consciousness and self-knowledge.

In Perry 2002, we are told that the "straightforward view . . . that the self is just the person and that a person is a physical system . . . has been challenged on (at least) two fronts."[49] On one front, we find consciousness, and, on the other, self-knowledge. The

problem posed by consciousness is that purely physical accounts seem ill equipped to explain the existence of qualia, those aspects of experience that are responsible for ''what it is like to be'' a conscious agent.[50] Dualists argue that this appearance of inadequacy is real and, as a result, physicalism must not be the whole story—there must be something nonphysical about human beings as well. Perry disagrees, making his case at length in Perry 2001a against three attacks on physicalism: the Zombie Argument (Chalmers 1996), the Knowledge Argument (Jackson 1986), and the Modal Argument (Kripke 1980).

We focus especially on his response to the Knowledge Argument, which follows the scientist Mary from her black and white room out into the world of color. Jackson uses this to argue that a physicalist account cannot tell us all there is to know about conscious experience. By hypothesis, Mary learns all there is to know about the physical character of color and color perception while in the black and white room, but she still seems to learn something new when presented with red for the first time; arguably, a new fact about the world, what it is like to see red. If this is so, there must be nonphysical facts. Perry feels the intuitive tug of this argument but denies that it is sufficient to upset his antecedent commitment to physicalism. His approach is to acknowledge that Mary learns something new while denying that she learns a new fact. If she knew all there was to know about color and color perception before seeing red, then, Perry contends, she knew what it was like to have a red visual experience, that is, she knew (a): ''Q_R is what it is like to see red,'' where 'Q_R' is a context independent way of referring to a particular mental state. When she sees red for the first time, she learns something that can be expressed as (b): ''This$_i$ is what it is like to see red,'' where 'this$_i$' refers to the perceptual experience that Mary has upon seeing red, the same state designated by 'Q_R'.

Utterances of these two sentences by Mary express the same fact—that is, have the same incremental truth conditions—but Mary is now in a position to know of this fact in a different way. Further, this new way puts her in a position to make an inference to (c): ''Q_R is this$_i$,'' which is to say that the red qualia that she knew about before, from her studies, is the very subjective character she is now experiencing. Once again, this has the same incremental truth condition as (a), so it does not deliver a new fact; however, it puts her in a position to recognize the red subjective character when she sees it again. It does this via Mary's newly acquired attunement to its *reflexive* content, namely, that (c) is true iff the subjective character one has when seeing red is the subjective character to which I (i.e., Mary) am attending when producing this utterance. Thus, upon seeing red, Mary acquires new ''recognitional or identificational knowledge'' of the color red that is not cashed out in terms of subject matter but in terms of

reflexive content. There is no new fact, but there is new knowledge of the old fact, and so Perry can maintain his antecedent physicalism while doing justice to the intuitions behind Jackson's case.[51]

Self-knowledge is a different type of problem for PCS. Whereas consciousness threatens to force the antecedent physicalist to embrace something nonphysical, self-knowledge suggests that the physicalist account might not just be incomplete, but wrongheaded. If the self is just the person, and the person is just a physical being, then knowledge of the self should be the same kind as knowledge of any other physical being. Self-knowledge, however, appears to have a very different character. In particular, it is essentially indexical and immune to "certain sorts of misidentification," as Descartes underscored years ago. It also plays a unique cognitive role vis-à-vis the actions performed by the agent who has it. These features differentiate it from knowledge of other things by emphasizing its subjective character. While Rebecca and Natalie could have the same knowledge of a coffee cup, Rebecca could not have the same knowledge of Natalie that Natalie has of herself. The self would appear to be a very different type of thing than other things, by virtue of its essential subjectivity. Physicalism, which appears to make no allowance for this, is once again confronted with a problem, but this time it is more serious. If this charge is correct, then physicalism can make no headway toward a proper account of the self. Perry resists the critique, arguing that the physicalist can indeed account for self-knowledge without compromising any of its essential principles.

