

The Esoteric Quine?
Belief Attribution and the Significance
of the Indeterminacy Thesis in Quine's Kant Lectures

I. Introduction

This paper is adapted from the Introduction written for my German translation of Quine's Kant Lectures,¹ the original English title of which was *Science and Sensibilia*. The Kant Lectures summarize Quine's philosophy, as of about 1980. They certainly have had some circulation, subsequent to their original presentation at Stanford, and Quine borrowed from them in various publications. Yet the Lectures provide a somewhat different perspective on Quine's philosophy which is well worth exploring.

In particular, I would emphasize that what is said in the Lectures throws interesting light on Quine's characteristic semantic doctrines, centered on the claimed "indeterminacy of translation," chiefly by means of suggested connections between these semantic doctrines and Quine's concern to limit the effects of in-group gullibility on scientific and learned doctrine and acceptance.

Having written fairly extensively on Quine without early access to the Kant Lectures, I would certainly say that I take a somewhat different approach to Quine, now having seen them. In light of the Kant Lectures, I see Quine's philosophy as more deeply empiricist and Humean, more strongly influenced by British models,

though doubtlessly retaining commitment to central themes of the pragmatist tradition. The Kant Lectures may also allow us to see the pragmatic tradition in a slightly different light.

The opening of this famous but substantially unpublished work of Quine's evokes a comparison of his own themes to themes from Kant's *Critique of Pure Reason*, and if we think of Kant as offering a criticism of the *a priori* metaphysical excesses of pre-critical rationalism, then we might see Quine as somewhat similarly engaged in the Lectures, in a critique of a "pre-critical" empiricism, especially as once prevalent among the logical positivists. From that perspective, Quine's critique of the positivists' conception of empirical meaning, in "Two Dogmas of Empiricism," may begin to look like a "critique of pure meaning." In degree as the positivists' conception of meaning was of Kantian or neo-Kantian inspiration, with formative empiricist aspirations, then we might also see Quine as continuing Kant's work, attending to the remnants of anti-fallibilistic "rationalism" among the latter-day empiricists. As is evident from other writings by Quine, especially those following *Word and Object* (1960), and "Ontological Relativity" (1969) this "critique of pure (purely *a priori* or conventional) meaning," turns into an empiricist and behaviorist criticism of "mentalistic semantics," which has met with considerable debate and resistance. Thus the prominence of Quine on meaning and translation, over the last 50 years.

Willard Van Orman Quine (1908-2000) was Edgar Pierce Professor of Philosophy at Harvard University. His work and perspective has dominated much of Anglo-American philosophy over decades. He is the author of 24 books and hundreds of articles, which have been translated into a multitude of languages, around the world. In crucial areas of analytic and theoretical philosophy, including contemporary logic, philosophy of science, the theory of knowledge, and the philosophy of language, he has left behind monumental milestones; even during his lifetime he was treated as a contemporary master. As might be expected from a Harvard empiricist who famously signaled a "turn toward pragmatism," his influence on American neo-pragmatists, such as Hilary Putnam, Richard Rorty, and Donald Davidson, is important in our

understanding of contemporary developments. Quine's writings remain highly relevant to the on-going revival of pragmatism and to American-European exchanges generally.

Quine was born in 1908 in Akron Ohio. He studied mathematics and philosophy at Oberlin and Harvard, calling on Whitehead as his dissertation advisor. His early philosophical inspiration came from Bertrand Russell. Later influences include Rudolf Carnap and Alfred Tarski, who he came to know during a stay in Prague and Warsaw before World War II. These early influences can be traced throughout his writings.

The Kant Lectures were originally presented as a series at Stanford University in 1980. Generally, they provide a concise and thoughtful overview of Quine's philosophy, of use for specialists and for tough-minded students looking for a summary of Quine. The English originals of the Kant Lectures have not yet been published, in view of Quine's expressed wishes, and my book constitutes the first publication of a German translation. This will be the only existing version of the Lectures in print, beyond Michele Leonelli's Italian translation, *La Scienza E I Dati di Senso* (1987). Quine sent me the Lectures, for translation, in 1997, and he assisted with replies and discussions of early drafts from the translation.

II. Scientific Monism and Scientific Pluralism

In its most basic commitments, Quine's work is an empiricist-pragmatist² philosophy of science, including strongly mathematical, logical, nominalistic, and highly formalistic components; these commitments are partly formulated in the "monistic physicalism" featured in the opening Lecture. Monistic physicalism, as Quine argues, is much to be preferred to the major traditional alternatives of monistic mentalism, or dualistic interactionism.

