

Reference and Necessity: A Rand-Kripke Synthesis?

Roderick T. Long

Necessary Factual Truth

Gregory M. Browne

Lanham, Maryland: University Press of America, 2001

xxii + 379 pp., index

Back in the late 1960s, when Ayn Rand and Leonard Peikoff first published the articles that were to become *Introduction to Objectivist Epistemology*,¹ most philosophers in the English-speaking world held that all true propositions could be sorted into two classes: the “analytic” truths, which had the advantage of being necessary but the disadvantage of being uninformative and true only by convention, and the inversely circumstanced “synthetic” truths, which had the advantage of being informative about non-conventional reality, but the disadvantage of being contingent rather than necessary.² In endorsing the existence of truths both factual and necessary, Rand and Peikoff were thus blazing a trail radically at odds with the philosophical mainstream.³

Nowadays the existence of necessary factual truth is much more widely (though by no means universally) accepted by mainstream philosophers, largely as a result of the work of Saul Kripke and Hilary Putnam in the 1970s.⁴ While there are important differences between the Kripke-Putnam theory and the Rand-Peikoff theory, there are also striking similarities—including the fact that both theories base their case for necessary factual truth on a theory of reference that allows as-yet-unknown properties to count as part of a thing’s essence. As in other respects,⁵ so likewise with regard to the issues of necessity, reference, and truth, the gap between Objectivism and mainstream

philosophy has narrowed over the last thirty years.

The time seems ripe, then, for Gregory Browne's book *Necessary Factual Truth*, which might be described as an attempt to synthesize the chief insights of both the Rand-Peikoff and Kripke-Putnam theories on these matters. While Browne is not an Objectivist across the board,⁶ he writes that it was Peikoff's critique of the analytic-synthetic dichotomy that "originally persuaded" him of the main theses he defends; "my views on these matters," Browne (2001, 7) writes, "are closest to his [Peikoff's], although we differ on some points, and I carry my discussion into areas that he did not discuss." But the influence of Kripke and Putnam is pervasive as well, particularly in these latter "areas that [Peikoff] did not discuss."

Why the Dichotomy Ever Seemed Compelling

To set up the historical background to Browne's book, let's recall the considerations that motivated the pre-Rand-Peikoff, pre-Kripke-Putnam denial of necessary factual truth in the first place. Consider the following two sentences:

- a) All bachelors are unmarried.
- b) Water is composed of H₂O.

Both statements are certainly true; but the ways in which we *know* their truth seem to be radically different. We don't have to go out and do surveys of bachelors to find out how many of them are unmarried; we can, it seems, simply inspect the content of the concept "bachelor" and notice that being unmarried is built into it. But the chemical composition of water, by contrast, isn't something we can intuit through conceptual analysis; rather, this fact had to be discovered empirically, through observation and experiment.

Thus far the difference between (a) and (b) might be a merely epistemological one—a difference in how we come to know these truths rather than a difference in the nature of the truths themselves. But a metaphysical moral is easily drawn. Why are we able to know

the truth of (a) without doing any empirical investigation? Because a married bachelor is a *contradiction in terms*. The laws of logic rule out the existence of married bachelors; a married bachelor is *logically impossible*. Yet nothing analogous seems to hold in the case of (b). Water that is not composed of H_2O (call it deviant water) does not seem to involve a logical contradiction; for if it did, we could rule out the possibility of deviant water simply by doing some logic in our heads, rather than doing all that messy empirical work. Hence (b) cannot be a *necessary* truth, because if it were, then deviant water would be logically impossible, which it isn't. And so we reach the plausible conclusion that (a) is necessary while (b) is contingent.

The next step is to ask what grounds this difference in necessity between (a) and (b). And here it can seem plausible to answer: our linguistic conventions. We use the word "bachelor" in such a way that no married man could *count* as a bachelor; we are immunized against the possibility of coming across married bachelors because we are simply determined not to *call* any married man a bachelor. The necessity of (a) thus seems grounded in our linguistic conventions; it's not reality but our linguistic practice that makes (a) true. No matter *what* reality turns out to be like, the truth of (a) will be unaffected, because it's responsive to our *decisions* rather than the facts. By contrast, the reason we couldn't know *a priori* that water is composed of H_2O is that we had *not* adopted a rule forbidding us to count anything as water unless composed of H_2O . The truth of (b) thus derives not from our linguistic conventions but from the way the world really is, apart from our conventions. The natural conclusion is that (a) is necessary *because* our conventions make it so, while (b) is contingent because our conventions allow its truth or falsity to be determined by reality rather than by linguistic fiat. Generalizing this moral gives us the analytic-synthetic dichotomy: necessary truths are arbitrary, while factual truths are contingent.