Once again, Perry's semantics leads the way to a solution. As we have seen, on Perry's view we traffic in IC, taking it in, processing it, and producing more of it as we act. We are IC-harnessing devices, but it is important to note, we are devices with a point of view. This is analyzed in terms of input/output channels underwritten by E/P relations and mediated by *R*-notions—these convey information from perception through action in ways that are mostly automatic and dependent on attunement. The E/P relation *Identity* and the self-notion emerge as most important for our purposes once again. E/P relations and their associated notions are a physicalist's way of building subjectivity into an objective model, and Perry argues that they account for the problematic aspects of self-knowledge. The essentially indexical character of self-knowledge is explained by Perry in terms of the mediation of the self-notion, which is what we refer to when we use the first person pronoun 'I'. The self-notion also ensures immunity to misidentification, given that this notion, while associated with the indexical 'I', can only serve as the repository for information about the agent himself. (This is reflected in the fact that when the agent uses 'I', he can only refer to himself.) Finally, the intermediary role of the self-notion, routing IC from self-informative

perception through self-effecting action often without the intercession of conscious, detachable knowledge, qualifies it as occupying a ''unique'' practical role in the life of the agent. Thus, Perry's IC-based, semantic conception of human cognition shapes his response to this problem, a response that allows him to build subjectivity into his PCS account of the self.

Conclusion

''What I had in mind by 'the human-theory' is basically 'folk-psychology,''' Perry tells us, ''the set of commonsense principles that we apply to explain and predict human behavior.'' This theory comprises a ''body of commonsense concepts and principles'' that, in his view, qualifies as ''an amazing intellectual accomplishment,''[52] and he has worked to develop a physicalist account of this theory. In this chapter, we have argued that his physicalist account is rooted in his information-based account of meaning, that is, that Perry situates semantics at the very heart of the human theory. Semantics explains the information content of our attitudes and utterances, our goal-driven practical activity, and our explanatory and predictive successes. As we have seen, Perry takes humans to be IC harnessing devices, and it is IC—a semantic concept—that makes possible our complex experience. We perceive, think, and act, engaging with the causal/informational structure of the world as three-tier physical systems, the operation of which is guided by procedural and propositional knowledge. The result, then, is a systematic account of human nature, one that combines sophisticated metaphysical and epistemological work in the service of common sense.

The following thirteen chapters address aspects of Perry's philosophical system, followed by his replies. Part I concerns general, background themes that are of central importance to the project. In chapter 2, Robert Audi discusses a Humean, instrumentalist account of reasons, noting that this is related to Perry's work both in being Humean and in being a contribution to a general theory of the self akin to the one Perry advocates. Chapters 3 and 4 both address identity. Patricia Blanchette begins by evaluating the prospects for the commonsense view of identity that Perry favors in the context of mathematics. Genoveva Marti follows with a discussion of the semantic implications of the Law of Identity, which is central to much of the metaphysical and semantic work that Perry has done over the past three decades.

Martí's discussion serves to segue into Part II, which focuses on semantic themes from Perry's system. This section opens with a chapter on content from François Recanati, who defends the value of relativized propositions as a theoretical tool to be used in grappling with problems of indexicality. This chapter combines an interest in content

with an interest in indexicals and, so, is similar to the chapter by Ludlow that follows it. In chapter 6, Peter Ludlow focuses his attention on temporal indexicals, arguing that Perry's theory cannot accommodate them and so fails to be general in scope. While sympathetic to the idea of multiple utterance contents, Ludlow advocates a Fregean, sense-based approach that, he argues, accommodates temporal indexicals. Chapter 7, by Cara Spencer, focuses primarily on indexicals. Spencer argues that there is no clear correlation between indexicals and the special kind of thought with which they are typically associated, implying that the Problem of the Essential Indexical is really not about indexicals at all. Chapters 8, 9, and 10 are primarily concerned with unarticulated constituents. In chapter 8, Herman Cappelen and Ernie Lepore argue that the ''unarticulated constituent position'' is inconsistent and that, *pace* Perry, the meaning of the articulated elements of the sentence determines truth conditions. In chapter 9, Taylor argues against the Crimmins/Perry approach to belief reports that depends on unarticulated constituents, urging him to return to ''the wisdom of his earlier days.'' Chapter 10 finds Stephen Neale presenting a detailed and comprehensive examination of unarticulated constituents in the context of concerns about location and location-dependent language. This chapter includes critical discussions of Recanati, Stanley, and Taylor, all in defense of Perry's view. The final chapters of this section are more general in scope. Chapter 11, by Kent Bach, is a sustained critique of themes that emerge in Perry 2001b, the most complete and comprehensive statement of his semantic theory.