An alternative not considered in those pages, however, is to embed the problems of the relations of physical and psychological descriptions and theory into the broader context of the relations of distinct subject-matters and disciplines, an approach which we might describe as a matter of scientific pluralism. The

pragmatist tradition prior to Quine is suggestive of such an approach; and even in the present text there is the related problem of the specifics of relations between physics, its concepts and generalizations, and the “physicalistic” concepts of Quine’s behavioristic psychology. What counts as “physicalistic” for Quine is not exhausted by what we can find in physics proper, and the programmatic remarks on reduction to physics do not insure their own success. The fact that there are various sciences, disciplines and areas of research should certainly suggest that we do not always understand, with great precision, the relations among them.³

Although we seek mechanisms in chemistry, say, to understand or explain biological phenomena, there is no guarantee that success will be forthcoming on the basis of contemporary chemistry. Instead it seems just as reasonable to expect some elaborations of both chemistry and biology arising from questions about their relationship. We certainly do not know that we will ever be able to get along without biology as a more or less independent science, employing its own characteristic generalizations and concepts. The objects and phenomena investigated in biology, or in psychology, cannot now be sufficiently described and differentiated purely by means of the language, concepts, and laws of physics; and perhaps this will never be accomplished. Still that point does not imply that the generalizations and regularities of chemistry, biology, or psychology violate the recognized laws of physics. The simple fact is that the recognized generalizations and laws of the various sciences are not all part of contemporary physics.

Quine argues in the Kant Lectures that monistic physicalism is to be preferred, because dualistic interactionism and monistic mentalism have so many theoretical disadvantages. He is convinced that the dualism of mind and matter must place the physicists’ conservation laws in question. Dualism, on Quine’s view, is anti-naturalistic and super-naturalistic. However that may be, though, I think it can be argued that versions of scientific pluralism, seen in light of the pragmatist tradition, are not subject to similar objections.

Mind and life are responsible for the propagation of cultures, artifacts and habits; and thinking of living things in particular, the propagation of organisms, each as a rule after its own kind. Both mind and life create

new organization of the physical world. They have their effects on the physical world, because they make use of physical resources, energy and materials and re-order them. If we allow that the special objects of psychology and biology have such effects, then clearly something physical is involved. But it seems just as clear that things psychological and biological are involved. Still we do not understand the relationships precisely enough to say exactly how this goes in all possible detail.

But to consider a more specific possible objection, it seems clear that the second law of thermodynamics does not forbid the creation of new order in the world of physics. It does not show that the development of new cultural orderings of the world, or of new biological species and their specific regularities of function and reproduction are impossible. It only tells us that if new order is created in one place, then this must be at the expense of increasing disorder in some larger environment. I am tempted to say that in trying to understand the relationships between the objects and laws of the various sciences and disciplines, philosophers have too often underrated the simple facts involved in our having these various distinctive sciences and disciplines. Generally, I think there is nothing in the laws of physics which shows the impossibility, within limited domains, of new orders of chemical, biological, psychological, or cultural regularities arising. There is nothing to show that new or emerging regularities and activities, studied by the diverse sciences and disciplines must violate the recognized laws of physics. On the contrary, physics must always remain open to these possibilities. This it does, in contrast with physicalistic philosophers, chiefly by failing to making any comment on the biological qua biological, or the psychological qua psychological, etc.

The pragmatic tradition before Quine renders similar positions plausible: Scientific pluralism implies non-reductive naturalism,⁴ and there are related problems in Quine's text regarding the details of the relationship between physics its concepts and generalizations and the "physicalistic concepts of Quine's behavioristic psychology. Quine's conception of the "physicalistic" depends partly on epistemological conditions and is not exhausted within physics itself. The programmatic remarks concerning reduction to physics do not guarantee

their own success. There are always a host of empirical questions involved in the relation of distinctive domains of inquiry. These arise in part from the Quinean point, made in criticism of radical reductionism, in “Two Dogmas of Empiricism” that the significance of a hypothesis cannot be equated with a particular range of evidence. Far less do the generalizations of distinct domains have any self-evident or easily inferred relation to those of another.