How the Dichotomy Was Overturned

As most readers of this journal will know, the Rand-Peikoff response to the analytic-synthetic dichotomy was to argue that the

meaning of a concept is not exhausted by its associated definition, but includes all the properties of its referents, both known and unknown. Hence being composed of H_2O is as much part of the meaning of “water” as being unmarried is part of the meaning of “bachelor.” Thus there is no essential difference between (a) and (b); (a) is as factual as (b), and (b) is as necessary as (a).

The Kripke-Putnam response was similar, in that it too appealed to the idea that the meaning of a word includes unknown properties of its referents. To oversimplify the Kripke-Putnam story somewhat (and to elide some of the differences in detail between Kripke’s and Putnam’s versions): when we use a word like “water,” it is our intention to refer to whatever is of the same fundamental kind as the particular samples of water on which our usage is based. In other words: our use of the term “water” is causally responsive to a certain kind of stuff that is *actually* composed of H_2O , whether we know it or not. If someone were to introduce into our environment a new liquid that was superficially similar to water but was not composed of H_2O , then even if we couldn’t distinguish it from water—even if we didn’t yet know the chemical composition of water—the new stuff (traditionally called “XYZ” in the philosophical literature) still wouldn’t *be* water, because what we mean by “water” is: anything fundamentally similar in kind to the stuff we’ve traditionally been calling “water.” And this new chemical XYZ, whether we know it or not, is *not* fundamentally similar in kind to the stuff we’ve traditionally been calling “water,” and so is not what we mean by the term. Our linguistic conventions rule out deviant water just as much as they rule out married bachelors; *given* that by “water” we mean *this* stuff and anything of the same kind, it follows that nothing not of that kind could count as water. Hence (a) and (b) cannot differ in their necessity.

While some philosophers (e.g., Sidelle 1989) would conclude that *neither* (a) nor (b) is necessary (except by convention), the orthodox Kripke-Putnam conclusion was that *both* are; giving up the necessity of (a) seemed unthinkable, and so the arguments for modal parity were widely taken as elevating (b) to the status of necessity rather than as downgrading (b) to the status of contingency. Hence within

a few years of Rand's and Peikoff's then-heterodox 1966–67 articles, though independently of them, a position strikingly like theirs had become firmly entrenched in the philosophical mainstream.

The Asymmetry Problem

Yet the Kripke-Putnam solution did more to show that (b) is as necessary as (a) than it did to show that (a) is as factual as (b). Consider the following analogy: It's true by convention that such-and-such a move in chess counts as a checkmate; but it's not true by convention that Scott checkmated Chase on such-and-such a day; the criteria for checkmate are the product of stipulation, but the fact that Scott's move fulfilled those criteria is *not* the product of stipulation. The latter fact is rather the product of a *cooperation* between convention and the world. Likewise, convention *alone* does not produce the fact that water is composed of H₂O; the truth of (b) is the product of a cooperation between convention (our semantic intentions) and the non-conventional fact that the samples we originally dubbed "water" were in fact composed of H₂O. But (a) seems different; convention *alone* seems sufficient to render (a) true, and the contribution of the world is apparently nil. We may call this the Asymmetry Problem (my term, not Browne's).

The Asymmetry Problem has not seemed especially pressing for proponents of the Kripke-Putnam theory, who have generally been more interested in establishing the necessity of statements like (b) than in establishing the factuality of statements like (a). But it is certainly a problem for proponents of the Rand-Peikoff theory, who are interested in establishing both. And to the extent that the Asymmetry Problem suggests that (a) and (b) differ in the *ground* of their necessity and so are perhaps not both necessary *in quite the same sense*, the Kripke-Putnam theory is somewhat imperiled as well. Browne's synthesis of the Kripke-Putnam and Rand-Peikoff traditions may be viewed as, *inter alia*, an attempt to rescue both theories from the threat posed by the Asymmetry Problem.

Browne's Distinctions

Browne's case for the modal and factual parity of (a) and (b) depends on drawing a series of crucial distinctions, as follows:

o Extension *vs.* intension: The *extension* of a term is "the *intended reference*—i.e., whatever is a referent or would be a referent, if it existed" (Browne 2001, 52). The *intension* of a term, by contrast, is "the *set of attributes of the intended referent(s)*" (52)—or in the case of a class "all of the attributes *common* to the referents" (53). So the extension of the term "cat" will be all actual and possible cats, while its intension will be all the attributes shared in common by all actual and possible cats.⁷