Part III contains three chapters that examine various aspects of the application of Perry's semantic theory to issues that arise in the philosophy of mind. The first of these, by Eros Corazza, defends a modified version of Perry's view that we can have thought without representation. The final two chapters concern the view of consciousness developed in Perry 2001a. In chapter 13, Brian Loar presents a congenial account that aims to further clarify qualia by saying just what phenomenal concepts are and how they figure into our thinking about qualia. In his contribution, an extended critical discussion of the Loar/Perry view, Michael McKinsey argues that physicalism is not up to the task of explaining qualia, when all is said and done.

Part IV consists of a detailed, thematic response from John Perry, along with a comprehensive bibliography of his publications.

Notes

1. Perry 2002, p. 67.

2. This approach resonates with the view of John Locke, an important influence on Perry, according to whom one must first locate the *principium Individuationis* for a type of thing before locating the conditions that secure the identity of that thing across time. See Locke 1975, Bk. II, ch. 17.

3. Perry 2001a, pp. 26–29.

4. See Locke 1975 and Shoemaker 1963.

5. A classic example of this type of automatic behavior is found in D. M. Armstrong's essay, ''The Nature of Mind.'' See Armstrong 1997, p. 231.

6. Perry leaves it an open question whether having language-type representations of this sort requires having a language; if not, then that increases the number of second-tier occupants.

7. Cf. Dennett 1996, ch. 4, for a similar classification scheme.

8. Perry 2002, p. 185.

9. For an extended discussion of these issues see Barwise and Perry 1981 and Perry 1996. See also Neale 2002.

10. See Davidson 2001.

11. In addition to real situations, Barwise and Perry also recognize ''abstract'' situations in *Situations and Attitudes*. Unlike ''real'' situations, which are parts of aspects of reality, ''abstract'' situations are set-theoretical constructs out of uniformities across real situations (viz., objects, properties, locations, and truth-values). Abstract situations are used to classify real situations. Complicating matters, Barwise and Perry also introduced a subclass of abstract situations, called ''actual'' situations, to ''model'' real situations. So within the formal theory, it looks like situations are intrinsically composed of objects, properties, locations, and truth-values, rather than these being uniformities across situations. In later versions of the theory, all of this was abandoned, along with many other aspects of the formal theory. In later works that explicitly address situation theory, Perry follows Barwise's later work in taking situations to be primitive. He develops situation theory as a theory of the above mentioned ''supports'' relation between these primitive situations and states of affairs or ''infons'' (to be discussed below), roughly atomic propositions to the effect that a sequence of objects do or do not stand in a certain relation at a certain locations. See Israel and Perry 1990, 1991.

12. The notion first appears in Barwise and Perry 1983, pp. 97–99.

13. Ibid., p. 4.

14. The foundation of Dretske's theory of information *content* is Claude Shannon's (1948) theory of information *quantity*. Under Shannon's theory events in the world correlate with others to varying degrees and, as a result, carry differing amounts of information about them. The quantity of information that one event carries about another reflects the degree to which the former reduces uncertainty about the latter. An event carries n bits of information if it reduces the range of possibilities as to what is occurring with the second by a factor of 2^n. So, if there were initially four possibilities as to what was involved in the second event—for example, it could rain, sleet, hail or be clear in Palo Alto on Sunday, 22 August 2004—and new information showed that, in fact, the only possibilities are rain and sleet, the new information reduces the uncertainty by half (a factor of 2^1) and, therefore, carries 1 bit of information. If the new data show that rain is the only possibility, it reduces the uncertainty by a factor of $4 = 2^2$ and carries 2 bits of information.