It is worth noting in this connection that Quine questions the generality of Davidson’s “anomalous monism” in the Kant Lectures, though elsewhere he has seemed to endorse it. The question is whether, and in what sense, there are available to us common-sense or scientific regularities of the relations between perception and the objects of perception. If there were no such regularities, then our ability to learn the language reporting perception would be something of a mystery. Quine argues in the Kant Lectures that our acquisition of language depends on the ability of our original teachers to observe and eventually to report the observations of the students, something of obvious use in teaching by ostension. Recognizing regularities in the relations between perception and the objects of perception at a common-sense level, it seems evident that various scientific reformulations will also be possible. But if there are regularities in the relationship between perception and the objects of perception, then Davidson’s general thesis of the anomaly of the mental becomes problematic. We have to recognize psycho-physical regularities that are subject to scientific inquiry and reformulation. Similarly, though we suppose that generalizations crafted in terms of stimulus meaning, say, have some determinable relationship to talk of physical dispositions, the exact relationship here is subject to empirical inquiry. That is a general lesson about the character of the relationships between physical and psychological concepts.

Quine’s behaviorism takes in the perspective of Clark Hull (and Roger Shepard) as mentioned in the Lectures, and his distinctively behavioristic semantic doctrines are best viewed as consequences of his empiricism and physicalism. Though Quine’s behaviorism is primarily methodological, it culminates in a

quasi-skeptical, and nominalistic, stance concerning linguistic meaning and meanings, especially regarding meaning conceived in terms of the analytic-synthetic distinction. But not all contemporary approaches to meaning and meanings rely on the analytic-synthetic distinction. Of some importance in this are approaches which generalize the Fregean context principle, seeing the meanings of words as depending not only on sentential context, as in distinct dictionary entries, e.g., but also on the broader context of theoretic development, as expressed, say, in encyclopedia entries.⁵ Taking such an approach to meaning holds out some prospect of escape from the excesses of Quine's behaviorism.

III. Sense and Sensibility

One might expect that Quine evokes C.D. Broad in his opening, and in the title of the First Lecture, "Mind and its Place in Nature," since this is a quite classical reference of empiricist and naturalistic conceptions of mind. More puzzling, perhaps is the English title of the Lecture Series, *Science and Sensibilia*, playing on that of John L. Austin's book, *Sense and Sensibilia* and the suggested connection of this with Jane Austen's *Sense and Sensibility*. Novelist Austen appears to get equal billing with philosophers Broad and Austin.

The point created some problems in translating the title of the Lecture series, and it evokes a chain of fascinating connections. Jane Austen is famed as expressing a sensibility overcoming both pride and prejudice; while J. L. Austin practiced his common-sense, ordinary language philosophy, dispensing with the sense-data of old, partly by selectively browsing the great *Oxford English Dictionary*. Equally, J. L. Austin is noted as a defender of common-sense realism concerning perception, and he makes good use of Frege's context principle when concerned, in his famous article, with "The Meaning of a Word."

The lecture series includes a considerable focus on a theme which we might think of under the title of "sensibility," or even perhaps "mentality." Notice, for example, the title of the third Lecture, which invites us

to think of human beings as a kind of “forked animal.” We are “forked” or divided between our focus on the natural world around us, a focus featured in empiricism and in the natural sciences, and a contrasting focus on other human beings, engagement in the particular human environments of our socialization and development. Making the linguistic turn with Austin and Quine, and turning to the natural world and our (translating) dictionaries, might we thus do better managing the problems of our particularities of pride and prejudice? Or, alternatively, taking common-sense and ordinary experience more seriously, might we better say, to paraphrase Jane Austen, in the opening of *Pride and Prejudice*, that “it is a truth universally acknowledged,” that a scientific philosophy, “in possession of a good fortune,” must be “in want” of a fuller relation to common experience and to life? At least this is plausible in contrast with the idea, and Quinean dictum that “philosophy of science is philosophy enough.”

Consider the humanities. Asking about “mind and its place in nature,” in Broad’s phrase, though explicitly rejecting Broad’s approach to mental contents, Quine looks to bridge the gap here, say, the gap between conceptions of language as primarily cognitive, and needed in our struggles with (or conquests of) nature, and conceptions of language as primarily a means of communication. Wittgenstein’s “private language argument” has a special place in the opening pages. Without our focus on other human beings, there could be no language learning, and neither languages or science. Thus the need of Quine’s turn toward mentalistic observation sentences, those reporting what others perceive. But Quine clearly favors the “sensitivity” of the natural sciences, with its strong orientation to the non-human world, suggesting the need for “behavioristic discipline” in reconstruction of the traditional “sensitivity” of the humanities, regarding our general orientation to the perceptual world, and in criticism of the gullibilities of belief.

