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7. The remarkable ubiquity of such convergence is discussed at length in Larry Laudan, *Science and Values* (Berkeley: University of California Press, 1984).
8. See, esp. Keith Lehrer and Carl Wagner, *Rational Consensus in Science and Society* (Dordrecht: Reidel, 1981).
9. Richard T. Weidner and Robert L. Sells, *Elementary Classical Physics*, Vol. II, (Boston: Allyn and Bacon, 1973), p. 478.
10. *Ibid.*, Vol. I, p. 3.
11. This claim is pressed in Putnam, "The Refutation of Conventionalism," *op. cit.*
12. As might differences in the social and profession organizations of the ircs.
13. See esp. Nelson Goodman, *Ways of Worldmaking* (Indianapolis: Hackett, 1978), Ch. VII. In spite of some disagreements which may be more verbal than substantial (but note Goodman's suspicion of the verbal/substantial distinction, expressed in the cited chapter and elsewhere), Goodman's defense of relativism in this chapter has been the principle influence on my own thought concerning both the possibility of ultimate disagreement among ircs and relative truth.
14. As in Roderick Chisholm, *Theory of Knowledge* (Englewood Cliffs, N.J.: Prentice Hall, 1966), p. 18.
15. It might seem natural to take into account the percentage of ircs taking each attitude toward a statement. Apart from the difficulty in getting any handle at all on the question of what an irc would be *most likely* to do, I suspect that because of the unlimited possibilities for variation in irrelevant respects among ircs, an equal (and infinite) number will accept (reject, withhold) any statement accepted (rejected, withheld) by at least some.
16. To Haack's intriguing question of why such neither-true-nor-false statuses should be considered truth-values the verificationist theory of truth allows a straightforward answer: they are in obvious respect statuses of the same kind as truth and falsehood. Cf. Susan Haack, *Philosophy of Logics* (Cambridge: Cambridge University Press, 1978), pp. 213-15.
17. Goodman, *op. cit.* The verificationist definition of absolute truth corresponds to Goodman's proposed "innocuous interpretation of necessity," *ibid.*, p. 120.
18. I.e., one that would be accepted by some irc.
19. A point also made by Goodman *op. cit.*, p. 120

# THE LIFE AND WORK OF THE EARLY CARNAP

NEIL TENNANT

## I. A PROFILE OF CARNAP'S PUBLICATIONS

**W**HAT strikes one most forcibly on working one's way into the chronological profile of Carnap's career was how late he started.

The second thing that strikes one is how much of his extensive early output remains in the original German (and French).

The third thing that struck me was how his interests shifted when he left Europe to come to America, and began publishing only in English. The work in semantics and on probability and induction stands at some remove from his earlier work on other (albeit related) themes. Despite the fact that his most important early works have now been translated, it is likely that many of us know of Carnap's writings only from his American phase. Even if we have studied the earlier works in translation, there is much to be filled in from the untranslated work. A glance at the bibliography in the Schilpp volume reveals just how extensive it is.

For the purposes of retrospective analysis, I would divide his work during his earlier, European period, into the following areas and phases:

The early pre-occupation with philosophical foundations of geometry and physics; in parallel, and through the 'twenties, concern with the problem of the categories, from his own peculiar constructionalist standpoint. Associated with that is the hard positivist line on metaphysical questions. Thus the natural grouping is that of the *Aufbau* alongside the doctoral dissertation. Then, around 1929/30 there is a shift, or a branching, towards the concerns of the *Syn-*

tax. Carnap becomes interested in the philosophy of mathematics, and sustains that interest for the decade. He also becomes interested in the logical analysis of scientific theories, and the problem of concept formation. The earlier Kantian concerns now take a linguistic turn: the focus is on logic and language in science.

His first publication, a Kantstudien Ergaenzungsheft in 1922, was his doctoral dissertation *Der Raum*. By then he was 31. His masterpiece of epistemological constructionalism, *Der Logische Aufbau der Welt*, appeared in 1928. (Its first part, under the title "Konstitutionstheorie der Erkenntnisgegenstaende" had been submitted with four other pieces for his Habilitation.) By then he was 37. There followed the heyday of activities in the Vienna Circle, of which Carnap was one of the most prominent members. In 1930, aged 39, he moved to a Chair in Prague. Four years later came the publication of *Logische Syntax der Sprache*, his second Meisterwerk.

By 1936, aged 47, he had moved to Chicago. From 1939 onwards he published (with insignificant exceptions) only in English. He was 56 when *Meaning and Necessity* was published; and pressing 60 when *The Logical Foundations of Probability* appeared. All through his sixties he poured out papers on probability and induction. "The Aim of Inductive Logic" appeared just after he turned seventy.

What was the importance of his late start? And what were its effects on the character of his work?

