

Friday, June 25 AM 9:00-12:00, Room 140

Session 3 (room 140): **The Vienna Circle**

Alexis Bienvenu, "Objectivity and Subjectivity in Reichenbach's Theory of Probability"

Nader Vossoughian, "Otto Neurath and Josef Frank: Logical Positivism and Aesthetics of Anonymity"

Tilman Sauer, "Hans Reichenbach on Distant Parallelism Geometry"

Uljana Feest, "Science and Experience/Science of Experience: Gestalt Psychology in the *Aufbau*"

"Objectivity and Subjectivity in Reichenbach's Theory of Probability"

Alexis Bienvenu

The aim of this paper is to analyse and try to solve a problem in Hans Reichenbach's philosophy of probability as exposed in his *Theory of Probability* (1948, 2nd edition). Like in the rest of his work, Reichenbach tries to build here an epistemology where the objective and the subjective components of knowledge would be clearly distinguished, and the subjective part put aside as far as possible. Applied to the analysis of the concept of probability, this attempt leads to the defence of a "frequentist" interpretation of probability, according to which a probability function can always be understood as the limit of the relative frequency of two class of events in a (potentially infinite) series of class of events. In this way, the concept of probability is thought to be defined in a purely objective way, depending only of calculable frequencies. This justification of frequentism is so deeply rooted Reichenbach's thought that he already pleaded for it in his 1915 doctoral dissertation.

But this allegedly objectively construed concept of probability suffers a severe defect : in fact, it entails typically "subjective" elements of construction, because the limit of the relative frequency of a potentially infinite series of events can only be *guessed* or *postulated*, as really infinite series of events are never given in human experience. Reichenbach calls this guessing a "bet" or "posit". Those posits themselves have no sure ground but solely "experience", "habits", "happy guesses". So that posits can only rest on others posits. And the whole system of posits, which is the very system of science, rests ultimately on a fundamental "blind posit".

How can we still call such an interpretation of probability "objectivist" ?

My point is that we cannot call this genuine "objectivism" even if it is a sort of frequentism. I suggest in fact that Reichenbach proposes in a certain way a "subjectivist" interpretation of probability, a "subjectivist frequentism". Once translated in a subjectivist language, his theory offers indeed no more fundamental problems. I would like to show this by treating in this reformulated frame of interpretation the classical problems of the relative frequency of *single events* and of the variability of the *reference class*.

But why didn't Reichenbach expressed his theory in this way ? Why was he so definitively hostile to subjectivism? I will try to find out the reasons of his opposition to subjectivism in the intellectual context of his work, namely in the historical context of the opposition of logical empiricists to both neokantians and metaphysicians, who both symbolized for Reichenbach subjectivist failures in philosophy.

Thus, the underlying project of my paper is to go into detailed historical inquiry about Reichenbach's frequentism in order to throw a light on the philosophical problem of the interpretation of probability in general.

"Otto Neurath and Josef Frank: Logical Positivism and Aesthetics of Anonymity"
Nader Vossoughian

The central role assumed by Philipp Frank in formulating the philosophical and scientific goals of the Vienna Circle is now well documented. What is lesser known, however, is that he had a younger brother, the architect Josef Frank, who also participated in philosophical debates surrounding Logical Positivism in the late 1920s and early 1930s. In addition to being one of the co-signatories of the "Scientific World Conception: The Philosophy of the Vienna Circle," Josef Frank was among the first -- and only -- thinkers to contemplate ramifications of the "scientific world conception" for discussions about aesthetics. As I hope to illustrate, he evolved, in conjunction with the sociologist Otto Neurath, a sophisticated interpretation of Logical Positivism that helped him better understand the relationship between what built objects *say*, on the one hand, and how they *function*, on the other. In effect, Frank (and Neurath after him) grew distant from the "machine aesthetic" espoused by the German modernists. They would argue in contrast that architecture was an activity of symbol-making, that the dream of unifying form and function was ultimately doomed to fail. Following Adolf Loos, they insisted on the primacy of artisanry and local decorative traditions, rejecting the "flat-roof" aesthetic that dominated the architectural designs of the period. Moreover, they wanted speak to the aesthetic desires of the masses -- their tastes and preferences, that is -- but unlike many of their empiricist peers (Ludwig Wittgenstein, for example), Josef Frank and Otto Neurath did not show an especially strong preference for functionalist modernism.