See Shannon 1948. To go from information quantity to relatively specific information contents, one has to narrow the focus to event types that are perfectly correlated or, more likely, use perfect correlation as an idealization. Dretske 1981.

15. Perry 1990 and Israel and Perry 1990, 1991. Cf. Shannon 1948 and Dretske 1981.

16. Israel and Perry 1990, p. 18, note 2.

17. See Israel and Perry 1990, Israel and Perry 1991, and Perry 2002, ch. 9. It is instructive to compare the information/information content distinction to the distinction between ''natural'' and ''non-natural'' meaning in Grice 1957, as well as the knowledge/belief distinction from epistemology.

18. This is analogous to the fact linking an utterance of a time or weather report to a place that makes the place an *unarticulated constituent* of the content of the report. Relative to this circumstantial fact, Mollie is an unarticulated constituent of information carried by the content of the X ray—though the X ray is of her leg, no part of the X ray refers to her. For more about unarticulated constituents, see the discussion of semantic content, as well as the chapters by Cappelen and Lepore, Neale, and Taylor.

19. Indirect classification has an essential connection to meaning, but classification in general and meaning are closely related in the following way: without classification, we would not traffic in meaning, and without meaning, there would be no systematic classification. Whatever else we are, we are creatures who communicate, and whether you are on the sending end of a message or the receiving end, you engage in classification. Selecting the code and mode of a message requires that we classify our audience, the interpretation context, and our thoughts—failure on any of these fronts might result in miscommunication, or perhaps worse. On the flipside, classification is systematic when it proceeds in a regular and nomological fashion; when it involves events in the world, this typically requires that we respect the natural categories we find there. As we go, we build and maintain meaningful representations of the world we experience so as to control our interaction with it; after all, it is much easier to classify what we encounter efficiently and successfully when we have a key.

20. A word or two about the metaphysical status of propositions is warranted here. Perry employs concepts and propositions, among other technical devices, to classify representational states. These devices are abstract objects introduced to capture generalizations across states and events; for example, a proposition is an abstract object used ''to classify states and events by the requirements their truth (or some other form of success) impose on the rest of the world'' (Perry 2001b, pp. 20–21). As Perry understands these, they are not ''denizens of a Platonic 'third realm,'" but are objects that derive their reality from their role in our classificatory practices. As such, they are akin to latitudes and longitudes, or weights and lengths. Thus, the technical tools of the analytic philosopher interested in meaning, viz., concepts, propositions, etc., are introduced into Perry's theory as artifacts of our classificatory practices.

21. For a critical discussion of this utterance-based approach to semantics, as well as Perry's somewhat cavalier attitude toward the semantics/pragmatics distinction, see Bach's chapter in this volume.

22. Perry 2001b, p. 2.

23. Perry 2001a, p. 125.

24. Ibid.

25. One area of investigation that calls for further attention is the range of associated contents. Is the world a Leibnizian place, with each utterance a monad reflecting the rest of the world? Or is it more limited? And, if it is more limited, is the range of associated contents for a given utterance systematically constrained in some way? If so, what content framework can be identified?

26. For critical discussion of the role played by reflexive contents in Perry's theory, see Ludlow's chapter in this volume. It should be said, though, that Ludlow is sympathetic to the idea of multiple utterance contents.

27. Perry 2002, p. 179.

28. When Perry introduces pragmatic and architectural content in Perry 2002, p. 179, he does so in a way that suggests they are incremental. However, given that each IC can itself be complex, there is reason to think that one will encounter ICs that are reflexive in one part and either pragmatic or architectural (or both) in another. This suggests that we should expect to find ICs that are heterogeneous, i.e., reflexive and either pragmatic or architectural. (One might say that they are "lumpy" in a sense that is a bit more generic than the one introduced on p. 29, Perry 2001b.)