It is easy to explain the late start. There was the Great War. Carnap served as an officer of the infantry in Berlin, apparently with light duties and having a reasonably quiet time. I say "reasonably" because he got into trouble with his high command for his political activities. He was editor of a newsletter whose editorial policy on political expression had clearly been getting out of hand. He had his knuckles rapped, and on 11 September 1918 sent out a roundrobin to his comrades saying

Der Oberbefehlshaber in den Marken hat mir "die weitere Versendung von Rundbriefen jeder Art" verboten (Einzelkorrespondenz wird dadurch nicht betroffen.) Ich bitte deshalb, es zu vermeiden, groessere Schriftstuecke oder zusammengesetzte

Briefe, die eine Behoerde als Rundbrief ansehen koennte, an meine Adresse zu schicken.

Um so mehr nehme jeder, der in meine Naehة kommt, Gelegenheit zu Besuch und Gespraech.

Ich bitte dies auch ..... mitzuteilen.

Besides getting into trouble with the military authorities, he got through boxes and boxes of reading material. In 1913 and 1914 he had been a student of Frege's in Jena. This was in the middle of a period of six or seven years for which we have a detailed record of his ravenous reading. We also have evidence, from a long document entitled "Ueber Deutschlands Niederlage" that Carnap wrote in 1918 at the war's end, of his contemplative outlook on life. Grappling with the problem of his nation's honour in defeat, and with the complexities of the political situation in Europe, he turns to consider "De(n) Sinn des Geschehens." He asks

Und welcher ist *unser* Anteil an Deutschlands Schuld? Zwar fuehlen wir uns mit dem ganzen deutschen Volke solidarisch, d.h. innerlich schicksals- und schuldverknuepft. In noch engerem Masse fuehlen wir uns aber verbunden mit denen aus dem Volke, die uns nach Lebensart, Gesinnung und Anschauung nahestehen, mit den *geistigen Menschen*. *Welchen Teil der Schuld tragen sie?* Ihre Gleichgueltigkeit gegen das politische Leben hat verschiedene Gruende. Von den beiden Polkraeften des geistigen Lebens: *Aktivitaet und Kontemplation*, die irgendetwie eine noch unerkannte Synthese finden muessen, hat die zweite, die quietistische, mystische vielleicht auf den deutschen Menschen allzu starken Einfluss ausgeuebt.

We do not know who the "wir" of this document is: it could be a group of military comrades, an academic circle, a social class. But one is led to wonder whether Carnap's own immersion in books might not be behind his reflection that the "geistigen Menschen" had thought too much and acted too little. Carnap's record of his

reading before and during the war years takes the form of two diaries: *Buecher die ich gelesen* and *Gelesene Buecher*. The detailed entries run from April 1909 to early 1917. The second diary then has a brief quantitative Zusatz taking us up to 1921, the year in which he submitted his doctoral dissertation. It was his Tante Tine's kind thought to provide the young Rudi with his first little diary on the 18th of April, 1909. After 453 entries Carnap started a newer, bigger diary in 1913, beginning with the 454th entry. The 1039th title is the last one entered. The Zusatz then reveals that sometime in 1921 he devoured item number 1417. Even for a thirty year old, this is not bad going. His reading diaries stop here, presumably because he needed more time for his other writings.

## II. EARLY INFLUENCES

What major influences do we know of, then, from this record? He had read Kant's *Prolegomena* (#247), the *Kritik der praktischen Vernunft* (#370) and the *Kritik der reinen Vernunft* (#480). Frege's *Begriffsschrift* was entry #134. The first volume of the *Grundgesetze der Arithmetik* was entry #439. The article "Funktion und Begriff" was #446. All this was before he studied under Frege, at least in the classes at Jena from which we have his lectures notes. Plato, Brentano, Fichte and Lotze make an early appearance. He read Kierkegaard in 1914; he had read a lot of Nietzsche and some Schopenhauer before that. But if the record is to be taken as complete (and what other supposition is reasonable?!), he had not, before the war broke out, read any Aristotle, Descartes, Leibniz, Spinoza, Locke, Berkeley, or Hume. His interests were *naturwissenschaftlich* and literary. He had read writers on biology such as du Bois Reymond and Haeckel. He had read Planck, Mach and Poincaré. He had read Gauss and Hilbert. Lighter relief came in the form of a great deal of Goethe; several Strindbergs; Shakespeare; Schiller; Tolstoy; Rilke; Ibsen; Kipling's *Jungle Book* and Mark Twain.

## III. CARNAP'S DOCTORAL DISSERTATION

The remaining major philosophical influences on his doctoral thesis he presumably encountered in his studies in the few years

before: Leibniz, Husserl, Russell, Schlick and Reichenbach. His thesis is an extraordinary record of the flurry of foundational concerns in the exact sciences in the early twentieth century. Carnap had mastered the logical and mathematical works not only of figures such as Frege and Hilbert, mentioned above, but also Bolzano, Cantor, Dedekind, Einstein, Fraenkel, Hausdorff, Klein, Lobatschewskij, Lorentz, Minkowski, Pasch, Peano, Riemann, Weierstrass, Weyl and Zermelo.

The thesis itself is a masterly and all too brief summary and reconciliation of opposing philosophical views about the status of geometrical truths. It is informed by all the most recently available work in the foundations of logic and geometry. It reveals in Carnap an admirable trait which informed his personal relationships, his interest in the project of a world language, and his subsequent philosophical work: a desire for rational resolution and conciliation, and balance backed by an awareness of variation or extremes.

