QUINE ON LOGIC, PROPOSITIONAL ATTITUDES, AND THE UNITY OF KNOWLEDGE

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Abstract

I shall examine Quine's conception of logic, of propositional attitudes, and of the unity of knowledge in order to show that there are some tensions in Quine's system. I first propose a conception of the use or application of logic, stating that logic strictly speaking applies to intentional phenomena or to things that presuppose the existence of intentional phenomena. Then, I consider briefly Quine's philosophy of logic and discuss some issues. In Quine's philosophy, logic stays at the very center of the web of our beliefs; it is central in science and ordinary knowledge as well. Then I examine Quine's tendency to "quine" the mental, given his own maxim of minimum mutilation. Finally, I consider Quine's thesis of the unity of knowledge, the thesis that there is continuity from ordinary to scientific knowledge. If I am right about the use of logic and the presence of the propositional attitude idiom in ordinary knowledge and social sciences and humanities, I think there is a problem of consistency in Quine's system, and that Quine himself pointed to a part of the solution.

Quine's work represents certainly one of the most impressive philosophical achievements of the 20th century. His attempt to put together consistently various original philosophical theses is a source of admiration for every one. But the resulting system, like other profoundly original works, is dominated by tensions that sometimes oblige the author to make some revisions. Rightly seen as the main source of inspiration for the whole movement of philosophical naturalism, Quine's philosophical system is extremely difficult to grasp and assess. One of the most creative logicians of the last century, Quine was also a very elegant writer. He was indeed a great stylist, but unfortunately he chose constantly elegance instead of the "maximum clarity" we should expect from the outstanding logician he was. This is why he is some-

times exasperating for analytic philosophers. So I agree with Richard Foley's observation: "The result," says Foley, "is a collection of maxims, mottos, and pronouncements that are none too easy to fit into a coherent whole."[1]

My aim is to discuss Quine's conception of logic, of propositional attitudes and of unity of knowledge in the light of his own "maxim of minimal mutilation" (*Philosophy of Logic*). There is a tension in Quine's philosophy involving these terms and I simply wonder whether they fit together "into a coherent whole," and whether the tension is really tenable.

1. Logic

Let me start with some simple observations, may be a reflection of my own difficulty in conceiving something so important and central as logic. Boldly stated, here is my claim: Logic (with its laws, notions, predicates) literally *applies*, strictly speaking, to intentional phenomena or to something that presupposes the existence of intentional phenomena. Here I distinguish the application or use of logic from something we might call "implementation," when we construct machines in order to enabling them to process information. By "application" or "use" of logic, I mean, here, a human intentional action. I take it as a truism: Without intentional phenomena, logic would be of no use *for us*. By "intentional phenomena" I simply mean anything that instantiates the relational property of *being about something*. It could be a sentence (type or token), an illocutionary act like an assertion or a question, a proposition or a possible content for judgments and cognitive states like beliefs. I think Frege has illustrated that point very nicely in a negative way: "Standing by a river one often sees eddies in the water. Now would it not be absurd to claim that such an eddy of water was sound or true? And even if the dance of the atoms and molecules in my brain was a thousand times more spirited and frenzied than the dance of gnats on a summer evening, would it not be just as absurd to assert that it was sound or true?"[2] What Frege had in mind seems clear enough to me: Predicates like "sound" and "true," or others like "is a

consequence of," "is consistent with," etc., do not literally apply to physical objects or processes, but rather to intentional phenomena or to things that presuppose the existence of intentional phenomena. The token of a sentence is a physical object, but it presupposes the existence of people capable of having attitudes, capable of manipulating, e.g. marks on the paper, according to rules, rules that are not self-applying or self-interpreting. Usually, the token of an expression inherits the semantic properties associated with the corresponding type, which is an abstract entity, and the type, so to speak, serves as a standard to classify the tokens. A proposition is an abstract entity provided with a structure of constituents; therefore a proposition is not something "phenomenal" in character—like the type of an expression, it has no colour, no taste, etc.—, but we use propositions to *classify our mental states provided with a conceptual content*, [3] and the proposition itself embodies semantic properties. Conceived of that way, propositions presuppose the existence of intentional phenomena. If I believe that the Brazilian team will win the next World Cup and you believe that the Brazilian team will win the next World Cup, then we have the same belief, because we do believe or accept the same proposition, which serves to specify the content we both believe.