The distinction between *extension* and *intension* (not to be confused with *intention*) is a standard piece of philosophical jargon, but Browne's usage departs from the orthodox usage, which identifies intensions not with the attributes actually possessed by the referents but with (something like) the attributes the referent is *taken* to have by the user(s) of the term—thus corresponding to what Frege (1892) would call the term's *sense*. This would allow terms with the same extension to have different intensions. On standard usage, e.g., the terms "water" and "H₂O," while sharing the same extension, have different intensions, since someone innocent of chemical knowledge could know there's water in the well without knowing there's H₂O in the well. For Browne, by contrast, the terms will have the same intension, since water and H₂O in fact share all the same properties whether anybody knows this or not. Browne's case for this departure from standard philosophical usage is that "extensions are in extra-mental and extra-linguistic reality . . . and hence so should intensions be" (53). But there are reasons for the standard usage, and Browne's departure from it causes some problems for his theory, as we'll see.

o Narrow Classes *vs.* Wide Classes: The boundaries of a Narrow Class are determined by its extension; the boundaries of a Wide Class are determined by its intension. In other words, we specify a Narrow Class simply by picking out a number of referents; if there are three books on my desk I can simply designate class *P* as the class containing those three books, and I thereby know all there is to know about

the membership of that class. By contrast, if I specify class Q as the class of all paperback books that have a portrait of François Guizot on the cover, this Wide Class is open-ended, including actual books of which I'm unaware and also many merely possible books. Class Q could have had different actual members from those it in fact has; but class P could not, since class P is specified in terms of its *actual* membership—while class Q is instead specified in terms of its *criteria* for membership, and the definition leaves it an open question which existents, if any, satisfy the criteria. As Browne puts it, Wide Classes differ from Narrow Classes in having members in “other possible worlds”—though he stresses that this locution is to be taken metaphorically.

The principle that terms for Wide Classes cover not only actual but also merely possible members is necessary to make sense of real-life linguistic usage. When Heron of Alexandria first came up with the idea of the steam engine, before he'd yet built it, “steam engine” was a meaningful concept, despite lacking any actually existing referents; and if Heron had never built the engine whose possibility he'd grasped, and if no one in all subsequent history had done so either, the concept would still have been meaningful. As Browne notes: “when people say ‘All dogs have four-chambered hearts’ they mean to make a statement, not about all dogs in the actual world . . . past, present, and future, but about all possible dogs: i.e., they mean to say that if anything is *or were* a dog, it has *or would have* a four-chambered heart” (180; emphasis added).

Wide Classes are also called *Kinds*, and are in turn divided as follows:

- o Shallow Kinds *vs.* Deep Kinds: A Shallow Kind's properties are all contained in or reducible to the properties mentioned in its definition; a Deep Kind's are not. Class Q is a Shallow Kind while *water* is a deep kind. While “the membership of Narrow Classes is specified by listing the members” and “that of Shallow Kinds is specified by giving a list of the essential attributes, and including in the kind all and only beings that have the essential attributes,” in the case of Deep Kinds the membership is specified “by considering the members of a paradigm set of members, and then taking all of the

non-disjunctive qualities common to their essences as the essence and intension of the kind, and including in the kind all and only beings that have the essential attributes” (178). (By “essence” Browne means the set of *necessary* properties—a usage different from Rand’s and from the Aristotelean tradition’s generally,⁸ but quite common among contemporary philosophers.)

Narrow Classes: Membership determined by list of referents (extension)	Wide Classes (Kinds): membership determined by attributes of referents (intension)	
	Shallow Kinds: membership determined solely by attributes listed in definition	Deep Kinds: membership not defined solely by attributes listed in definition

Figure 1

Browne suspects that “most terms from psychology, the social sciences, ethics and the other parts of value theory, are terms for Shallow Kinds” (170)—a position he arguably shares with Friedrich Hayek (*cf.* Hayek 1948; Long 2005). But the natural sciences are mostly (as we’ll see, not entirely) the domain of Deep Kinds—and it is in his account of Deep Kinds that Browne is closest to the Rand-Peikoff view, since for Rand (1990, 66) “a concept is an ‘open-end’ classification which includes the yet-to-be-discovered characteristics of a given group of existents.” (For example, anything that satisfies our initial definitions of *belief* and *desire* will count as a belief or a desire, even if realized in extraterrestrial brains of alien composition, but nothing with a different chemical composition from water will count as water even if it satisfies our initial definition of *water*.) What Browne has arguably shown, however, is that not *all* concepts must be Deep Kinds; there is nothing inherently illegitimate about formulating Shallow-Kind or even Narrow-Class concepts.

