
The
Semantic
Tradition

From
Kant
To
Carnap

To the Vienna Station

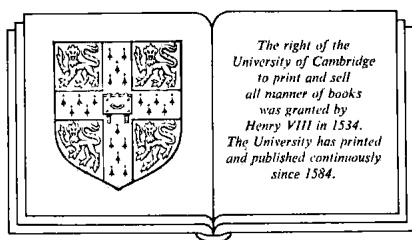
J. ALBERTO COFFA

The semantic tradition from Kant to Carnap

To the Vienna Station

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Editor's preface

On Christmas Eve, 1984, Alberto declared that a "good penultimate draft" of his book would be finished by the end of the year. The day after Christmas he became ill, and in the early morning hours of December 30, he died. The typescript Alberto left behind was, indeed, almost completed: The research had been finished and the arguments and theses were already in place; all but the introduction and the last chapter had been written in full, and extensive notes for those had been drafted. Some portions of the typescript had already been carefully crafted, and the intended shape of much of the rest was clear. In many places Alberto's dry wit showed through – you could almost see behind the prose the tilt of his head, the lopsided smile, the brief twinkle in his eye. With the help of a number of people, that typescript has been readied for publication. Using the notes Alberto left, I have completed the introduction and final chapter. Repetitions, digressions, and minor errors have been removed, theses and arguments delineated more clearly, grammar corrected, prose smoothed – all, I hope, without disturbing the twinkle. The result is not what Alberto would have produced, but perhaps it is something he would have found acceptable. He had intended to write a conclusion, discussing some of the implications of his study for contemporary philosophy. I have not attempted to write that conclusion.

Alberto began writing this book in the spring and summer of 1981 while a fellow of the Center for Philosophy of Science at the University of Pittsburgh. He was extremely grateful to the center for the time that allowed him to begin this project, and to his colleagues in the Department of History and Philosophy of Science, Indiana University, for both the time and the supportive and congenial environment that allowed him to continue his work. During the writing of this book, Alberto had fruitful discussions with many people; many also supplied him with information about useful sources and materials, and provided both intellectual and spiritual support. I cannot begin to compile a complete list of people he would have thanked, but certainly on that list would have been those with whom he had long and regular conversations on the philosophical matters that are central to this book: Thomas M. Simpson, Eduardo Garcia

Belsunce, Hector Casteñeda, Simon Blackburn, and Alberto's students Frank Pecchioni and Tom Oberdan. There is no doubt that he would also have gratefully acknowledged the invaluable and constant support and encouragement of Adolf Grünbaum, his teacher and friend. To the many others whose assistance and influence should be acknowledged, I apologize for not including your names and thank you for the help you gave Alberto.

My own thanks go first to Gordon Steinhoff, who took on the heroic task of tracking down the sources of the quotations in the typescript, checking the quotations and translations for accuracy, completing the citations and references, and compiling the bibliography. I also gratefully acknowledge the assistance of Michael Friedman, who read the typescript at two different stages of my work on it and gave me numerous valuable suggestions for correcting and editing it. In addition, I thank Nicholas Griffin and an anonymous referee for their editorial suggestions, and Eduardo Garcia Belsunce, Edward Grant, and Tom Oberdan for lending their expertise where needed. Finally, I thank John Winnie for his suggestions and help on the typescript, and for the encouragement and support that sustained me through the long process of bringing it to publication.

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Introduction

The primary topic of this book is a decade in the philosophical life of what might loosely be called Vienna. Between 1925 and 1935 in the neighborhood of Vienna, the usually sluggish step of the Spirit suddenly quickened as some of his most enlightened voices started talking to one another. Wittgenstein, Tarski, Carnap, Schlick, Popper, and Reichenbach were, perhaps, no wiser than some of their contemporaries, but circumstances led them to interact during that decade, and the result of that dialogue deserves our attention.