To be sure, I'm not proposing any kind of return to psychologism, but only pointing out, as Frege himself put it, that "subjective elements are a necessary part and parcel of th[e] grasping of a content" [4]; what I propose is to take seriously the observation that any use of logic presupposes the existence of some mental state, event, act or activity. It presupposes conscious control too, control over the flow of our cognitive states, because otherwise, there wouldn't be any difference between free association of ideas and serious reasoning.

Logic so conceived is a normative discipline governing one of our most widespread activities: Inferring, and our practices of inference, of course, extend well beyond science.[5] I think this much is acceptable for a Platonist like Frege, a conventionalist like Carnap, and a Wittgensteinian in philosophy of logic. The application of logic presupposes the intentional activity of inferring according to rules that, in turn, apply to intentional phenomena or to things that presuppose the existence of intentional phenomena. And I do not see how there can be

any intentional phenomenon in general without intentional mental states or events (so I accept Brentano's thesis or a version of it). Generally, if *a* logic is a relation of consequence defined over a set of objects, then these objects, to be member of the set, must be such that it is possible, for a cognitive agent, to understand them or at least to manipulate them according to rules. I confess that I'm unable to conceive of logic and its use differently.

Someone could ask: But what do you mean by "application" here or by the "use" of logic? Well, by "application" I mean two things. Firstly, I mean that the notions and predicates of logic apply to certain domains of things and not to others. I cannot say literally of a piece of furniture that it is a prime number; in the same way, I cannot say of the "dance of the atoms and molecules in my brain" that it is true or sound. Trying to do this only produces nonsense. That would be a kind of category mistake (Ryle) or a confusion of spheres (Carnap). This is, I think, what Frege was saying in the passage I quoted. To say, for instance, that the readiness potential in one cortical zone of my brain is a logical consequence of (or is consistent with) the production of acetylcholine by the synaptic gates of a group of neurons in another cortical zone is just to talk pure nonsense. Secondly, if we look at logic (or logics) with a syntactic eye, then we see sets of axioms or laws; in that case we are simply considering logic as a formal, abstract mathematical science, the study of logical truths. But when we infer validly according to rules that explain or justify our intuitions of validity, or when we follow consciously and cautiously a rule to make sure we are arguing validly, we apply or make use of logic. Most people just don't care about the rules of logic when they reason, but most of the time they act according to these rules (and that, of course, does not mean that they are able to formulate them). In scientific contexts, however, we are usually more careful and we do apply logic, for instance, to construct long chains of definitions, to derive an observable consequence in order to check it out, or to reconstruct and formalize a naïve theory. Quine recognizes plainly this fact when he points out the "ubiquity of the use of logic. It is the handmaiden of all the sciences, including mathematics" (*Philosophy of Logic*, 98). Of course, any theory, scientific or not, must have an underlying logic. A theory from

which you cannot infer anything could hardly be seen as interesting. Traditionally, the rules of inference apply to propositions. If Quine's followers do not like propositions, and we know they don't, we could try to use sentences to specify the content of attitudes, but many difficulties are associated with this view, the most obvious being that we make a lot of valid inferences using sentences containing indexicals and demonstratives. In that case, to determine the truth-conditions of "what has been said," that is, the content of the sentence-in-use, the sentence itself is not enough. Quine is a halfway house Platonist: He accepts the ontological part of Platonism, the existence of classes, on the basis of indispensability arguments (science would be impossible without them), but he does not accept the epistemological part, the existence of a special kind of intuition, the direct "grasping" of these abstract entities. So what's the problem with propositions defined in set-theoretical terms? Quine does not accept propositions because they would induce a relation of synonymy for which there is no objective sense, "no fact of the matter." So Quine main argument against proposition is motivated by an empirical worry, not by a taste for ontological parsimony.

To sum up: Any application or use of logic presupposes the intentional activity of inferring according to rules that, in turn, apply to intentional phenomena or to things that presupposes the existence of intentional phenomena.

Is that all acceptable for a naturalist in philosophy of logic like Quine? For Quine Logic is "the systematic study of logical truths" (*Philosophy of Logic*, xi) and logical truths, in turn, are defined in terms of *substitution* of the lexicon in the following way: "a *logical truth* is a *sentence that cannot be turned false by substituting for lexicon, even under supplementation of lexical resources*" (*idem*, 60). Quine starting point is sentences, lexicon, and grammatical structures. No transcendent category. Be that as it may, the existence of something like a bearer of truth-value, say the token of an eternal sentence, seems to make sense only in so far as there are attitudes or intentional states, at least the attitude which consists of "holding true" something. So, if the logical truths are, so to speak, written in the grammatical structures of the natural languages we use, and internalized in the childhood as our first

obvious truths by learning sentences containing the connectives and quantifiers, this does not take off the (derived) intentionality of these sentences, their "aboutness." Even if you adopt an extensionalist position and reject intensional and modal logics, what has been said above concerning the application or use of logic applies just as well to the use of first order predicate logic.