29. Another important type of content not in evidence here is *network content*, which is associated primarily with utterances of sentences involving proper names. In Perry's view, names are associated with *notions*, or ideas of individuals. The properties we associate with the referent of a name are stored in conjunction with these notions in memory, as a cognitive file. If we have a name associated with a notion, we can share IC with others by using this name. The result is what Perry calls a "notion-network," or an intersubjective network of notions all anchoring IC about the referent of a particular name. (See Perry 2001b, chs. 7 and 8.) These networks support the community-wide use of a name, underwriting a kind of information economy involving the transfer of IC about the *origin* of the network, i.e., what is taken to be the referent of the name. (Perry's discussion of "information games" is relevant here—see note 37 below.) Notion-networks are complicated things in their own right. They are typically associated with a single name and its referent, which is the origin of information; however, they could be associated with a single name and several different sources of information, creating what Perry (2001b) calls a "mess" (136). *Network content* is reflexive IC associated with an utterance of a sentence containing a proper name (or pronoun—see Perry 2001b, pp. 150–152) into which facts about the network have been loaded. For instance, an utterance U_1 of the sentence S_1, 'Jacob Horn does not exist' would have the network IC "that *the network that supports the use of the name 'Jacob Horn' in* [U_1] has no origin" (Perry 2001b, p. 149).

30. See Perry 2001b, ch. 2.

31. For more on total content, see Perry 2002, p. 232.

32. See pp. 172–173. See also Perry 1986 and Israel, Perry, and Tutiya 1993.

33. This approach is similar to the one Davidson (1984) defends.

34. Typically, a constituent of *P* will be articulated, which is to say that there will be some constituent element of *e* that has the propositional constituent as its semantic value. As we have noted, however, Perry argues that there are *unarticulated* constituents.

35. Perry 2001a, p. 153.

36. Perry 2002, p. 183.

37. Perry 2001a, pp. 135–139. See also Perry 2001b, 143–146, and Perry 2002, 224–228, for more on this and other information games.

38. For the full account of this distinction insofar as it is applied to action, see Israel, Perry, and Tutiya 1993. See also Perry 2002, ch. 9.

39. Israel and Perry 1991, p. 307.

40. Ibid., p. 301.

41. Dretske 1988, pp. 42–44.

42. Perry 2002, pp. 171–174.

43. Ibid., p. 191.

44. Ibid., pp. 189–191.

45. Ibid., pp. 197–202.

46. See Merleau-Ponty 1962. This work also resonates with certain aspects of Heidegger 1996.

47. Ibid., p. 149.

48. See Perry 2002, pp. 186–188, for a related discussion of pleasure and original intentionality.

49. Ibid., p. 191.

50. The antiphysicalist literature pressing this point is old and vast. For two recent flash points, see Nagel 1974 and Chalmers 1996.

51. For similar approaches, see Nemirow 1989 and Lewis 1990.

52. Perry 2002, p. 167.

References

Armstrong, D. M. 1997. "The Nature of Mind." In P. A. Morton (ed.), *A Historical Introduction to the Philosophy of Mind*. Peterborough, Ontario: Broadview Press.

Barwise, J., and J. Perry. 1980. "The Situation Underground." In J. Barwise and I. Sag (eds.), *Stanford Working Papers in Semantics*, vol. 1. Stanford, Calif.: Stanford Cognitive Science Group.

Barwise, J., and J. Perry. 1983. *Situations and Attitudes*. Cambridge, Mass.: MIT Press.

Chalmers, D. 1996. *The Conscious Mind*. New York: Oxford University Press.

Crimmins, M., and J. Perry. 1989. ''The Prince and the Phone Booth: Reporting Puzzling Beliefs.'' *Journal of Philosophy* 86: 685–711. Reprinted in Perry 1993.

Davidson, D. 1984. ''Truth and Meaning.'' In his *Inquiries into Truth and Interpretation*. Oxford: Clarendon Press.

———. 2001. ''On Saying That.'' In his *Inquiries into Truth and Interpretation*, 2nd ed. Oxford: Oxford University Press.

Dennett, D. 1996. *Kinds of Minds*. New York: Basic Books.

Dretske, F. 1981. *Knowledge and the Flow of Information*. Cambridge, Mass.: MIT Press.