When I started writing this book, I intended to explain in the preface that this was the history of epistemology since Kant, the way Carnap would have written it had he been Hegel. Since then I have come to think that while the Spirit may not be malicious, he is certainly forgetful. In Vienna he took a decisive step forward on the subject of the *a priori*; but he also moved sideways and backward on other crucial matters. Most of his erratic behavior could have been avoided had he been aware of some of his achievements in the preceding century. He may, perhaps, be excused since his best insights were due to the least noticeable of his voices.

Within the field of epistemology one may discern three major currents of thought in the nineteenth century: positivism, Kantianism, and what I propose to call the semantic tradition. What distinguished their proponents primarily was their attitude toward the *a priori*. Positivists denied it, and Kantians explained it through the Copernican revolution. The semantic tradition consisted of those who believed in the *a priori* but not in the constitutive powers of mind. They also suspected that the root of all idealist confusion lay in misunderstandings concerning matters of meaning. Semanticists are easily detected: They devote an uncommon amount of attention to concepts, propositions, senses – to the content and structure of what we say, as opposed to the psychic acts in which we say it. The others cannot see the point of wasting so much time on semantic trivia.

It would be hard to find a more crucial epistemological problem than that of the character of *a priori* knowledge. One of the basic intuitions

behind almost every epistemology since Plato's is that there are two radically different types of claims: the *a priori* and the rest. In pre-Kantian philosophy, many had tacitly assumed that the notion of analyticity provided the key to that of apriority. Kant saw that a different account was needed since not every *a priori* judgment is analytic, and offered a new theory based on one of the most remarkable philosophical ideas ever produced: his Copernican turn. In addition to this, Kant placed the idea of pure intuition at the center of his account of the scientific *a priori*. Positivists could not accept the consequences of this vision and saw no way out of the dilemma other than to deny the existence of the *a priori*, even in the case of logic.

Faced with the Scylla of asserting that $2 + 2 = 4$ is empirical and the Charybdis of explaining it through the operations of pure intuition, semanticists chose to turn the boat around and try to find a better route. That there is *a priori* knowledge – even of the synthetic type – was indubitable to all of them; but most semanticists regarded the appeal to pure intuition as a hindrance to the development of science. Part I describes the stages through which it came to be recognized that pure intuition must be excluded from the *a priori* sciences and that consequently the Kantian picture of mathematics and geometry must be replaced by some other.

Our story begins with Kant's views on analysis and some of his reasons for concluding that one must appeal to pure intuition in connection with the *a priori* (Chapter 1). We then turn to the leading episodes that undermined that conviction. Bolzano's reductionist project (Chapter 2), complemented by Frege's and Russell's logicist projects (Chapters 4 and 6), challenged Kant's convictions in the field of arithmetic. Helmholtz (Chapter 3), Poincaré, and Hilbert (Chapter 8) provided the decisive contribution to analogous developments in the field of geometry. By the end of the nineteenth century, it had become clear that *a priori* knowledge could not possibly be what Kant thought it was. Early in the twentieth century, the special and general theories of relativity appeared to pose yet another challenge to the Kantian view, now from the domain of physics (Chapter 10).

Semanticists were primarily interested not in showing that Kant had not solved the problem, but in solving it themselves. The basic assumption common to all members of that movement was that epistemology was in a state of disarray due primarily to semantic neglect. Semantics, not metaphysics, was their *prima philosophia*. In particular, they thought, the key to the *a priori* lay in an appreciation of the nature and role of concepts, propositions, and senses. Though no defensible doctrine of the *a priori* emerged from their writings (Chapter 7), the ground was laid by a patient sharpening of semantic insights in the writings of

Bolzano, Frege, Husserl, Russell, and the early Wittgenstein (Chapters 2, 4, 5, 6, and 8). Against this background, Wittgenstein and Carnap offered in the early 1930s the first genuine alternative to Kant's conception of the a priori (Chapters 13, 14, 15, and 17). Their view that meaning is responsible for the a priori was that period's most decisive contribution to philosophy.