Browne’s distinction has important implications for Objectivist theory. Eric Mack has recently argued (rightly, I think) that certain

Randian ethical and metaethical arguments characteristically elide the distinction between causal and conceptual claims. Mack (2003, 22–23) notes that his causal/conceptual distinction might be thought to rely on “the discredited distinction between analytic and synthetic propositions,” and attempts to deflect the charge by appealing to a “web of belief” in which all beliefs are responsive to empirical testing yet to varying degrees. While I am sympathetic to this sort of position (Long 2000; 2003), appeal to it is not necessary to make Mack’s case; Browne’s distinction between Shallow Kinds and Deep Kinds—a distinction that will be much harder for Objectivists to resist than Mack’s web of beliefs—is all that is needed to ground the causal/conceptual distinction as Mack employs it.

Deep-Kind Membership as Necessary

Browne’s definition of Deep Kinds allows him to treat as-yet-unknown qualities as criterial for kind membership. Going back to Putnam’s H₂O/XYZ example: when the concept “water” was originally formed, the properties distinguishing water from XYZ were not yet known, and so if *water* had been a Shallow Kind, referring to whatever possesses the properties listed in the definition, XYZ would have counted as water, since it shares all the properties water was originally known to possess. But really the concept “water” was formed by taking actual samples of water as a paradigm exemplar and specifying the referent of “water” as anything of the same sort as *those*; since those samples were *in fact* composed of H₂O, XYZ fails the test, even if this failure could not have been detected at the time. Hence nothing could count as water unless it were composed of H₂O—which is to say that water is *necessarily* composed of H₂O. Statement (b), generally admitted to be factual, turns out to be necessary as well.

Browne’s case for the necessity of (b) closely follows the Kripke-Putnam argument.⁹ But Browne (2001, 191–92) differs from Kripke-Putnam, and arguably from Rand-Peikoff as well, in thinking that in specifying Deep Kinds our semantic intentions mean to pick out *all* the common properties of the paradigm exemplar and not just the

explanatorily fundamental ones. I cannot regard this innovation as a happy one. It is one thing to say that a concept refers to all the properties common to the members of a class, and quite another to say that class membership is determined by all the properties common to the initial paradigm sample. Presumably when the word “water” was first coined, all the samples of water that formed the paradigm shared the property of being located in the same general geographical area as the linguistic community of the coiner(s); Browne’s account would seem to entail that nothing could then count as water unless it too were located in that same region—which is certainly *not* what we actually mean by “water.”

In her epistemology workshop, Rand (1990, 235) was once asked:

Suppose one person has seen millions of glasses in his life, but only those of one particular type. A second person has seen only a few dozen glasses, but of a wide variety of different types. The question is: who would know more of the meaning of the concept “glass”? Even though the first man has seen many more *referents* of the concept “glass,” it seems that the second man, who has seen fewer of the referents, knows more of the *meaning*.

Rand’s response was: “When you ask, ‘Who knows better the meaning of the concept?’—the answer is: both equally, because the concept doesn’t include the non-essential variations.” That seems like just the right answer; but on Browne’s theory we’d have to say that the two men have *different concepts*, and that by “glass” the first man can only mean glass of that type.

Browne (2001, 37–39) is likewise too quick, I think, to reject the Wittgensteinian notion of “family resemblance” concepts; there is good reason to suppose that people often have the semantic intention to specify a class in terms neither of *all* nor of the most *fundamental* properties of the paradigm exemplar(s), but rather in terms of *overall* similarity to the paradigm or prototype. Consider the concept “bachelor”; while this might seem to be the clearest case imaginable of a precise and well-defined term, nevertheless competent speakers

of English notoriously feel uncertain when asked whether the Pope is a bachelor. Of course he must be, if *bachelor* is a Shallow Kind definable as *unmarried adult male human*; but the uncertainty makes perfect sense if *bachelor* is instead defined rather by degree of resemblance to a paradigm case or cases. (It's hard to say whether such family-resemblance kinds are more similar to Deep or to Shallow Kinds.)

Shallow-Kind Membership as Factual

Browne's brief for the necessity of Deep-Kind membership, while generally compelling, breaks little new ground; it is largely an adaptation of Kripke-Putnam. His case for the factuality of Shallow-Kind membership—his response to the Asymmetry Problem—is more original.¹⁰

Recall the Asymmetry Problem: even if (a) and (b) are equally necessary, it's tempting to think that they differ in the following way: *convention alone* is sufficient to make it the case that no married man counts as a bachelor (just as convention alone determines what counts as checkmate), whereas convention needs the cooperation of the world to make it the case that nothing chemically distinct from H₂O counts as water (just as Scott's checkmating Chase is not *merely* a matter of convention).