In my view, the reason this research warrants attention is because, firstly, it explores an often neglected area in research pertaining to logical positivism; namely, the relationship between Logical Positivism and aesthetics. Why did Neurath and Josef Frank reject the dogma of the "flat-roof" aesthetic and how might this have related to their respective views on science and philosophy? Second, I also hope to call into question the commonly-held view that Logical Positivism was unapologetically "modernist" in terms of its artistic preferences. As I hope to show, Logical Positivists like Frank and Neurath actually experienced an uneasy rapport with German functionalism, particularly the strain of thought advocated by Walter Gropius and Mies van der Rohe. Third, I also hope to throw into relief, for historical purposes, the close relationship shared between Otto Neurath and Josef Frank during the 1920s and 1930s.

« Hans Reichenbach on Distant Parallelism Geometry » Tilman Sauer

A few months after publication of Reichenbach's "Philosophie der Raum-Zeit-Lehre" (1928), Einstein published a new approach toward a geometrized unified field theory of gravitation and electromagnetism. The approach was based on a geometry of distant parallelism. Here a space-time was characterized by a curvature-free connection in conjunction with a metric tensor field, both defined and investigated in terms of a dynamic tetrad field. Tetrads are orthonormal bases of the tangent spaces at each point of the four-dimensional manifold and allow for a distant comparison of tangent vectors. Einstein's approach which aroused a lot of public attention at the time was a welcome opportunity for Reichenbach to apply an axiomatic distinction between affine and metric spaces that he had expounded in an appendix to his "Philosophie der Raum-Zeit-Lehre." Reichenbach soon succeeded to give a tetrad-free characterization of distant parallelism and, in a paper published in the *Zeitschrift fuer Physik*, reinterpreted it as an affine-flat specialization of a metric space. With this reinterpretation he also implicitly criticized Einstein who had rather placed his own approach half-way between Euclidean resp. Minkowskian geometry and Weyl's infinitesimal geometry. In the paper, I will also briefly discuss Reichenbach's appendix which was not included in the widely-used English translation "The Philosophy of Space and Time" (1958) and which not only elaborated on the distinction between affine and metric spaces but also presented Reichenbach's own version of a unified theory of the gravitational and electromagnetic fields. In the appendix Reichenbach gave a rather negative assessment of the epistemological value of such a unification. His evaluation of Einstein's approach was more positive in this respect even though his reinterpretation of distant parallelism geometry was taken as a confirmation of the general conceptual considerations given in the appendix.
(tilman@einstein.caltech.edu)

“Science and Experience / Science of Experience: Gestalt Psychology in the *Aufbau*” Uljana Feest

In his *Der logische Aufbau der Welt*, Rudolf Carnap (1928) remarks that “the total impression is epistemically primary” over atomistic sense data and that the latter are an abstraction from the former (§67). He backs up this remark by appeal to the findings of the Berlin-Frankfurt school of Gestalt psychology (Wertheimer 1925, Köhler 1924), according to which we perceive “gestalten” as opposed to elements that may be supposed to comprise them. This appeal to psychology has been interpreted as underscoring Carnap’s notion of experienced structure as being similar across different subjects, thereby allowing for the objectivity of his constitutional system (Richardson 1998). Carnap goes on to treat such experiences as “basic elements” of his systems and he applies his method of quasi-analysis to them in order to construct the “quasi-parts” of basic experiences.

In my talk I show that while it is true that both Carnap and Gestalt psychologists emphasize the structured nature of experience, and while it is also true that Carnap appeals to

Gestalt psychology in order to motivate the application of his quasi-analytic method to experience, the notion of the *structure* of experience that he arrives at is quite different from that of the Gestalt psychologists he cites. I explore possible reasons for this tension by contextualizing Carnap's psychological ideas both vis-à-vis the gestalt psychological work of Wertheimer and Köhler, as well as philosophical discussions about epistemological implications of gestalt experience that had been going on well before the work of both Carnap and the Berlin-Frankfurt school of Gestalt psychology, frequently in the context of a critique of empiricism and associationism (e.g., Cornelius 1903, Gomperz 1905).

References

- Carnap, R. (1928): *Der logische Aufbau der Welt* (4th edition: Ullstein, 1979).
- Cornelius, H. (1903): *Einleitung in die Philosophie*. Leipzig: Teubner
- Gomperz, H. (1905): *Weltanschauungslehre*. Jena/Leipzig: Eugen Diederichs
- Köhler, W. (1924): "Gestaltprobleme und Anfänge einer Gestalttheorie", *Jahresbericht über die gesamte Physiologie und experimentelle Pharmakologie*, 3 (Bericht über das Jahr 1922)
- Richardson, A. (1998): *Carnap's Construction of the World. The Aufbau and the Emergence of Logical Empiricism* (Cambridge, U.K.: Cambridge University Press)
- Wertheimer, W. (1925): "Über Gestalttheorie". *Philosophische Zeitschrift für Forschung und Aussprache* 1, 39-60 (1925) (Erlangen: Verlag der philosophischen Akademie (Sonderdruck))