In the thesis one of the two original sections is a vivid example of his mathematical ability. He shows how the surface of the earth could be taken as a plane with positive overall curvature in a system of spherical geometry. Moreover, space is to be taken as homogeneous and isotropic. These conventional choices were to be offset by a further conventional choice of an unusual metric. With this, says Carnap, "muessen wir offenbar zu andern Naturgesetzen kommen, als den ueblichen" (p. 52), and he shows what these would be in the case of the principle of the conservation of energy, and Hamilton's principle. It is one of the earliest and most vivid demonstrations of the conventionalist thesis: "... die Bedeutung des Beispiels liegt darin, die grundsatzliche Moeglichkeit der Wahl eines ganz andern als des ueblichen Gefueges fuer den physischen Raum zu zeigen, das aber ebenso alle Erfahrungstatsachen widerspruchslos darzustellen imstande ist" (p. 54).

He had begun his thesis with a three-fold division of space into *formal, intuitive* (perceptual) and *physical*. He concentrated on the three-dimensional cases. Within each main division he effected further subdivision: into *topological, projective* and *metric*. He deftly characterized the richer notions and structure involved with each ascent. Among the isotropic metric spaces he distinguished the homogeneous from the non-homogeneous. Among the homogeneous, characterized by their respective negative, null or positive con-

stant curvature, were hyperbolic, parabolic and elliptical space respectively. These are the ones associated respectively with the names of Lobatschewskij, Euclid and Riemann.

He emphasized the "Wahlfreiheit" of the "Festsetzungen" concerning choice of operational metric for physical space, and choice of what is to count as straight or planar. He commends Dingler for having been the only writer to have had the insight that even the usual adoption of Euclidean geometry involves conventional choice. But Helmholz, Killing and Schlick receive credit for having stressed how changes in that conventional choice could be accommodated by changes in the formulation of laws of nature.

Carnap's discussion of formal space shows the latent logician in him. Here is where one finds the other original contribution I mentioned. He produces two quite nongeometric interpretations, or models, of Hilbert's axioms for projective geometry. One involves *strips of colours*; the other involves *consistent sets of judgments*. He emphasizes how, from the statements about these that correspond to the axioms, the two analogues of Desargues's theorem would respectively follow. This is without any apparent dependence on Bolzano's logical work, and before the rise of Tarskian model theory.

In his characterization of formal space he uses iterated class constructions. He also rehearses some of the theory of relations, order types and cardinalities. Given the infant mortality rate for foundational claims in those days, he can be forgiven the one logical slip in his dissertation. He characterizes omega as the order type of those progressions that have an initial element, and in which every element has an immediate successor and every non-initial element has an immediate predecessor. But this cannot be right; for satisfying this characterization is the order type of a copy of the naturals followed by a copy of the integers. (It seems that non-standard models of number theory dogged Carnap even unto 1940. A letter from Alonzo Church dated May 6, 1940 (008-15-17), pulls him up for a mistaken treatment of recursive definition in the *Syntax*. He draws Carnap's attention to non-standard models, and Skolem's important 1934 paper.)<sup>1</sup>

It is in his discussion of *Anschauungsraum* that Carnap's philosophical sympathies are revealed. He enquires after

der logischen Begründung der Erkenntnisse ueber den Anschauungsraum, genauer: der Grundsätze, da die weiteren Sätze aus diesen formal-begrifflich abgeleitet werden. Erfahrung gibt nicht den Rechtsgrund fuer sie ab; die Grundsätze sind Erfahrungsunabhaengig. . . . Denn es handelt sich hier, wie Husserl gezeigt hat, gar nicht um Tatsachen im Sinne der Ehrfahrungswirklichkeit, sondern um das Wesen (Eidos) gewisser Gegebenheiten, das in seinem besondern Sein schon durch einmaliges Gegebensein erfasst werden kann.

His final view is that intuition gives us *a priori* the topological character of space. God, as it were, gave us the open sets; man, on the basis of his empirical experience and exercising freedom in conventional choices, did all the rest.

Der topologische Raum stellt das ihnen allen gemeinsame dar und ist deshalb als Form des in der Wesenserschauung des Raemlichen Fassbaren anzusehen. (p. 62). . . . Die Erkenntnis vom Gefuege des physischen Raumes ist Erfahrungserkenntnis: sie ist gegruendet auf den  $>$  Tatbestand  $<$  der Erfahrung und wird durch Induktion gewonnen, d.h. durch Versammlung und Verarbeitung von Erfahrungstatsachen, und kann daher auch unbedingte Gewissheit nie selbst erreichen, sondern nur sich ihr als einem Grenzwert immer weiter naehern. Auf Grund des Tatbestandes ergibt sich so die Erkenntnis des topologischen Raumes, waehrend die Verwandlung dieses in eines der metrischen Gefuege nur durch Hinzunahme der frei waelzbaren Masssetzung moeglich ist. (p. 63)

What Carnap means by  $>$  Tatbestand  $<$  is "die Erfahrung, soweit sie nur in der eindeutigen, notwendigen Form vorliegt, die keinerlei frei gewaehlte Festsetzung enthaelt" (p. 65). With a finely tuned Kantian phrase, he concludes that only "die im Tatbestand enthaltenen raemlichen Bestimmungen" can be a "Bedingung zur Moeglichkeit der Erfahrung." The axioms of formal geometry are, according to Carnap, analytic and a priori. Those of intuitive, per-

ceptual geometry are synthetic and a priori. Those of physical geometry are synthetic and a posteriori.