Browne's solution is to distinguish between a role convention must be granted—that of determining the reference of terms like “bachelor”—and a role it must be denied—that of determining the truth or falsity of sentences containing the term. In the case of Shallow Kinds, “our choice of what attributes to put into our concept, definition, intension, and essence is arbitrary or pragmatic”; but once that choice *is* made, then “the reference is determined, and so the choice of what to consider a referent is either correct or incorrect” (287–88). It's a matter of convention that “bachelor” refers to unmarried adult male humans; but it's not a matter of convention that *so long as* “bachelor” refers to unmarried adult male humans, the sentence “all bachelors are unmarried” is true. In the case of any conditional of the form *If p then q*, even when *p* is “true by

convention” it does not follow that either q or *If p then q* is so as well; “the fact that a given antecedent is contingent, false, or arbitrary does not entail” that either the consequent or the whole conditional is contingent, false, or arbitrary (58).

How far does this solution go in defusing the worries that drive the Asymmetry Problem? Arguably it’s a mixed success. *On the assumption* that determining the meaning of “bachelor” is *distinct* from and *prior* to determining the truth-value of “all bachelors are unmarried,” it’s plausible enough to conclude that convention does the first job and the world does the second; but Browne says little to allay the not unreasonable worry that there might turn out to be simply *nothing* to determining the meaning of the term “bachelor” over and above determining the rules for the term’s correct usage—in which case there would not be two distinct jobs but only one, and so, it can easily seem, nothing left after all for the world to contribute over and above the role of convention. Dealing with this worry would require adjudicating the venerable dispute over the relation between concepts and language use; while this latter task is admittedly beyond the scope of Browne’s project in this book, I doubt that any satisfactory resolution of the problems Browne discusses can be achieved without eventually tackling it.

Browne does a better job of answering a different (though related) worry. If a statement like “Bachelors are unmarried adult male humans” states an extralinguistic fact, what fact does it state? Does it state a *different* fact from the fact stated by the “Unmarried adult male humans are unmarried adult male humans”? It seems not, at least if the fact must be a fact about the *world*. Yet the two sentences do not appear to be synonymous; one is *informative* in a way the other is not. One can easily imagine not knowing, and having to be told, that bachelors are unmarried adult male humans; it is much harder to imagine not knowing or having to be told that unmarried adult male humans are unmarried adult male humans. A plausible moral to draw is that the function of a statement like “Bachelors are unmarried adult male humans” is not to describe the world, but either to describe or to prescribe language use.

To meet this sort of worry, Browne proposes that we “distinguish

between (1) definitions as the assignments of meanings and reference to terms, and (2) definitions as expressions . . . by which we express these assignments” (296). In effect, one and the same linguistic utterance, “Bachelors are unmarried adult male humans,” can serve either the meaning-giving or the world-describing function according to context (and thus differs from “unmarried adult male humans are unmarried adult male humans,” which serves the world-describing function only). Because “definitional truths are so obvious that people seldom state them, except to those who do not know the meaning of the words” (278), the meaning-giving function is the most common, thus fostering the illusion that it is the only function.

“Bachelors are unmarried, adult, male humans” may be an answer to the external question “What does ‘bachelor’ refer to?” rather than an answer to the internal question “What are bachelors?,” and is probably an answer to an external question more often than not, but this does not mean that the question can never be an answer to the internal question. (278)

Qua assigning a meaning to the word “bachelor” the definition is nonfactual because it is not declarative, and so not susceptible of truth or falsity; *qua* using the assigned meaning to state what bachelors are, the definition is true, but also factual. There is thus no sense in which the statement is *both* true and nonfactual. (Moreover, the sense in which it is factual is also a sense in which it is necessary.)

Brownean Motion

Browne ends his book with an attempt to argue that Newton’s laws of motion are necessary truths. Now the claim that Newton’s laws, *if true at all*, are necessarily true would be accepted by all proponents of the Rand-Peikoff approach and many proponents of the Kripke-Putnam approach, but Browne’s *reasoning* in defense of the claim is fairly idiosyncratic: like Kant in the *Metaphysical Foundations of Natural Science*, Browne attempts to prove Newton’s laws *a priori*.

More precisely, Browne tries to show that concepts like *body*, *force*, and *mass* are Shallow Kinds from whose stipulative definitions Newton's laws logically follow. This is the most original section of the book—but also, I think, the weakest.

Without spending time explaining the precise details of his argumentation, I'll grant that Browne succeeds in showing that there is *a* way to read Newton's laws such that they turn out to be tautologies; but is it a defensible reading? Anticipating the charge that the definitions he gives to concepts like *body* and *force* depart from standard usage, Browne insists that he is "adhering to the actual usage of the word 'body' in ordinary language," since, e.g., most people "would not . . . call anything a body which lacked" such qualities as extension, inertia, impenetrability, and the like.