The Quinean critique of “meaning,” “belief,” and “mentalistic semantics” suggest serious defects in the humanities, education in particular, and in human relations generally, where these are not built on a shared gaze beyond the human world and a strongly factual orientation. He argues for a revision of those humanistic

sensibilities which focus exclusively or excessively on particularities of human relations, conceived in terms of the “myth of the museum.” The idea is that whatever is said and grammatically well formed must have its particular and legitimate meaning, independent of relationship to the development of ascertainable evidence, and is thus suited to be entertained, accepted or rejected. Quine takes up a behavioristic and empiricist critique of this idea of “pure meanings” — meaning as purely conventional.

Still, Quine can be found to recommend the kind of explorations of our collective preconceptions, as practiced by J. L. Austin — though there is little acknowledgment of a need to resist thinking of collective preconceptions as merely preconceptions. There is some room for speculative developments and comparisons of claims, theses and presuppositions, and no simple reduction of meaning to evidence. Quine resists our taking our speculations too seriously, when they are not sufficiently related to possible evidence for their truth or falsity. Least of all should we aim to rigidly organize people by insisting on speculative dogma of whatever sort, social, political, religious, or scientific.

IV. How is Objective Observation Possible?

Knowing Quine’s writings, and his critique of analyticity in particular, one finds reason to think that one Quinean tendency of thought might answer the initial Kantian question in the Lectures (“How are synthetic judgments possible *a priori*?”) by flatly arguing that there is no sensible division between the analytic and the synthetic, so that purely “synthetic judgments” are not at all possible *a priori*, or otherwise. (Cf. the opening of Quine, 1960, “Carnap and Logical Truth.”) Again, one may notice at the end of the final Lecture that Quine rejects the Kantian “thing-in-itself.” Still, we might best understand the summary of Quine’s philosophy contained in these four short lectures, in terms of a recovery or reinterpretation of Kant’s question away from Kant’s own too-rigid philosophical categories. While Quine rejects an absolute distinction between analytic and synthetic, the *a priori* and the empirical,⁶ he certainly does allow for grades of observa-

tionality and grades of theoreticity. He takes a skeptical eye to the meaningfulness of all those claims lacking firmer relation to observation. But he also acknowledges the “theory-laden”⁷ character of observation and insists, against his positivist forbearers, on the need for theory not strictly definable in observational terms.

When Quine puts his own question in the lectures as “a plainer one,” but a question which “expresses much the same concern,” he invites us to understand his question as a variation on Kant’s. Quine asks, “How, on the strength of mere sporadic triggering of our sensory receptors, is it possible to fabricate our elaborate theory of other minds and the external world?” His answer is a purportedly empirical theory of mind and language, or we might say, it is a theory, and partly a normative theory, of that which we bring to sensation and which allows for the development of mind, language, and cognition. Consider here, for instance, Quine’s comments on our in-born standards of perceptual similarity, sometimes spoken of as a matter of “quality spacing.” From this perspective, at least, Quine offers a theory of the human and scientific sensibility, much as Kant did more extravagantly, with his categories and forms of intuition. Quine is partly focused on origins, in the sense of explaining the first steps of language learning; but in the end he suggests something of how we bring, and might best bring, our existing conceptual resources to the task of observation and ultimately that of the evaluation of theory. How, in general, is science or objective cognition possible, which requires observation, and an observational language, acknowledged as always “theory-laden?” Or, we might try to get a bit closer to Quine: “How is observation and observational language possible in spite of our scientific, theoretical, and common-sense preconceptions? While our preconceptions are not now widely considered *a priori*, Quine acknowledges their influence on observation. Arguably, we always bring something with us to observation, and how, then, is objective “synthesis” possible?

In Quinean terms, we begin with “in-born” standards of observational similarity, and subsequently these standards of similarity or “proximity” are elaborated in consequence of the felt success of related behavior,

and our observational judgments are thus colored by this partly in-born and partly acquired “sensitivity,” structuring our reports of observation.

How is objective observation possible? Part of the answer, though not one given in the Lectures, is that even theory-laden observation sentences may be found false in light of the very observations which they structure. For instance, though Einstein required his alternative concepts the relations of space, time, and matter, in order to make predictions about the curving of starlight in the vicinity of the sun during a total eclipse, those working in a Newtonian framework could still make the observational measurements which the Newtonian approach failed to predict. We make our observations, and know what observations to make, in light of elaborate theory and the conflicts of theories.