The thesis has not been translated. Given its brevity and occasional rawness, it does not quite deserve to be ranked with such classics in the philosophy of mathematics as the *Grundlagen*. But it is a fascinating snapshot of the workings of a massively well-informed and fertile mind before the onset of the stirrings of logical positivism. It marks, as I have already emphasized, a late start to publication on Carnap's part. But the reading record of his diaries, the awesome *Literaturverzeichnis* and the accompanying scrupulous *Literaturhinweise* of the dissertation, all point to a bottling up of what was soon to become a majestic flow. It swept him through Vienna to Prague, on to London as the main figure of the positivist movement, then to Harvard and his first permanent position in America at Chicago. The flow was stanchued only by his death.

But it was not only the studying during the war years that precipitated the belated onrush of writings. It ran in the family. The Wuppertaler Zeitung of Friday, 5th January 1934, carried on its front page an obituary for Carnap's mother on the tenth anniversary of her death:

Zur Erinnerung an eine der groessten Frauengestalten Wuppertals. Anna Carnap geb. Doerpfeld. Geboren am 4. Maerz 1852 in Barmen-Wupperfeld, gestorben am 7. Januar 1924 in Jena. Zum 10. Todestag. . . .

. . . Sicherlich ist es fuer die 35 jaehrige Anna Doerpfeld nicht einfach gewesen, aus ihrem schlichten Haushalt bei dem pensionierten Vater in Ceresheim heraus, den 61 jaehrigen Bandfabrikanten Carnap als dritte Ehefrau zu hieraten. Wieviel Taktgefuehl, wieviel Lebensklugheit, und wieviel Opfersinn gehoerte dazu! . . .

Die alte Fraue schreibt eifrig an einem Manuskript, an dem Lebensbilde ihres verstorbenen Gemahls . . . Aber das Schicksal hat es anders gewollt. Nach langem qualvollem Leiden nahm ihr der Tod die Feder aus der Hand . . . Welch reiches Leben hier zu Ende ging, davon zeugen drei mit beseelter Feder geschriebene Buecher.

#### IV. THE PERIOD BEFORE THE AUFBAU

It was during the time Carnap was writing his thesis that he entered into the correspondence with Dingler on conventionalism. Since Gereon Wolters has already given a comprehensive account of that exchange (in ed. N. Rescher: *The Heritage of Logical Positivism*), I shall not detail it here. But it is worth mentioning that it involved a long unpublished and untranslated piece by Carnap to Dingler on 10 August 1921, entitled "Ueber die Aufgabe der Physik, mit Anwendung auf die allgemeine Relativitaetstheorie."

All of Carnap's fascinating writings on space remain untranslated. His first published articles took up the problem of the requirement of simplicity, and the problem of dimension. Indeed, if one wishes to find a definition of the important notion of *Dimensionszahl* used in the *Aufbau*, one has to look at his paper "Dreidimensionalitaet des Raumes und Kausalitaet: Eine Untersuchung ueber den logischen Zusammenhang zweier Fiktionen." Carnap's intriguing thesis was that the fiction of the 3-dimensionality of space (hence the 4-dimensionality of the "Weltgeschehen") was the logical outcome of the latter's lawlikeness. The primary world of sensory experiences was  $(2+1)$ -dimensional. [2 for space and 1 for time]. The secondary world of physical objects and happenings, in sustaining causality, has its spatial dimension raised to 3. (The ironic inversion of Lockean terminology may even be accidental.)

These early papers on space, time and causality constitute a discernible prelude to his later epistemological concerns in the *Aufbau*. His was in effect a huge project of neo-Kantian re-construction. Kant's doctrine of space had been rehabilitated after the unsettling discovery of non-Euclidean geometries, by restricting it to the topological core common to all spaces. Time appeared to be taking care of itself, modulo Minkowski. There remained the categories. Causality revealed itself at work in the raising of dimensions. What of continuants?

It was not enough for Carnap to appeal to the spontaneous application of the category of substance. He wanted to chart a possible logical passage, via higher order abstractive definitions, from suitable primitive givens in sense experience to complex constructions

that "were" the objects of our knowledge. The method was Russellian, and regrettably dated in the symbolism used. His inspiration also came from Russell. The fourth volume of *Principia Mathematica*, which never appeared, was to have been on geometry. And *Our Knowledge of the External World* was far too informal and programmatic for Carnap's tastes. Russell's "hypothetical construction" as a solution to the "problem of the connection of sense with objective reality," was, he (Russell) said,

only in part necessary as an initial assumption, and can be obtained from more slender materials by the logical methods of which we shall have an example in the definitions of points, instants and particles; but I do not yet know to what lengths this diminution in our initial assumptions can be carried.