Finally, even if logic and language are the result of our "nature" and the way we, taken together with our elders and ancestors, react and cope with the reality that surrounds us, it does not seem that a notion of logical necessity, usually embedded in the notions of logical consequence and validity, can be so reduced to "natural necessity," whatever that means. The best way to capture the intuitive idea of validity or logical consequence, as Aristotle clearly saw, and more recently C. I. Lewis, presupposes the introduction of a modality. That intuitive notion does not disentangle logic from its relationship with knowledge or justified belief and rationality, as some notions of logical consequence do. According to that main tradition in philosophical logic, to get a satisfactory notion of logical consequence, we need some modality, not too strong, but strong enough to capture the very idea of deductive validity without generating the validity paradox (on that point, see Jacquette's paper, 2002). Quine's definition of logical truth involves a modality ("… a sentence that *cannot* be turned false…") that is not available to someone, like him, who rejects modal logic and intensional entities. But this may be just a *façon de parler*. Perhaps, we should translate Quine's intention by the following formulation: "Φ is a logical consequence of Γ if there is no uniform substitution of the non-logical terminology that renders every member of Γ true and Φ false." (See Shapiro, p. 231). Apparently, here, we don't have any modality involved, but then I think we have the right to ask: Why *should* we follow the rules of logic, the rules that determine when "something follows from something else"? It only *happens* that "there is no [such] substitution" until now, but do we have a guarantee that it will always be so for future or *possible* substitutions? In other words, the *binding force* of the rules of logic, in Quine's perspective, from what does it come?

2. Propositional Attitudes

Quine accepted (*Word & Object*, p. 220) Chisholm's thesis (or Chisholm's version of Brentano's thesis) that we cannot get outside of the "circle of intentional notions," but first insisted on the "emptiness of a science of intention," and that we should finally get rid of the "essentially dramatic idiom of propositional attitudes." His eliminativist sympathy is obvious in *Word & Object*, and he has been classified, rightly it seems, as an early eliminativist (Rudder Baker [1994], p. 491), but much later, or so it seems to me, Quine's eliminativism becomes only an "as-far-as-possible-attitude," as we can see in *The Pursuit of Truth* and in his last book *From Stimulus to Science* (especially on p. 93). There, while he still rejects beliefs, doubts, hopes, expectations, intentions, regrets, and so on, Quine accommodates believing, doubting, hoping, intending, expecting and regretting. They "all continue," he says, "alive and well." They are relations between people and sentences, and not, of course, between people and propositions. But there is still room for something like a "mental activity," or "acts of thinking," as a "bodily activity," he says. This is obvious from his "Reply" to P. F. Strawson in the Hahn/Schilpp volume on his philosophy (1986/1998, p. 533): "Feeling pain, thinking about Vienna, understanding French, and the like," he says, "are in my view states of a physical organism. I do not repudiate them, nor do I envisage defining them in neurological terms, nor even in terms of behavior." This is again, of course, Chisholm's thesis in practically the same clothes. In the *Pursuit of Truth* Quine accepts observation sentences like "Tom is perceiving a dog" that are clearly "mentalistic." Mental predicates are not predicates of a mental substance, but of our bodies; they simply correspond to different groupings, irreducible to those of physiology. Here we have something very similar to Davidson's anomalous monism. Be that as it may, we have to suppose that this is sufficient to give an account of action and conscious control in general, and of inference in particular, as the logical activity of drawing consequences from the cognizance of other sentences taken as premises. As we know Davidson has been criticized for turning the mental inert. Epiphenomenalism is always a threat for any brand of naturalism. Knowledge

is a blend of passivity and activity as Husserl saw quite clearly; that means that we are not only cognitive subject submitted to innumerous natural laws, but also and first of all cognitive *agent*, capable of exercising *control* over the transition of one cognitive state to the next, which is required for epistemic justification to take place. However, it is not clear that, by adopting an exclusive third person point of view as Quine recommended for the "whole science," we can make fully intelligible certain notions like that of person, of rational agent, of conscious control, of intentional action, etc. But these notions are indispensable to express the ordinary knowledge we think we have about ourselves. (More on this later).