———. 1988. *Explaining Behavior*. Cambridge, Mass.: MIT Press.

Fodor, J. 1980. ''Methodological Solipsism Considered as a Research Strategy in Cognitive Psychology.'' *Behavioral and Brain Sciences* 3: 63–72.

Grice, P. 1957. ''Meaning.'' *Philosophical Review* 66: 377–388.

Heidegger, M. 1996. *Being and Time*. Trans. J. Stambaugh. Albany: SUNY Press.

Israel, D., and John P. 1990. ''What Is Information?'' In P. Hanson (ed.), *Information, Language, and Cognition*. Vancouver: University of British Columbia Press.

———. 1991. ''Information and Architecture.'' In J. Barwise, J. M. Gawron, G. Plotkin, and S. Tutiya (eds.), *Situation Theory and Its Applications*, vol. 2. Stanford, Calif.: CSLI Publications.

Israel, D., J. Perry, and S. Tutiya. 1993. ''Executions, Motivations, and Accomplishments.'' *Philosophical Review* 102: 515–540.

Jackson, F. 1986. ''What Mary Didn't Know.'' *Journal of Philosophy* 83: 291–295.

Kripke, S. 1980. *Naming and Necessity*. Cambridge, Mass.: Harvard University Press.

Lewis, D. 1990. ''What Experience Teaches.'' In W. G. Lycan (ed.), *Mind and Cognition: A Reader*. Oxford: Blackwell.

Locke, J. 1975. *An Essay Concerning Human Understanding*, 4th ed. Oxford: Clarendon Press.

Merleau-Ponty, M. 1962. *Phenomenology of Perception*. Trans. C. Smith. New York: Humanities Press.

Nagel, T. 1974. ''What Is It Like to Be a Bat?'' *Philosophical Review* 83: 435–450.

Neale, S. 2002. *Facing Facts*. Oxford: Oxford University Press.

Nemirow, L. 1989. ''Physicalism and the Cognitive Role of Acquaintance.'' In W. G. Lycan (ed.), *Mind and Cognition: A Reader*. Oxford: Blackwell.

Perry, J. 1977. ''Frege on Demonstratives.'' *Philosophical Review* 86: 474–497. Reprinted in Perry 1993.

———. 1979. ''The Problem of the Essential Indexical.'' *Noûs* 13: 3–21. Reprinted in Perry 1993.

———. 1980. ''A Problem about Continued Belief.'' *Pacific Philosophical Quarterly* 61: 317–332. Reprinted in Perry 1993.

———. 1986. ''Circumstantial Attitudes and Benevolent Cognition.'' In J. Butterfield (ed.), *Language, Mind, and Logic*. Cambridge: Cambridge University Press. Reprinted in Perry 1993.

———. 1990. ''Individuals in Informational and Intentional Content.'' In E. Villanueva (ed.), *Information, Semantics, and Epistemology*. Cambridge: Blackwell. Reprinted in Perry 1993.

———. 1993. *The Problem of the Essential Indexical*. New York: Oxford University Press.

———. 1996. ''Evading the Slingshot.'' In A. Clark, J. Ezquerro, and J. Larrazabal (eds.), *Philosophy and Cognitive Science: Categories, Consciousness, and Reasoning*. Dordrecht: Kluwer Academic.

———. 2001a. *Knowledge, Possibility, and Consciousness*. Cambridge, Mass.: MIT Press.

———. 2001b. *Reference and Reflexivity*. Stanford, Calif.: CSLI Publications.

———. 2002. *Identity, Personal Identity, and the Self*. Indianapolis: Hackett.

———. 2004. ''Compatibilist Options.'' In J. Keim Campbell, M. O'Rourke, and D. Shier (eds.), *Freedom and Determinism: Topics in Contemporary Philosophy*, vol. 2. Cambridge, Mass.: MIT Press.

Shannon, C. 1948. ''The Mathematical Theory of Communication.'' *Bell System Technical Journal* 27: 379–423 and 623–656.

Shoemaker, S. 1963. *Self-Knowledge and Self-Identity*. Ithaca, N.Y.: Cornell University Press.