To this Carnap scribbled in shorthand in the margin of his own copy, "Diese Tieferlegung und Verringerung der Anfangsannahmen ist meine Aufgabe!"

The beginning was a rough typescript of July 1922 entitled "Vom Chaos zur Wirklichkeit." Later Carnap wrote on the first page "Dies ist der Keim zur Konstitutionstheorie des >Log. Aufbau <." Everything that we experience, it claimed, is only an already ordered reality. The "irrational" starting point of his theory was to be the desire to eradicate inconsistencies ("Unstimmigkeiten") in that reality by re-building it. If a well-known later figure could write that language was perfectly in order as it is, one wonders why no-one pointed out to Carnap that reality was too. But no; it was back to the drawing boards. To complete one's return to one's starting point, one had to strike out from reality every sign of order and individual determination ("Einzelbestimmbarkeit"); such as the distinction between the psychological and the physical, the ordering of the latter in space; the ordering of both these domains ("Bereiche") in time; the distinction between different sensory modalities; and the conceptual definiteness of individual sensory qualities deriving from their positions in "quality space" (for example, the position of a musical note in a scale). The result, understandably, was "Das Chaos." Having thus burned our boats, we would then have to rebuild them, while all at sea. To this end one would use "Bausteine."

These were members of the Z-series: aZb would hold just in case a and b were simultaneous (?) memories (!) and a referred (!!) to an event earlier than (!!!) b. The details are interestingly different from those later employed in the *Aufbau*.

Mit ihnen vollziehen wir naemlich den Aufbau. Weiter gehen wir mit der Zerlegung nicht; die Bausteine gelten uns als unteilbare Totalitaeten, obwohl sie alles das umfassen, was die spaetere Abstraktion als Gesehenes, Gehoertes usw. unterscheidet, ferner als Teiltoene eines Klanges, als die Farbflecken eines Gesichtfeldes usw. Auch wir muessen zu diesen Begriffen kommen, aber nicht durch Zerlegung, sondern durch Aufbau. Sie sind fuer uns nicht Teile von Bausteinen, sondern Klassen von solchen, die konstituiert werden durch gewisse, zwischen den Bausteinen bestehenden Beziehungen.

As this reveals, virtually the whole recipe was there as early as 1922. The paper contains much more detail which I cannot go into here, and which (as I indicated above) would bear very interesting comparison with the constructional details of the *Aufbau* of 1928, should anyone be dedicated enough to undertake it. The methodology was already well worked out in the abstract by this stage. In another published typescript, "Die Quasizerlegung" (from 1922/23), Carnap sketches the fundamentals of the method later method employed in the *Aufbau*. The subtitle is "Ein Verfahren zur Ordnung nichthomogener Mengen mit den Mitteln der Beziehungslehre."

#### V. CARNAP'S RELATIONSHIP WITH SCHLICK

Thus when he came to Vienna in 1925 to work under Schlick, it was with well-formed intellectual intentions. His voluminous correspondence with Schlick is a mine of material about his life and times in Vienna. It begins with polite and tentative enquiries<sup>2</sup> about the possibility of studying in Vienna with Schlick. In gradual stages come subtle shifts of salutation as their relationship becomes more intimate and equal. The summer of 1927 brings the "Du." Carnap was a close confidant of Schlick's. Schlick would confide about such



things as an attack of colic in a lecture, or an embarrassing visit by an over-exuberant and rather outrageously exhibitionist lover of his. This affair was complicated by the lover's live-in boy friend—whom I believe to have been the man who shot Schlick. [Professor Hempel and Hutten have confirmed in conversation that the rumours at the time within the Circle were to that effect.] Schlick describes<sup>3</sup> to Carnap how narrowly he averted a debacle when some letters were forwarded to him by Carnap from the lady in question. They arrived at the summer house where Schlick and his wife were staying; and only a "combination of luck and quick thinking" on Schlick's part prevented the disaster of uxorial interception. It was to Schlick that Carnap recounted in a letter<sup>4</sup> how he had married Ina (his second wife) in Prague, after a meaningless ceremony in a registrar's office conducted in Czech. This brought to a respectable end the bohemian aspect of a relationship of some years' standing; "Nun sind also meine Verhältnisse wieder in guter, bürgerlicher Ordnung."

## VI. FRAU X

Schlick also, from time to time, makes solicitous enquiries about one Frau X in Carnap's life. She was a lover and life-long friend of his. When Ina wrote to her to inform her firmly that she had taken over Carnap, but that he had her picture at his bedside and, she knew, would always love her, Frau X wrote back to say she was glad to learn that Ina was not jealous; for if she were, she would not be the woman for Carnap. The correspondence with Frau X is extraordinarily moving. It begins with a spry and youthful script on yellowed or fading pages; and it advances through the years, with the writing becoming more shaky and infirm, but clearer against newer paper. She and Carnap arranged a tryst in Berlin: a fortnight together in a *Pension*, in rooms with an interconnecting door, thoughtfully specified by Carnap in advance in order to avoid the risk of public traipsings in corridors. From that union came a daughter. Carnap wrote long and loving letters during the pregnancy. At her birth he wrote to tell his lover to teach it to speak soon: and then he would come and acknowledge it as a human being.