But as I read his arguments, Browne tends to shift equivocally between broad and narrow senses of the relevant terms. For example, there is plausibly a broad sense of "inertia" that is indeed part of the stipulative meaning of "body"; but this broad meaning does not obviously assume that inertial resistance is constant rather than variable. For his derivation of Newton's laws, however, Browne requires a narrower conception of inertia involving constant resistance. Likewise, Browne maintains that impenetrability belongs to bodies by definition, on the grounds that if some object were found to pass through other objects in a ghostly manner, we would not call it a body. I think Browne is quite right that an object that passed through *any and all* other objects wouldn't be called a body; but suppose we found two objects that passed through *each other* in this ghostly manner but were perfectly solid and impenetrable in their contacts *with all other objects*. Surely we would call such objects "bodies"; and we can hardly legislate *a priori* that such objects are impossible without making the mistake, rightly condemned by Rand (1990, 293), of "prescribing conditions of what something not known to you now has to be."

Here too Browne needs a narrow sense of impenetrability—impenetrability to *all* bodies—to establish Newton's laws as definitional truths, but it is only a broader sense—impenetrability to *most* bodies—that ordinary language entitles him to attribute to bodies *per*

se. I'm not at all unsympathetic to the possibility that ordinary language might supply us with semantic constraints that any proposed laws of physics must satisfy in order to be intelligible,¹¹ but I don't think Browne has found them.

Although Browne does believe (wrongly, I've been arguing) that his definitions of "body," etc., are consistent with the ordinary meanings of those terms, he insists that even if they should prove not to be so, this is "not a very important issue," because in any case he has at least demonstrated that Newton's laws necessarily apply to anything that *is* extended, inert, impenetrable, etc., as he defines those properties, whether or not any such entities exist (367).¹²

Reference and Revolution

If Browne's way of arguing for the necessity of Newton's laws is a compliment to Newton, it's one that Newton would not welcome; Newton took himself to be discovering new truths about familiar entities people already knew about and were referring to. The same applies to Einstein: Browne tells us that because Newton's laws were about absolute time, while Einstein's laws were about relative time, Einstein did not refute any of Newton's laws, since a law that is "about velocities in absolute time" is "unrefuted by any discovery about relative time" (370). But Einstein certainly thought he was establishing something new about *time*—that he was discussing, and disagreeing with Newton about, the *very same aspect of reality* that Newton (1964, 17) described in 1687 as "absolute, true, and mathematical Time, of itself, and from its own nature flow[ing] equably without regard to anything external."

Browne has basically taken over the theory defended by the logical positivists, and later in somewhat different form by Kuhn (1996), to the effect that Einstein's departure from Newton consisted in *changing the meanings of the terms*—and, more broadly, that there is no continuity in reference across scientific revolutions. Indeed, Browne (2001, 329) claims that if we revise our views about *any* of a thing's properties "we are no longer talking about the same *subject*."

Ironically, one of the chief selling-points of the Kripke-Putnam

theory of reference was precisely that it allows one to *avoid* this sort of result. For Kripke-Putnam, the reference of scientific terms is determined (in most cases) not by stipulative definition but by similarity to an exemplar; in short, such terms generally pick out Deep Kinds, not Shallow Kinds. Moreover, the similarity in question need cover only *fundamental* properties, not *all* properties. Hence Newton and Einstein were both talking about the same thing, *time*, even though they attributed different properties to it, because they were responding to, and intended their linguistic usage to track, the same phenomenon. This was precisely the weapon that proponents of the Kripke-Putnam theory of reference have traditionally used to defend scientific realism and fend off the antirealist views of positivists and Kuhnians; Browne preserves the general approach of Kripke-Putnam, but puzzlingly abandons one of its most important and valuable implications.

Browne's departure from Kripke-Putnam is also a departure from Rand-Peikoff. Rand (1990, 296) argues that a) when the law *water boils at 100° C* is formulated, it is formulated as a statement of water's *essence*—and yet b) when that law is revised to *water boils at 100° C at certain altitudes and not others*, the meaning and referent of “water” do not change. In this respect Browne's theory seems less successful than both the predecessors on which he is trying to build.

What Browne's theory needs is a way of making sense of continuity of *extension* across change in *intension*, which in turn would require a sense/reference distinction of the classical Fregean sort. For Browne, as we've seen, the intension of a term is identified with the *actual* properties of its intended referents; what is needed, however, is the sort of intension that is identified with the *intended* properties of its intended referents. This would allow Newton and Einstein to be referring to the same phenomena (extension) while simultaneously attributing different properties to those phenomena (intension). The orthodox way of distinguishing intension from extension that prevails in academic philosophy allows this; Browne's version does not. Accordingly, Browne owes his readers a fuller defense of his departure from orthodoxy than his brief invocation of symmetry¹³ can supply.