When Quine claims that believing, desiring, regretting, etc., are acceptable as states of the body, it is difficult to repress the question: Is this what to be a naturalist in the philosophy of mind is all about? To say, simply, that mental states are now conceived of as states of a physical organism? This looks more like a tentative grammatical correction than like a conceptual breakthrough. The interesting question is and always has been: What *kind* of states are these? And how do they *differ* from, say, temperature or weight? There is, literally, an army of well-trained analytic philosophers trying to show how to naturalize the mind. This is clearly not an easy task, and I don't think that Quine's shortcut is very promising or informative. A few quotations of the Churchlands, on that score, are no embellishments to me.

3. The Unity of Knowledge

Quine never accepted easily the presence of "psychological modalities" (or propositional attitudes verbs) in the language of what he calls the "whole science." But the meaning of that expression is not as clear as it seems. Does it denote something well unified and to be reach "in the long run"? Are social sciences and humanities part of the "whole science"? If not, what's the criterion of their exclusion? I think we all agree that the prospect of reducing linguistics, economics or sociology, let alone history, to physics is nothing but an empty dream. I suggest that the unavoidability of the "dramatic idiom" of Intentionality in the

social sciences and humanities could serve as a logico-linguistic crite-
rion for distinguishing these sciences from the others, hard natural
sciences, where the use of this idiom, most of the time, would sound
ridiculous. The problem for Quine—or better, for us, involved in the
business of interpreting Quine's work—is the continuity or no-gap
thesis he defends about "ordinary knowledge" and scientific knowl-
edge. As Peter Hylton points out: "It is a crucial part of [Quine's] doc-
trine that there is no break between science and common sense"
("Quine's Naturalism," p. 226). In *The Ways of Paradoxes*, he says:
"Science is itself the continuation of common sense" (233). But at the
same time, he seems to reduce the "whole science" to empirical (natu-
ral) sciences as the only ones capable of providing "real knowledge."
According to Hylton, this means the following: "All of our knowledge,
or attempts at knowledge, are subject to standards of evidence and
justification which are most explicitly displayed, and most successfully
implemented, in (empirical) science in the ordinary sense of that
word." (*Ibid.*, 266). But the dramatic idiom of Intentionality pervades
ordinary knowledge and all the social sciences (including humanities).
And as I see it, any conception or reconstruction of the use or applica-
tion of logic makes that "dramatic idiom" unavoidable. The way out
seems to be, once more, his naturalism: "[A]ll our knowledge (includ-
ing philosophy—A.L.) has, in principle, the same status as our knowl-
edge of scientific theories." (Hylton, p. 267). Is this a way to exclude
sociology, history or ethnology from the realm of science? Obviously,
Quine does not try any kind of "reduction," and, still defending the
no-gap thesis, he finally maintains the mentalistic idiom. (Compare
with Carnap's version of the project for the unified science, where
"reduction" was a master word.) The no-gap thesis is interesting and
attractive; surely, the acceptance of any scientific theory presupposes
quite a lot of "background knowledge," and that background knowl-
edge is not only constituted by pieces of knowledge exhibiting the
"standards of evidence and justification" that are "successfully imple-
mented" in empirical sciences. We accept a scientific theory because,
by doing so, we can *infer* interesting consequences. The ordinary un-
derstanding of any sentence usually requires from the hearer the ca-
pacity to reason according to rules. So logic and intentional phenom-

ena are there in ordinary knowledge and science as well. Classes, according to Quine, are indispensable for science as a whole; so we should accept that kind of moderated Platonism, as Quine urged us to do. But what about psychological attitudes and intentional phenomena in general? Are they not indispensable too to make logic and natural science fully intelligible? There is a clear tendency in Quine's work to "quine" the mental. He points regularly to (and quotes with approval) Churchland's connectionism (*FSS*, p. 88). But at the same time, he did not repudiate the "mental" and put logic and its principles at the very center of the "web of beliefs." Quine reduced mathematical logic to quantificational theory, defending an extensionalist position, and linked the fate of intensional logics to the acceptance of propositional attitudes (*FSS*, p. 93). But, if I'm right, even the use of an extensional logic, the only logic "fully intelligible," he says, presupposes intentional phenomena. If the maxim of minimum mutilation applies to logic and to its principles and to set theory, in ordinary knowledge and in the natural sciences, why should we try to eliminate attitudes and intentional phenomena to be considered a good naturalist? Why should we try to revise the whole science in order to eliminate the mental? I know that the bus I used to take when I go to the University passes in the neighborhood at 01h.25 p.m. This is a piece of ordinary knowledge. I acted upon that belief successfully for years. When I do that, I rely on a lot of presuppositions that I cannot express without using mentalistic expressions (the desire of the taxpayers to have an efficient system of collective transport, the intention and commitment of the bus driver, the beliefs of the users that the bus be on time— beliefs that strengthen the regularity of the system—not to talk of the commitment and apprehension of the Mayor!). Is it possible to eliminate the mental and still maintain the no-gap thesis? I don't think it is. Mentalism, like it or not, is an essential part of the non-scientific picture of ourselves, a picture we all accept. So, if the no-gap thesis is right, and I think it is, that non-scientific picture of us is essential for the intelligibility of the scientific enterprise.