Logical positivism started as a branch of neo-Kantianism that differed from other branches in taking science as an epistemological model (Chapters 9, 10, and 11). During the 1920s, the early members and associates of the group slowly broke away from their Kantian beginnings, Schlick and Reichenbach as they struggled to interpret the lessons of the new theory of relativity (Chapter 10), Carnap as he tried to develop his epistemological ideas as a theory of constitution (Chapters 11 and 12). Out of their high regard for science emerged a second major contribution of the Vienna group – a transcendental approach to epistemology, a new “philosophy of science” (Chapters 10, 17, and 18).

The Copernican turn that had inspired Kant's analysis of the a priori had also led to a theory of experience and an understanding of the link between knowledge and reality that naturally led to idealism. In the nineteenth century, many wanted to avoid idealism, but few knew how to do it short of refusing to think through the consequences of their convictions. Semanticists suspected that if Kant's tacit semantic premises were granted, then certain Kantian insights on the role of constitution in knowledge could only be interpreted as leading to idealism. Once again, they thought, the key to a reasonable attitude was a clear-headed semantics.

Empiricists have traditionally flirted with meaning but, in the end, have remained hostile to it. When meaning becomes anything more than a topic for oblique allusion, when it becomes an explicit subject of research, it appears as an alternative to empirical considerations. It begins to look like a factual domain that is impervious to scientific research. Those associated with the Viennese movement were above all empiricists and shared the traditional empiricists' horror of meaning. Unequipped with meaning, they found it difficult to avoid idealism (Chapters 9 and 10). Carnap came closer than the others to making sense of realism, but his distaste for all things metaphysical also prevented him from completing the incorporation of meaning into empiricism (Chapters 12 and 17). In the end logical positivism remained without meaning. The natural consequence was the debate in the early 1930s over “foundations of knowledge,” which was not really about foundations at all, but about the link between what we know and the world (Chapter 19).

Our picture of the Viennese developments of Part II will not be balanced unless we bear in mind the truths and falsehoods the participants learned

from the three great nineteenth-century traditions that together shaped their standpoints. In all fairness, this book should have included, in addition to Part I, two other introductory sections devoted to Kantianism and positivism. The finitude of my life, my mind, and my reader's patience were factors to consider. There was also the fact that nineteenth-century Kantianism and positivism are far better known than their less celebrated rival. Finally – why not admit it? – the proportion of insight to confusion is far, far greater among semanticists than among their more prestigious and respected colleagues.

PART I



The semantic tradition

Kant, analysis, and pure intuition

It was disastrous that Kant . . . held the domain of the purely logical in the narrowest sense to be adequately taken care of by the remark that it falls under the principle of contradiction. Not only did he never see how little the laws of logic are all analytic propositions in the sense laid down by his own definition, but he failed to see how little his dragging in of an evident principle for analytic propositions really helped to clear up the achievements of analytic thinking.

Husserl, *Logische Untersuchungen*, vol. 2, pt. 2

For better and worse, almost every philosophical development of significance since 1800 has been a response to Kant. This is especially true on the subject of a priori knowledge. The central problem of the *Critique* had been the a priori, and Kant had dealt with it from the complementary perspectives of judgment and experience. His “Copernican revolution” gave him a theory of experience and a non-Platonist account of the a priori. But when the *Critique* was well on its way, Kant discovered the notion of a synthetic a priori judgment, and he saw in this a particularly appealing way of formulating his project as that of explaining how such judgments are possible.

The constitutive dimension of Kant’s theories of experience and the a priori will figure prominently in later developments. As we shall see, one of the turning points in our story will involve a Copernican turn, though the issue it concerns will be different from Kant’s. Moreover, the early stages of logical positivism may be viewed as a development to the point of exhaustion of this aspect of Kant’s original idea. In this chapter, however, we shall focus exclusively on the more superficial aspect of Kant’s treatment of the a priori, involving synthetic a priori judgments; for it was the shallowness of Kant’s treatment of this matter that led to doctrines which, in turn, elicited the semantic tradition.