## VII. THE PRIORITY DISPUTES WITH NEURATH AND WITTGENSTEIN

So even by 1927 he had begun to take the linguistic turn. But this was no hard-hearted distancing of himself from his lover and their child. He was not that kind of person. The whole corpus of his correspondence bears strong witness to the contrary. The ebullient Neurath exhorts<sup>5</sup> "Du musst stärker sein! Carnap, Carnap werde hart hart?", thinking "Du musst stärker sein! Carnap, Carnap werde hart thinking Carnap's good nature too soft for the intellectual battles that Neurath saw himself as waging in alliance with him. It was Carnap who played the go-between in the battle Neurath had with Schlick over his (Schlick's) refusal to publish a submission by Neurath in the series Schlick edited with Frank. Schlick's refusal<sup>6</sup> had been on grounds of style and scholarship. Neurath had harangued him for over an hour in a cafe, pouring out all manner of personal reproaches and social criticism. It was Carnap who intervened by persuading<sup>7</sup> Neurath to make a different submission, while at the same time defending the quality<sup>8</sup> of Neurath's work to Schlick.

This obviously put Neurath considerably in Carnap's debt, and made it difficult to take to the patrician Schlick, the father figure of the Circle, his subsequent priority battle with Carnap. That started, in characteristic style for Neurath, with an "aufgeregtes Telegramm"<sup>9</sup> to Frank from Moscow. It demanded acknowledgment from Carnap in the paper on protocol sentences, that he had written for publication alongside Neurath's in *Erkenntnis*. Carnap was Frank's co-editor of that issue of *Erkenntnis*; and Neurath felt<sup>10</sup> that he had been wronged and slighted by Carnap in that capacity, as well as in his capacities as a friend and colleague. Carnap mounted a patient, detailed and measured defence<sup>11</sup> of what he saw as conduct without any hint of the impropriety Neurath alleged. Neurath's frustrated shriek in his first letter<sup>12</sup> in reply was "Sei weniger naiv! Sei psychologischer! Sei mehr der Welt verbunden, in der Du lebst." But it is clear from the record available that Neurath never once approached Schlick about the affair; presumably because he was worried at earning a reputation for being overly combative.

Nor, for obvious reasons, does it appear that Carnap let Schlick know what had transpired with Neurath. And it was just as well. For,

three months later, in August 1932, the Wittgenstein affair broke.

Why this took place will probably never become clear. Carnap offers a good deal of historical reflection on the roots of the dispute in the letters to Schlick<sup>13</sup> that the affair occasioned. Years later he recalled having made an entry in his diary about his first meeting with Wittgenstein: and how Wittgenstein had taken a dislike to him at the start, and had mocked him for his interest in Esperanto. But the affair of 1932 was another "Prioritätsache." Wittgenstein had felt plagiarized, or not properly acknowledged, by Carnap in a piece on physicalism. (Wittgenstein took himself to be writing about physicalism—"nur nicht," as he wrote to Schlick,<sup>15</sup> "unter diesem—scheusslichen—Namen.") His complaint to Schlick was conveyed to Carnap, who defended<sup>16</sup> his conduct in the same careful, measured and reasonable way that he had employed with Neurath. This was relayed back to Wittgenstein, who then wrote<sup>17</sup> to Carnap a fey, shrill and petulant letter, which he had Schlick forward on his behalf. In this letter he ends by saying

Mein Zweck ist es nicht, die Nennung meines Namens in Ihren Schriften zu erreichen . . . ; ja ich hoffe, dass ich bald auch nicht mehr in der—wenn auch lockeren—Beziehung zum akademischen Leben stehen werde, wie zur Zeit. Aber ich empfaende es als Unrecht, Sie ueber meine Ansicht in der Sache nicht voellig zu unterrichten. Hochachtungsvoll, L.W.

Wittgenstein's complaint was that he, as allegedly the "Hauptquelle" of the ideas expressed in Carnap's piece, had not been named; although Neurath had been cited, as well as earlier publications by Carnap. (Carnap underlined the occurrence of "Hauptquelle" in his copy<sup>18</sup> of Wittgenstein's letter to Schlick, and placed an exclamation mark beside it.) Wittgenstein accused Carnap of having harboured the deliberate intention not to cite him, and to conceal "die Provenienz der Gedanken." The view that Schlick took<sup>19</sup> was that Carnap ought to have made some appropriate acknowledgement. For Schlick's embarrassed position was that Wittgenstein was a frequent summer visitor to his Circle, communicating ideas that were in long gestation before appearing in print. Wittgenstein's oral publication had lost him his claim to priority. And in-

deed in subsequent correspondence about the *Syntax* Schlick was moved of his own accord to insist<sup>20</sup> to Carnap that proper acknowledgement be made of Wittgenstein's views. But Schlick, in the original brush between the two men, also defended Carnap to Wittgenstein, maintaining that Carnap had been "reines Herzens," acting only negligently rather than fraudulently.

