

Quine's Revolution: Epistemological Holism in Science and Philosophy

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To be is to be the value of a bound variable.

—W. V. Quine

“On What There Is”: Quine’s Ontological Relativity. Willard Van Orman Quine (1908–2000) is considered by many in the philosophy trade to be the most important American philosopher of the 20th century. His Ontological Relativity (indeterminacy of reference, indeterminacy of translation) is the thesis that ontology — “what there is” — is relative to language, that is, to the subjective deep background reality assumptions in our individual and collective “web of belief” as it arises and is instantiated in language. (Epistemology is how we *know* what there is. There are no objective facts, only linguistic meanings.) In his seminal “Ontological Relativity” (1969) Quine develops his thesis that when a theory postulates its existent entities in a given language—its “object language”—it does so by translating its theory’s propositions (statements) about those entities into a more inclusive “meta-language,” *langue* (Saussure), or background matrix or web of prior assumptions and beliefs. The ontological status of entities or objects of the object language are relative to and supervene or are dependent upon the intersubjective prior cognitive “coordinate grid” that are the assumptions and beliefs of the meta-language into which they are translated. Unfortunately, through ontology is minimized, Quine’s personal ontological flavor is Physicalism. It’s all just physical, which explains his epistemology, namely empiricism and naturalism. Quine was never able to shake the imperious physicalist doctrine of his early teacher Rudolf Carnap and the Vienna Circle of the Logical Positivists. As to Quine’s naturalism, he believed that it is the task of science, not logic or philosophy, to determine ontology (that there is), and epistemology (how we know what there is), which explains his physicalist ontology, namely Scientific Materialism, very much the prevailing orthodoxy at mid-century. Quine’s Realism is Scientific Realism regarding ostensibly physical objects, and Platonic regarding logical sets. So Quine naturalizes both ontology and epistemology. And this naturalistic philosophy admits of no logocentric foundational first philosophy, no Realism, no Idealism.

On the irrelevance of logic to ontology:

What makes ontological questions meaningless when taken absolutely is not universality but circularity. A question of the form ‘What is an F’ can be answered only by recourse to a further term: “An F is a G.” The answer makes only relative sense: sense relative to the uncritical acceptance of ‘G’” (Quine, *Ontological Relativity* 1969)

Thus the ontological status of phenomenal reality is relative to something prior. Ontology is relative to our conventional cultural and scientific concept and belief systems. It makes no sense to inquire about the absolute reality of an object, or the absolute meaning of a statement. Therefore, a proposition cannot be empirically tested and shown to be true or false without referring to intersubjective prior deep background assumptions and beliefs in the basal meta-

language matrix.

This raises the problem of “auxiliary hypotheses.” For example, the hypothesis “All copper conducts electricity” is neither verifiable nor falsifiable in isolation. We need auxiliary hypotheses from our basis of prior assumptions and beliefs regarding electrical conductance, conductance meters, copper wire, the atomic number of copper, etc. Therefore, no hypothesis is testable in isolation from the whole, namely, related hypotheses and theories, *i.e.* prior causes and conditions.

On what there is not: Quine’s holistic assault on objectivity. In Quine’s “Two Dogmas of Empiricism” — the most celebrated philosophical essay of the 20th century — he develops his radical nominalism (abstract terms do not entail real existents) and epistemological holism (“confirmation holism” that is also a semantic holism). *The two basic* precepts of Quine’s holism are 1) interpretation of an empirical observation is “theory laden” or theory dependent, that is, it is dependent upon prior assumptions, theories or beliefs, and 2) all theory is “underdetermined” by its evidential data, that is, empirical evidence in isolation is not an adequate criterion of decidability as to theory vindication, verification, or truth. Since the primary metaphysical assumption — the ontology — of science is foundational Scientific Realism which holds that scientific knowledge consists of an ontic commitment to materially and physically real *theory-independent* phenomena, and also that only empirical evidence is suitable to adjudicate theory validity, Quine’s radical naturalistic “extreme nominalist,” intersubjective epistemological holism undermines both common sense/naïve Realism and its intellectual kin, Scientific Realism. Quine denies the metaphysical assumption that a predicate (red) entails the actual existence of a related material object (house).

We can use general terms, for example predicates, without conceding them to be names of abstract entities. I have argued further that we can view utterances as significant, and as synonymous or heteronymous with one another, without countenancing a realm of entities called meanings.