One of the central points of agreement among the members of the semantic tradition is the idea that the major source of error behind Kant’s theory of knowledge – especially of the a priori – is his confused doctrine of meaning and that the key to a correct doctrine of the a priori is the understanding of semantics. Our purpose in this first chapter is to

examine the relevant features of Kant's epistemology and its semantic background. Our first problem will be to uncover Kant's semantic views.

In a sense, of course, he hadn't any; for part of the story we aim to tell is that of how semantics was born. In another sense he did, of course, for he was bound to have opinions, however tacit and unacknowledged, on what it is to convey information, on when we may succeed in doing so, and when we are bound to fail. Philosophers have often thought these topics unworthy of much attention. The analytic tradition that extends from Bolzano to Carnap places meaning at the heart of philosophy – or, rather, it finds that it has been there, unrecognized, all along and that the failure to think seriously about it is the root of the *reductio ad absurdum* of rationalism displayed in Kant's philosophy and its idealist offspring. The question is, Where does one look for the tacit semantics of those who did not address that topic explicitly?

In one of the many aphorisms Quine aimed at the semantic tradition, he noted that “meanings are what essences became . . . when wedded to the word.” If this were right, those who would like to know what Kant thought about meanings would have to consult what he wrote about essences; since he wrote next to nothing on that subject, this would be the end of the search. Actually, meanings had a more honorable ancestor within the field of traditional logic, in the category of concepts or, more generally, representations. To find out what a post-Cartesian philosopher thought about meanings, we must look at the logic books he wrote or quoted from, for it is there that the notions of concept and judgment are treated. Meanings are what concepts became when wedded to the word.

Conceptual analysis

Kant was very proud of his distinction between analytic and synthetic judgments. He recognized that philosophers before him had understood the significance of the division between a priori and a posteriori judgments. But when Eberhard challenged his originality on the matter of analyticity, Kant replied, in an effort at irony, that everything new in science is eventually “discovered to have been known for ages” (Allison, *The Kant–Eberhard Controversy*, p. 154). Had he read Borges, he would have paraphrased him: “Great ideas create their ancestry” (see Borges, “Nathaniel Hawthorne,” *Obras completas*, p. 678).

In fact, Kant had little reason to be proud. His treatment of the analytic–synthetic distinction is original in certain ways, as we shall see; but in the end, it is one of the least distinguished parts of his philosophy. In it, some long-standing confusions converge and others emerge, original with Kant; the latter were destined to have a long and damaging influence throughout the nineteenth century.

The picture of meaning dominant since the emergence of rationalism and empiricism took meanings to be inextricably associated with experience. It is plausible to think that in order to know the meaning of pain, love, rivalry, heroism, and so on, one must undergo certain experiences and that the more carefully one analyzes these experiences, the better one understands pain, love, and so on. It is but a small step to conclude that the meanings of 'pain', 'love', and so on consist precisely of those psychic phenomena that are the targets of our analysis. The same may be thought to hold for all expressions; they will mean something only insofar as, and to the extent that, they relate to human mental processes. Number expressions, for example, may be thought to derive their meaning from the mental processes in which they are involved – the natural numbers through processes of counting, geometric objects through acts of measurement, and so on.

On this way of looking at things, the basic semantic notion is that of "representations" (*Vorstellungen*) construed as "modifications of the mind" that "belong to inner sense" (Kant, *Critique*, A98–9), as mental states designed to represent something. A long tradition, canonized in the *Logique de Port Royal*, had declared ideas or representations the most important subject of logic, since "we can have knowledge of what is outside us only through the mediation of ideas in us" (Arnauld and Nicole, *La logique ou l'art de penser*, p. 63). In Leibniz's words, human souls "perceive what passes without them by what passes within them" (Clarke, *The Leibniz–Clarke Correspondence*, p. 83); indeed, "the nature of the monad" is "to represent" (Leibniz, "The Monadology" [1714], *Philosophical Papers and Letters*, pp. 648–9).