Carnap himself later reflected, in a piece not intended for publication or even circulation (RC 102-78-08, dated 16.11.56, entitled "Dies *nicht* im Autobiographie!"):

Ich glaube, ich war der erste, der Wittgenstein im deutschen Sprachgebiet bekannt machte. Als ich aber einmal (in "Die physikalische Sprache als universale Sprache der Wissenschaft") ihn nicht nannte, weil der physikalistische Standpunkt, den ich dort vertrat, stark von dem von W. abwich, schrieb er einen sehr indignierten Brief (30.8.32 in Prag bekommen) an mich, den er an Schlick sandte mit der Bitte, ihn mir weiter zu schicken. Bis dahin hatte ich einen hohen Respekt auch vor W.s menschlichem Charakter gehabt; aber dieser Brief war so voll von Hass, ausgedrückt in einem unglaublichen, persönlich gehässigen Ton dass ich tief schockiert war . . . Jahre später haben einige der *Studenten Wittgensteins in Cambridge* um seine Erlaubnis, Transkripte seiner Vorlesungen an Freunde und interessierte Philosophen zu schicken. Er fragte nach der Liste der Namen, und dann *billigte er alle ausser meinem*. In meinem Leben habe ich niemals auch nur etwas ähnliches erlebt wie diesen Hass gegen mich. Ich habe keine hinreichende Erklärung; die hätte wohl nur ein Psychoanalytiker geben können. (Carnap's emphases)

#### VIII. AFTER VIENNA

It is impossible to say what Schlick's view might have been, and what might have been the consequences for Carnap's career and a good deal of twentieth century philosophy subsequently, had the Neurath complaint reached him in time to colour his opinion when it came to Wittgenstein's complaint. Certainly Carnap owed a great deal to Schlick's intellectual patronage in the then highly structured

and testimonial-dependent<sup>21</sup> world of academic publishing and university promotions. But by this time Carnap was in Prague, having left as an acknowledged leader of the Positivist movement. The *Aufbau* had been published, and work on the *Syntax* was well under way. He had been editing *Erkenntnis* with Reichenbach. Various letters<sup>22</sup> to him testify to how sorely he was missed when he left. Apparently the meetings became less lively and more stilted, under Schlick's increasingly formalized chairmanship. It was this period of Circle meetings which Ayer attended, and which he describes in his autobiography.

Although Carnap did attend many meetings of the Circle after his move to Prague, he appears to have missed the very first Circle discussion, with Goedel present, of his incompleteness theorems. This was in January 1931, shortly after Carnap had left for Prague. But Carnap had already had it from the horse's mouth. His *Aufzeichnungen* contains the following entries:

VIII/1930

*Di* 26 ... 6½ 9 Cafe Reichsrat mit Feigl, Goedel, dann Waismann. Reiseplan mit Schiff nach Koenigsberg. Goedels Entdeckung: Unvollstaendigkeit des Systems der PM; Schwierigkeit des Widerspruchsfreiheitsbeweises. . . .

*Fr* 29 ... 5-9 Cafe Reichsrat. Zuerst erzaehlt mir *Goedel* von seinen Entdeckungen. Dann frage ich ihn wegen Verzicht auf verzweigten Typentheorie . . .

Minutes of meetings held shortly after Goedel's presentation show Carnap taking an active part, with his own work as a major focus for discussion by others. In June 1931 he gave three papers in succession on metaphoric. Earlier that year they had been discussing his thesis of physicalism, and had heard his "Geaenderte Auffassung gegenueber dem logischen Aufbau der Welt."

But even Carnap could not re-build the world around him. The storm clouds were gathering, and he was already looking, with the help of Nagel and Quine, for an opening in the United States. He had been there once before. A letter to Dingler dated 9 May 1923, written on a train from New York to Mexico, records this impression:

In den Ver. St. sind wir nicht lange gewesen. So haben wir zwar nur einen fluechtigen, aber doch lehrreichen Einblick getan. Wir Deutschen koennen uns kaum mehr vorstellen, was ein nicht durch den Krieg verarntes Volk alles schaffen kann."

Nagel came to visit him in Prague. There is a delightful exchange (029-05) between Nagel and the Carnaps, much of it written by Ina, and full of her dry witticisms.<sup>23</sup> Nagel writes<sup>24</sup> to confess that he had to miss a rather interesting meeting of the Circle. He was off to Genoa to make a particularly attractive rendezvous. The meeting he missed was one where Tarski and Goedel were discussing Carnap's paper on the antinomies. "That," wrote Nagel, "[is] what comes of having a private life."

Later, once back in America, Nagel wrote to suggest that much could be done to combine elements of American pragmatism with logical positivism. Carnap also reported in a letter to Schlick (029-28-16, 13 May 1934) that Lewis had written to him "Some day I hope that some member of your group may publish a paper in which some comparison may be made between your views and the pragmatism of Peirce and James and Dewey."