Conclusion

Naturalism has two old enemies: Platonism and Cartesianism (or substance dualism). There is, of course, a variety of mentalisms (substance dualism being only one brand), some of which are compatible with naturalism or materialism, others not. But naturalism has always presented a strong tendency to dispense with mentalistic theories and terms. We should be prepared to change any part of the whole science, as Quine's fallibilism recommends. That's all right. He is a leading figure of the naturalist movement.[6] But he accepts the existence of classes and, at last, does not want to "repudiate" the mental. The result is a strange and weak kind of naturalism, very liberal indeed, which accepts classes and mental states and events. Quine's naturalism is a blend of moderate Platonism and moderate mentalism. On that score, Quine's attitude, to say the least, is far from clear. Methodologically, his naturalism seems to be only an "as-far-as-possible attitude." But what one should do in order to be a good "as-far-as-possible-naturalist"? If I tell to my children: "Be good, as far as possible!," they won't know what to do! Worse: They could mess around and still pretend that they did their best! This is probably what naturalism is: "[A]n overall approach to the subject" rather than "a set of specific doctrines." [7] But some naturalistic approaches are much more radical than Quine's, Churchland's for example, a downright eliminativist that Quine quotes with approval. Our ordinary knowledge describe us as rational beings, conscious agents, with a "perspective on the world, […] needs, commitments, emotions, and values." That knowledge is not scientific, does not require any special training, and presupposes a first person perspective. [8] I think Quine's radical empiricism, with its rejection of the first person perspective, leaves us, on that point, with a problem. I also think that Quine himself points to the solution when he finally accepted the mentalistic idiom: Being less radical and running away from the idea that science alone provides knowledge worthy of belief. But that means that we should also accept the complementarity of the first-person and the third-person perspectives. [9] May be this result is not thrilling, but thrill is not what makes

philosophy interesting or important. Philosophy has never been a ma-
jor source of strong emotions.[10]

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Resumo

Vamos examinar a concepção de lógica, de atitudes proposicionais e de unidade do conhecimento de Quine, para mostrar que há determinadas tensões em seu sistema. Propomos primeiro uma concepção do uso ou aplicação da

lógica, afirmando que, estritamente falando, a lógica se aplica a fenômenos intencionais ou a coisas que pressupõem a existência de fenômenos intencionais. Então, consideramos brevemente a filosofia da lógica de Quine, e discutimos algumas questões. Na filosofia de Quine, a lógica se encontra no próprio centro da rede de nossas crenças; ela é central tanto na ciência quanto no conhecimento comum. Então, examinamos a tendência de Quine de "quinear" o mental, dada sua própria máxima de mínima mutilação. Finalmente, consideramos a tese de Quine da unidade do conhecimento, a tese de que há uma continuidade entre o conhecimento comum e a ciência. Se estivermos certos sobre o uso da lógica e sobre a presença das expressões de atitudes proposicionais no conhecimento comum e nas ciências sociais e nas humanidades, achamos que há um problema de consistência no sistema de Quine, e que ele próprio indicou uma parte da solução para isso.

Palavras-chave

Lógica, atitudes proposicionais, unidade do conhecimento, sistema de Quine.

Notes

[1] R. Foley 1994, p. 245.

[2] *Cf.* Frege 1997 [1897], p. 245.

[3] See Perry 2001, p. 20.

[4] See Frege 1979 [1879-1891], p. 4.

[5] Frege 1979 [1879-1891] (p. 3): "Logic is concerned only with those grounds of judgement which are truths. To make a judgement because we are cognisant of other truths as providing a justification for it is known as *inferring*. There are laws governing this kind of justification, and to set up these laws of valid inference is the goal of logic." See also, recently, Shapiro 2002 (p. 227): "Logic is the study of correct reasoning, and has something to do with justification." See also Sainsbury 1991 (pp. 5–6): "Logic is a *normative* discipline. It aims to say what reasons are *good* reasons."

[6] See the first sentences of "Ontological Relativity," where he acknowledged his debt to Dewey's naturalism.

[7] See Giere 2002, p. 308.