Quine is noted for his elaborate and rigorous account of scientific or cognitive language, including his “canonical language” of science sketched in logical and mathematical detail in the Lectures, and he is noted as well for his behavioristic theory of observational language. All of this is amply but concisely developed in the pages of the Kant Lectures. Quine characterizes a sentence as observational, if it *can* be learned through ostension. So, even an observation sentence laden with theoretical pre-conceptions can be learned by ostension, though this will only be expected within particular local or specialized communities of speakers who are familiar with the theory or system of beliefs in question.

Wolfgang Stegmüller famously argued for a firm connection between Quine’s behavioristic conception of observation sentences and his expressed desire to avoid “cultural relativism” (Stegmüller, 1987, pp. 310-311). Quine’s expressed objective of avoiding relativism concerning the truth of theories can be found in the Kant Lectures at the end of the lecture series, and this in spite of his reaffirming there his doctrines of the empirical indeterminacy of meaning, reference, and ontology. Quine argues for the importance of a structuralistic similarity among empirically equivalent but distinct translations and theories, or conceptual systems and ontologies, though observational evidence does not and cannot decide among such alternatives.

Since on Quine's conception any observation sentence can be learned by ostension, the objectivity of observation appears assured, by reference to the physicalistic and empirical psychology of stimulus and response.

But given that Quine allows that observation sentences may be theory-laden, and in view of the fact that it is only observation sentences (or "observational categoricals" and their components) interpreted in relation to particular theories, that can lend support or refute those particular theories, it appears that the specific interpretations which we give to observation sentences, in relation to contending theories, do have an important role to play. While it is true, as Quine insists, that we cannot always see how to bring observational evidence into meaningful contact with theories, in order to decide among claims apparently reasonable from the point of view of "mentalistic semantics," still it appears that on his own grounds he must allow for meaning and meanings, beyond the level of stimulus meaning and ostensibly acquired observation sentences, if he is to allow the specific role of the theory-laden character of observation sentences as evidence relevant to theory.

At a minimum, he must allow that in paradigm cases of decisions among competing theories by reference to empirical evidence, particular theoretical interpretations of observational terms have a role to play. For instance, Einstein's theory of special relativity played a special role in the selection and interpretation of observations of star-light, and the displaced distances between stars observed, in the vicinity of the sun during a total eclipse — though the Newtonians could make and report the same observations. At least part of the point here is that on the Newtonian theory, we would not expect these observations or expect them to have the significance which they actually have, something better understood through their relation to Einstein's physics.

Relevant observation sentences, interpreted neutrally or merely by reference to the psychology of stimulus and response do not bear upon either alternative theory, it is only as "theory-laden" in one or the other way, interpreted in relation to theory, that they can confirm Einstein's prediction, say, of the effect of mass on

spatial distance and the paths of light, or show the lack of a similar prediction in the prior theory. So, it appears that Quine's general characterization of observation sentences is useful in distinguishing genuine observation, primarily after the fact, i.e., after the chief work of theory in guiding observation has already been done. We get no effective means of deciding what to count as an observation sentence in complete independence of theoretical, even speculative theoretical, developments. Not only do we bring a generalized sense of perceptual similarity and proximity to observation and observational language, we are also looking to confirm and support, or to refute, particular theoretical approaches, particular expectations, or plans of experimental research — employing and coloring our observational language. For any empiricism, related points will surely have a place of honor suited to guide scientific theory and practice. The point may be taken as an elaboration on Quine's turn toward pragmatism.

V. Meaning, Belief, and Theory

The distinctive semantic theses which follow in the wake of Quine's methodological behaviorism have typically evoked great interest and much debate, at least since the publication of *Word and Object*. If we are to surrender the traditional conceptions of linguistic and cognitive meaning, linked to the analytic-synthetic distinction, then what substitute or replacement is to be expected in the light of Quinean criticisms? One chief direction of development regarding this has been the attempt, in light of Quine's distinction between the theory of meaning and the theory of referential notions, to reconstruct the theory of cognitive meaning within the (basically Tarskian) theory of reference. Certainly this requires some substantial emphasis on the empirical basis of interpretation and/or belief attribution, if Quine's criticisms of mentalistic semantics and the myth of the museum are to be properly taken into account.