Browne (2001) would also do well to reconsider his rejection of the “network” and “family resemblance” theories of meaning (37–39, 326) in the case of scientific terms. Like the Kripke-Putnam theory (and, I think, compatibly with it), such theories allow continuity of reference across scientific revolutions because the meaning of, e.g., “time” is determined by *overall* continuity of intension rather than by *total* continuity of intension. In other words, time is whatever turns out to satisfy *most*, but not necessarily *all*, of the properties we initially took to be definitive of time.

Style and Substance

While I have been critical of many of Browne’s arguments, his book is certainly a valuable contribution to the debate over reference and necessity, and his central contentions are, in the main, sound and attractive. Browne’s contribution is particularly to be welcomed as a bridge between the Objectivist and mainstream analytic approaches to these issues.

Unfortunately, issues of substance aside, *Necessary Factual Truth* has many defects of presentation that weaken its potential impact. The writing style, while admirably clear, is dry and “scholastic” in the extreme, even by the standards of academic philosophy; it is also extremely repetitive, with several passages repeated literally word for word (see, e.g., pages 278 and 300). In short, the book makes for slow and laborious reading; the manuscript began life as a doctoral dissertation, and it shows. Other flaws include an especially inadequate index and a number of printing errors; there is at least one entire line of text lost between *every page* of the following sequences: pages 124–30, pages 320–21, and pages 329–30.

I suspect that Kripke and Putnam succeeded in winning so many converts not just because they had the best arguments (though they did) but because they presented them so engagingly; it is to be feared that, thanks to its aridity and density, *Necessary Factual Truth* will win fewer readers than it deserves.

Notes

1. Rand 1990, Peikoff 1990; first published as a series of articles in *The Objectivist* (July 1966–February 1967, May–September 1967).

2. This is not the only way of drawing the distinction between analytic and synthetic truths (Kant’s version of the distinction, for example, allows some synthetic truths to be necessary), but it is the one most relevant for present purposes.

3. Quine (1951) had already ventured an influential dissent, but from a radically different angle; rather than defending the existence of necessary factual truth, Quine had in effect denied that any truths were necessary, even the laws of logic. From an Objectivist standpoint Quine’s approach is arguably even *less* defensible than the analytic-synthetic dichotomy it is meant to supplant.

4. See especially Kripke 1980 and Putnam 1975. Other contributors to the development of the “Kripke-Putnam” theory include Marcus 1961 and Donnellan 1977.

5. These respects include: the increased popularity of “middle ways” between dualism and materialism in philosophy of mind; the vigorous revival of Aristotelianism in ethics; and the (grudging) acknowledgment of libertarianism as a legitimate contender in political philosophy.

6. Aspects of Browne’s book that seem in tension with Objectivist principles include an attempt to derive Newton’s laws of motion *a priori* (Browne 2001, 333–79), a definition of causality that seems to entail determinism (152), and an apparent sympathy for theism and soul-body dualism (*passim*).

7. Browne regards attributes as particulars (“tropes”), not universals (2001, 65). Hence talk of referents sharing common attributes is short for talk of referents possessing numerically distinct but exactly similar tropes. For example, if my left eye and my right eye are exactly the same shade of blue, that means not that there’s some universal blueness straddling the gap between my eyes, existing in both places at the same time, but rather that while each eye has its own individualized blueness-trope, the two blueness-tropes are exactly alike. I have argued elsewhere (2002, 406–7) that something like this is the position to which Rand is likewise committed.

8. On the distinction between *quidditative* and *modal* conceptions of essence, see Long 2001, 421–22.

9. Although Browne’s account of the nature of Deep Kinds is as close to the Rand-Peikoff view as to the Kripke-Putnam view, his account of the *necessity* of Deep Kinds is closer to the Kripke-Putnam view. For both Browne and Kripke-Putnam, the necessity of (b) is closely connected with the fact that nothing *counts* as water unless it satisfies the criteria laid down, directly or indirectly, by our semantic intentions. (This is precisely what leads Sidelle (1989) to regard the necessity as conventional in origin.) For the Rand-Peikoff view, by contrast, *all* facts not open to human free choice are necessary for metaphysical reasons having nothing to do with anybody’s semantic intentions.

10. Though he does rely here, perhaps surprisingly, on the work of logical positivist theorist Rudolf Carnap (particularly Carnap’s distinction between questions internal and questions external to a framework).