Another visitor to Prague was Quine. Through his assiduous help, to which his generously contributed complete record of his correspondence with Carnap bears ample testimony, Carnap was encouraged to make the move to America.

The rest, as we all know, is more recent intellectual history.

## POSTSCRIPT

I am grateful for having had the privilege of being able to talk on this topic to the colleagues gathered to celebrate the Center's 25th anniversary. It came close to carrying coals to Newcastle. Some present had been Carnap's close associates and friends. Some had edited his works posthumously. Yet others had ensured that the rich store of first editions, correspondence, unpublished notes and manuscripts, mementoes, marginalia and other memorabilia have now found a superb home in the Hillman collection. I was fortunate to gain access to this collection in March and April 1985, as a visitor to the Center. To those involved, I owe thanks for extracting gratitude in this way.

I owe special thanks to Richard Nollan, the archivist and curator of the collection. Much of what I have to say is merely colourful collage, impressionistic re-arrangement, of material whose historical and philosophical significance he had noted beforehand. The philosophical community will be in his debt for his painstaking transcription of Carnap's screeds of shorthand.

This time is ripe for *two* books on Carnap: one on the man and his life; the other on his work. (Perhaps also a third: one making available in English translation for the first time all the important early papers on which his considerable reputation was built.) But for those interested in writing on the man and his life, there are constraints of confidentiality on one's use of the collection. These are not simply matters of legally enforceable print. After immersion in the intimacies of the *Nachlass*, they become constraints of conscience. As soon as one enjoys the privilege of sharing one feels one has trespassed. Yet there are others who hold that, in the highest interests of intellectual inquiry, it should all be in the public domain. Perhaps, as the parties most concerned by disclosures pass away, this view

will prevail. In the meantime we are on middle ground; and I have tried to strike a balance. I have reported only in the most general terms such intimate information as may have shed light on my subject.

### NOTES

1. "Über die Nicht-charakterisierbarkeit der Zahlenreihemittels endlich oder abzählbar unendlich vieler Aussagen mit ausschliesslich Zahlenvariablen" (*Fundamentae Mathematicae*).
2. 029-32-50, 9 August 1924 (from Schlick); 029-32-48, 11 November 1924 (to Schlick).
3. 029-32-03, 5 August 1927.
4. 029-28-31, 5 March 1933.
5. 029-14-01, 20 December 1930.
6. Letter to Frank dated 16 July 1930 (029-30-07) with report (029-30-08).
7. Letter dated 25 July 1930 (029-14-11).
8. Letter dated 28 August 1930 (029-30-04).
9. See Frank's postcard to Carnap, dated 3 February 1932 (029-12-67). The telegram is 029-12-68.
10. 029-12-59, 10 March 1932.
11. 029-12-63, 10 February 1932; 029-12-60, 2 March 1932.
12. 029-12-62, 17 February 1932.
13. See especially 029-29-04, 28 September 1932.
14. RC 102-780-07 Über Wittgenstein, aus meinem Tagebuch 1927.20.6.
15. 102-78-02, 8 August 1932, p. 2.
16. 029-29-09, 17 July 1932, 029-29-04, 28 September 1932.
17. 102-78-03, 20 August 1932.
18. 102-78-02, 8 August 1932, p. 1.
19. This view he had first expressed in a letter dated 10 July 1932 (029-29-10), more than two months before Wittgenstein's letter(s) reached Carnap.
20. Letter dated 2 June 1934 (029-28-13).
21. See e.g. 029-32-08, 31 March 1927 (Schlick's testimonial regarding the *Aufbau*).
22. See e.g. Nagel's letter dated 5 January 1935 (029-05-16).
23. See especially 029-05-15, 23 January 1935.
24. 029-05-14, 6 March 1935.

# MOWING THE GRASS THAT'S GRUE: WHAT CARNAP SHOULD HAVE SAID TO GOODMAN

RICHARD CREATH

WE gather today to celebrate an extraordinary event, the founding of the Center for Philosophy of Science twenty-five years ago, and also, of course to celebrate the continuation of that extraordinary institution as well. I, however, am here to worry about something very ordinary indeed. Each spring, summer, and fall day, for the past twenty-five years that the Center's first Director, Adolf Grünbaum has looked out his office window toward Schenley Park, he has seen that the grass is green. Now it may be an extraordinary event to be able to see at all through the grime that would appear to be an essential feature of windows in the Cathedral of Learning, but it is completely ordinary for the grass to be green. What is also perfectly ordinary is for Professor Grünbaum to infer that he will likewise find the grass in Schenley Park to be green on the next spring, summer, or fall day that he observes it. None of this would be worth remarking on were it not for certain very well-known difficulties that were discovered by Nelson Goodman and that have become known as the new riddle of induction or more popularly as the paradox of "grue" and "green."

Robert Nozick once described Marxism as normative sociology,<sup>1</sup> i.e., the sort of study which attempts to find out what the causes of social problems *ought to be*. Well, the remarks that follow might be described as normative history of philosophy; my subtitle after all is "What Carnap Should Have Said to Goodman." Okay,