Quine's doubts, as expressed in the Lectures, on the meaningfulness of belief attribution, where the evidence for the claim expressing the belief remains unclear, can certainly be viewed as a normative caution

against uncritical bandwagon effects on cognition. While it may plausibly be argued that someone's believing or not believing that the author of the Iliad was blind, to take Quine's example, consists in more than a simple disposition to assent or dissent from some particular sentence, it does seem important to ask and answer the question of what else of an empirical character may be involved. One important kind of answer is expressed in the observation of more systematic coherence among statements of belief which allows for checking and idealization in terms of theories over particular domains of discourse. But if we understand particular sentences in relation to both theoretical or systematic relevancy, empirically ascertained (as also suggested by "interpretive" approaches to the social sciences), and in relation to actual or potential evidence for such systems or complexes of sentences, then in the armory of Quinean arguments, this puts a particular pressure on Quine's argument from "proxy functions."

If proxy functions merely produce possible alternatives to particular systematized beliefs or sets of sentences, and we cannot say what is to count as evidence apart from a theoretical context, then this suggests that the proxy functions do not demonstrate Quine's "ontological relativity" and "inscrutability of reference" in quite the way he proposes; and we may better think of "indeterminacy of meaning" as fundamentally a matter of vagueness. No doubt, whatever means we have to determine the reference of expressions of our language will not settle every possible question. Our determination of reference can be no more precise than our accounts of the world, and these will always leave some unanswered questions about sameness and difference of objects. We should not expect anything we can say about the reference of given expressions to ever be anything more than relatively determinate.

This point explains what is going on in Quine's "freedom with proxy function." This is speculative paraphrase or reinterpretation which may or may not prove to be of any use. But since such speculative reinterpretation is always possible, as a mathematical possibility, it counts not at all against the specific interpretations we have of expressions, linked as they are to a theory of what there is to refer to with our words.

That alternative ways to interpret expressions of a theory exist proves not at all that they have not been interpreted correctly or cogently; and it provides no grounds for generalized skepticism concerning the cogency of referential semantics. Any such conclusion can be resisted on grounds of fallibilism. The mere fact that we could be wrong in our beliefs is a reason to keep them open to further inquiry, but it is not a reason for keeping them under a skeptical cloud (Cf. Callaway, 1993, pp. 113-116).

The significance of belief attribution, from this perspective has to do with the ways in which particular systems of beliefs, or particular interpreted theories, tend to guide further research and inquiry. It is a significant indication of agreement on theory if we agree not only on observational consequences but also on the best range of projects for further inquiry. While I would not think that Quine would endorse exactly this approach to his problems and questions, it does at least seem to take in the rejection of the analytic-synthetic distinction and also avoid the criticisms directed at mentalistic semantics. From this perspective, the meaning of a particular sentence is the difference it would make to an embedding system of belief, or suitably idealized theory, if it and the logical implications which arise in view of it, were removed. Quine would no doubt tend to resist such a “moderate holist” or contextualist solution, favoring his established relation to the British tradition of Humean skepticism in contrast, say, to the common-sense empiricism of Reid or even the critical common-sensism of C. S. Peirce. Still, in many ways, J. L. Austin is closer to a critical common-sensism.

H.G. Callaway

Mainz, July 2003

NOTES:

¹Willard Van Orman Quine, *Wissenschaft und Empfindung, Die Immanuel Kant Lectures*, translated and introduced by H.G. Callaway, Frommann-Holzboog, Stuttgart, 2003.

² Cf. Quine 1981, »The Pragmatists' Place in Empiricism«.

³ Cf. Quine 1960, *Word and Object*, p. 251 with reference to J. B. Conant, Quine wrote: "But meanwhile let us keep in mind also that knowledge normally develops in a multiplicity of theories, each with its limited utility and each, unless it harbors more danger than utility, with its internal consistency. These theories overlap very considerably, in their so-called logical laws and in much else, *but that they add up to an integrated and consistent whole is only a worthy ideal and happily not a prerequisite of scientific progress.*" The italics are not in the original. Quine recognized here the factual pluralism of the sciences, but not the possibility that this pluralism might remain permanently or further develop.

⁴ Cf. Dewey et al. 1945, "Are Naturalists Materialists?"

⁵ Cf. Palmer 1976.

⁶ Cf. Dewey 1938, *Logic: The Theory of Inquiry*, p. 18.

⁷ Cf. Quine 1992, *Pursuit of Truth*, p. 9.

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