The word '*Vorstellung*' first became a technical term in Wolff's philosophy; it corresponded approximately to the earlier 'idea' and was intended to cover both intellectual and psychic processes. For Meier, author of the logic text that Kant followed in many of his courses on that subject, representations were "pictures or images (*Gemälde oder Bilder*) of those things that we represent to ourselves (*wir uns vorstellen*)" (Meier, *Auszug aus der Vernunftlehre*, sec. 24). In its pre-Kantian use, in Wolff, Lambert, and Meier, for example, 'representation' and 'concept' (*Begriff*) functioned as synonyms, and the pre-critical Kant largely followed this usage.¹

One of the many ways philosophers have tried to understand meaning might be called the "chemical theory of representation," using an analogy occasionally found in the writings of Locke, Lambert, and even Kant. According to this theory, representations, like chemical compounds, are usually complexes of elements or "constituents," which may themselves be complex. Generally, when a representation is given to us, we are not consciously aware of this. Analysis is the process through which we

identify the constituents of a complex representation. It is a process that must come to an end, after (perhaps) finitely many stages, in the identification of simple constituents. Moreover, the best way to know what a representation is, is to identify its constituents – preferably its ultimate simple constituents – and the form in which they are put together or linked to constitute the given representation. To know a concept fully, for example, is to define it; and definition (*Erklärung*) is no more and no less than exhaustive and complete analysis.

Descartes's doctrine of ideas had promoted the notions of clarity and distinctness to the status of philosophical celebrities. Under the influence of the new rationalism, these two heterological notions soon came to be regarded as the highest virtue in the ethics of concepts and to figure prominently in the chapters of most logic textbooks. They took a more definite shape in the German philosophical tradition.

Even though representations are basically intended to represent other things, we can upon occasion turn the arrow of reference on them (Kant, *Critique*, A108). When we do so, when we become conscious of a representation, then, Kant said, it is “clear” (*klar*; e.g., *Logik*, p. 33). The much more crucial virtue of “distinctness” (*Deutlichkeit*) depends entirely on our mental relation to what Kant called the “manifold” given in representation. Consider intuitive representations first. If we intuitively represent (e.g., see) a house in the distance, we may not be consciously aware of the windows, doors, and other parts of it. But, claimed Kant, we surely see them, in some sense; for we know “that the intuited object is a house”; hence, “we must necessarily have a representation of the different parts of this house. . . . For if we did not see the parts, we would not see the house either. But we are not conscious of this presentation of the manifold of its parts” (*Logik*, p. 34; also *Logik Pöhlitz*, pp. 510–11; *Reflexionen zur Logik*, refl. 1676, p. 78; *Wiener Logik*, p. 841; Borges, “Argumentum Ornithologicum,” *Obras completas*, p. 787). The venerable Wolff had praised “the great use of magnifying glasses towards gaining distinct notions” (*Logic*, pp. 27–8). Following his lead, Kant noted that when we look at the Milky Way with bare eyes, we have a clear but indistinct representation of it, since we do not see a discontinuous cluster of stars but, rather, a continuous streak of light. When we look at it through the telescope, however, our representation is (more) distinct (*Logik*, p. 35; also *Logik Pöhlitz*, p. 511). Echoing one of Leibniz's examples in his *Nouveaux essais* (bk. 2, chap. 2, sec. 1 and bk. 4, chap. 6, sec. 7), Kant illustrated the nature of a clear but indistinct representation: “Blue and yellow make green, but we are not always aware of the presence of these parts in green” (*Wiener Logik*, p. 841).²

Mutatis mutandis, the same is supposed to be true of conceptual representations. We may, for example, have a clear concept of virtue, and we