Thus, the arising, appearing entities of our conceptually reified reality are non-objective. Meaning is indeterminate and non-reducible. Statements true by definition (analytic) and statements true by experience (synthetic) cannot be usefully and truthfully separated. Meaning is behavioral and public. Meaning is holistic and experience cannot adjudicate between competing theories and paradigms. *Meaning is ontologically relative.* Ontology is relative and pragmatic. We find meaning adverbially, in our own cultural background web of belief. And it is only here — in the context of the whole information matrix — that our theories confront the vast crucible of experienced reality in the context of the whole information matrix that is our individual and collective cultural web of belief.

This radical holism regarding theory testability and verification is, on Quine’s account, a holism of meaning. Therefore, in place of the scientific reductionism (meaningful statements are reducible to observation statements) of the Logical Positivists, Quine asserts that ultimately it is the whole of science, not mere propositions, that verify our theories and our paradigms. Scientific propositions or statements are a web of interconnected, interdependent statements that ultimately constitute “total science,” the “field of force” that is the whole of science, if not

the whole of Reality Itself. Says Quine, “the unit of measure of empirical meaning is all science in its globality.” The Logical Positivists, fearing metaphysical statements, reduced meaning to mere immediately *observable* experience. But what was actually needed was a theory that accounts for *unobserved* phenomena—quarks, the Big Bang, acupuncture meridians—without falling into spooky metaphysics.

Quine here builds upon the broad contextual shoulders of the great logician Gottlob Frege (1848-1925)—creator of the first new logic since Aristotle—whose holistic “Context Principle” states that a word or phrase derives its meaning only from the entire context of a sentence. Meaning then, is context dependent and arises only *interdependently* in relation to the causal nexus of the entire cultural tradition, not *independently* in isolation from the whole of this metalanguage basis. Quine agrees with Wittgenstein that “Comprehending a proposition means comprehending a language” (*Philosophical Investigations*). For the mature Wittgenstein all our beliefs are parts of a whole system of beliefs that constitute our “form of life,” or “lifeworld” (Habermas) that is our world view (*darshana*). The whole system presupposes, includes and subsumes all our knowledge and belief. (*On Certainty*, 1969). “A sentence has meaning only in the context of a whole language,” (Donald Davidson).

The Quine-Duhem Thesis. This radical epistemological holism or “confirmational holism” leads to refreshing consequences *fantasque*. If the propositions our theories generate about “what exists” in appearing reality—questions of ontology—are underdetermined by the empirical evidential data of our senses, then empirical observation cannot logically require any changes to a theory. Thus the Quine-Duhem Thesis states that no experiment can be decisive in confirming a theory because all experiments arise in a context of background assumptions. Therefore, all empirical experiments, indeed all perception is “theory laden.” So any proposition can be asserted to be true regardless of the data, provided we modify other pertinent internal components—“auxiliary hypotheses”—within the “field of force” that is the whole theoretical system. Conversely, no belief is protected from revisions. There will always be multiple theories supported by the data (Ken Wilber’s Principle of Non-Reductionist Causality). In Quine’s web of belief the data of empirical experience interfaces only with the surface boundary or boundary conditions that are the empirical experience aspect of the whole system. Thus we can distribute the cognitive force of anomalous experience that represents inconsistent empirical insults to a theory through the conceptual tweaking of other propositional constituents deeper within the theoretical system. “Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system.” All sectors of our intersubjective web of belief—even the laws of logic—are subject to such revision. The great modal logician Quine came to understand that even logical necessity is a product of deep background cultural assumptions, despite attempts by analytical philosophers and logicians to establish it as a citadel of *a priori* knowledge. Indeed, in the early 1940s Quine entirely reframed Frege (“On Sense and Reference” 1892/trans. Geach and Black Oxford 1952) and Russell (“On Denoting” *Mind* 1905), and denied logical necessity altogether, that is, he denied Aristotelian metaphysical foundationalism in which necessary and contingent properties must apply to objects regardless of their specified modality (real, nominal, greater than, etc.). For Quine, “this reversion to Aristotelian essentialism is required if quantification into modal contexts is to be insisted on...[therefore] so much the worse for modal logic.” This deep skepticism as to modal logic constitutes a radical

assault on quantified modal and causal logical necessity that are the very foundation of Western logic and metaphysics. For example, Quine was very much aware that the Quantum Principle of Uncertainty seems to violate Aristotle's sacrosanct "Law of Excluded Middle" of the Western logical canon.