11. Cf. Strawson 1990, 4: “It is possible to describe types of experience very different from the experience we actually have. But not any purported and

grammatically permissible description of a possible kind of experience would be a truly intelligible description. There are limits to what we can conceive of, or make intelligible to ourselves, as a possible general structure of experience.” Strawson is expounding the Kantian position, but Rand takes a similar position. See Rand 1990, 292–95.

12. This claim is reminiscent of the claim of Austrian economists that although the laws governing money, interest, etc. are demonstrable *a priori*, determining when and where such categories as money and interest are actually instantiated is an empirical matter. An important difference, however, is that for Austrians the *actual* instantiation of the basic category of action—and along with it the live *possibility* of instantiating more complex categories—is itself an axiomatic truth. See Long 2004. Browne makes no analogous claim for his stipulatively defined physical concepts.

13. In introducing the intension/extension distinction, Browne (2001, 52–53) warns us: “we should note that ‘intension’ is most often used to refer to the list of predicates, or other linguistic entity, corresponding to the set, or to the mental entity corresponding to the set. This seems to me to be a bad policy, because the concepts of extensions and intensions are supposed to be parallel, and extensions are in extramental and extra-linguistic reality . . . and hence so should intensions be.” But the point of the intension/extension distinction is precisely to explain such things as how people can refer to the same feature of extramental reality while disagreeing about its attributes; the lack of parallelism is there for a reason. Browne’s suggestion that “people who use ‘intensions’ to refer to something linguistic or mental” should simply “translate” Browne’s intension-talk into their own intension-talk (53) ignores the fact that such translation is in principle impossible, because the relation of intension to extension is many-one on the orthodox account and one-one on Browne’s.

References

- Browne, Gregory M. 2001. *Necessary Factual Truth*. Lanham, Maryland: University Press of America.
- Donnellan, Keith. 1977. Reference and definite descriptions. In Schwartz 1977, 42–65.
- Frege, Gottlob. 1892. On sense and reference. In Geach and Black 1952, 56–78.
- Geach, Peter, and Max Black, eds. 1952. *Translations from the Philosophical Writings of Gottlob Frege*. Oxford: Blackwell.
- Hayek, Friedrich A. 1948. The facts of the social sciences. In *Individualism and Economic Order*. Chicago: University of Chicago Press, 57–76.
- Kripke, Saul A. 1980. *Naming and Necessity*. Cambridge, Massachusetts: Harvard University Press.
- Kuhn, Thomas S. 1996. *The Structure of Scientific Revolutions*. 3rd edition. Chicago: University of Chicago Press.
- Long, Roderick T. 2000. *Reason and Value: Aristotle versus Rand*. Poughkeepsie, New York: The Objectivist Center.
- _____. 2001. The benefits and hazards of dialectical libertarianism. *The Journal of Ayn Rand Studies* 2, no. 2 (Spring): 395–448.
- _____. 2002. Keeping context in context: The limits of dialectics. *The Journal of Ayn Rand Studies* 3, no. 2 (Spring): 401–22.

- _____. 2003. Review of Leland Yeager's book *Ethics as Social Science: The Moral Philosophy of Social Cooperation*. *Quarterly Journal of Austrian Economics* 6, no. 1 (Spring): 89–98. Online: <http://www.mises.org/journals/qjae/pdf/qjae6_1_7.pdf>.
- _____. 2005. *Wittgenstein, Austrian Economics, and the Logic of Action*. London: Routledge.
- Mack, Eric. 2003. Problematic arguments in Randian ethics. *The Journal of Ayn Rand Studies* 5, no. 1 (Fall): 1–66.
- Marcus, Ruth Barcan. 1961. Modalities and intensional languages. *Synthese* 13: 303–22.
- Newton, Isaac. 1994. *The Mathematical Principles of Natural Philosophy*. New York: Citadel Press.
- Peikoff, Leonard. 1990. The analytic-synthetic dichotomy. In Rand 1990, 88–121.
- Putnam, Hilary. 1975. *Philosophical Papers, Volume 2: Mind, Language and Reality*. Cambridge: Cambridge University Press.
- Quine, Willard van Orman. 1951. Two dogmas of empiricism. *Philosophical Review* 60: 20–43.
- Rand, Ayn. 1990. *Introduction to Objectivist Epistemology*. Expanded 2nd edition. Edited by Harry Binswanger and Leonard Peikoff. New York: Meridian.
- Schwartz, Stephen P., ed. 1977. *Naming, Necessity, and Natural Kinds*. Ithaca: Cornell.
- Sidelle, Alan. 1989. *Necessity, Essence, and Individuation: A Defense of Conventionalism*. Ithaca: Cornell University Press.
- Strawson, P. F. 1990. *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason*. London: Routledge.