Quine is a bridge. It is this Quine-Duhem Thesis that is the basis of Quine's philosophy world changing contention that Kant's foundational analytic/synthetic distinction, along with modern empiricist Reductionism are "ill founded," and serve no valuable scientific or philosophical purpose. In his revolutionary "Two Dogmas of Empiricism" Quine reveals that

Modern empiricism has been conditioned in large part by two dogmas. One is the belief in some fundamental cleavage between truths which are *analytic*, or grounded in meaning independently of matters of fact and truths which are *synthetic*, or grounded in fact. The other dogma is *reductionism*: the belief that each meaningful statement is equivalent to some logical construct upon terms which refer to immediate experience. Both are ill founded (Quine 1951).

These metaphysical "Two Dogmas" just happen to be the two epistemological pillars of Modern Scientific Empiricism with its 20th Century incarnation, Logical Positivism (Logical Empiricism, Logical Atomism à la Carnap, Russell, young Wittgenstein, Ayer). This seminal essay, along with "Ontological Relativity" (1969), constituted a devastating refutation of Logical Positivism, the preeminent anti-metaphysical scientific physicalist, realist, reductionist theory of the first half of the century. Quine informs us that in abandoning these "Two Dogmas" we will observe "a blurring of the supposed gap between speculative metaphysics and natural science. Another effect is a shift toward pragmatism" (Quine 1951). *Abandoning these Two Dogmas rendered dubious not only Logical Positivism, but the entire edifice of 20th century American Analytic, and Continental philosophy with their sweeping "turn to language" and linguistic analysis, thereby collapsing 2,500 years of speculative epistemology into natural science.*

However, this holistic Naturalism, as with Wittgenstein's Naturalism, is not an epistemological Relativism for Quine believed that our theories could and should be guided by "simplicity" (parsimony, Ockham's Razor), and "conservatism" (retain the best of the original theory). And to the skeptics both Wittgenstein and Quine assert that yes, there exists real knowledge, but it is contingent and conventional (Nominalism). There are no propositions that are necessary or absolutely certain (Wittgenstein 1967). This is essentially the Middle Way Buddhist view (*Madhyamaka Prasangika*), and the view of our emerging Noetic Revolution of the 21st century.

The traditional destructive separation in our Western collective web of belief between the two epistemic paradigms that are scientific objectivity and subjective metaphysical and religious speculation, between speculative epistemology and objective science has, at long last, been logically subdued. The Cartesian demon of the scientific pretension to perfect rationality, our promethean quest for absolute objective certainty is slain. And thus has philosophy been saved.

In *Word and Object* (1960), Quine's profound synthesis of his previous work, he promulgates his naturalized epistemology, ontological relativity, physicalism, skepticism as to

modal logic, Platonic Realism as to numbers, Scientific Realism and holism over reductionism.

Quine's project—his "extreme nominalist," antirealist, neopragmatist and empiricist "naturalized epistemology"—is a bridge from the ascending path that is the absolutism of Modernist objectivist Scientific Realism and Scientific Materialism/Scientism (and from the descending fuzzy Romantic *Sturm und Drang*, and the skeptical nihilist Postmodern reactions to Modernism), to the later holism of Kuhn, Habermas and the emerging pragmatic and neopragmatic reformation in religion, science and culture that is our incipient radically holistic and pragmatic Noetic Revolution.

The notion of cognitive paradigms introduced by Kuhn, but first elaborated by Quine and Wittgenstein, demonstrates that the "paradigm," or "web of belief," or "form of life" or "lifeworld" (Habermas) in which individuals are cognitively embedded determines reality, truth, meaning, intelligibility, worldview and ethical conduct for the participants in the paradigm. Again, the real, truth, meaning are not absolute, and are not independent of deep interdependent intersubjective cognitive cultural background information, and are preconscious, contingent, relative, conventional and pragmatic. And this is "ontological relativity," that is, "what there is" for human cognition supervenes upon our collective "web of belief." What you believe is what you get.

Moreover, Kuhn has demonstrated that cross-paradigm translation, evaluation and communication are quite problematic. Well, are these two paradigms—objective Science (form) and subjective Spirituality (emptiness)—as "incommensurable" as they seem? Is there a Middle Way?