



Feyerabend's 'The concept of intelligibility in modern physics' (1948)

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ABSTRACT

This essay introduces the transcription and translation of Paul Feyerabend's *Der Begriff der Verständlichkeit in der modernen Physik* [The concept of intelligibility in modern physics] (1948), which is an early essay written by Paul Feyerabend in 1948 on the topic of intelligibility (*Verständlichkeit*) and visualizability (*Anschaulichkeit*) of physical theories. The existence of such essay was likely. It is listed in his bibliography as his first publication. Yet the content of the essay was unknown, as no original or copy is extant in Feyerabend's Nachlass and no known published version was available to the community—until now. The essay has both historical and philosophical interest: it is, as far as our current knowledge goes, Feyerabend's earliest extant publication. It documents Feyerabend's philosophical interest as a physicist-to-be, in what he himself called his “positivist” phase; and it gives a rare if fragmentary insight into the early discussions of the ‘Third Vienna Circle’ and, more generally, the philosophical culture of discussion in Vienna.

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1. Introduction

Der Begriff der Verständlichkeit in der modernen Physik [The concept of intelligibility in modern physics] can be reliably dated to 1948, when Feyerabend was 24 years of age.² This sets the essay in the early phase of Feyerabend's formative years in post-war Vienna (1946–1955), a time period for which Feyerabend's own published recollections were the only readily available sources. According to Feyerabend, he had been a “raving positivist”,³ who maintained that “science is the basis of knowledge; science is empirical; non-

empirical enterprises are either logic or nonsense” (Feyerabend, 1995, p. 68). This testimony has been interpreted in the secondary literature as a reference to Feyerabend's early liaison with Logical Empiricism. Preston (1997, p. 2) argues that the philosophical position expressed in Feyerabend's testimony is “the view associated with Logical Positivists [...] which flourished in Austria from the early 1920s.” Similarly, Oberheim (2006, p. 204) claims that “in Vienna in the late 1940s, [Feyerabend] started as a positivist who rejected scientific realist accounts as unjustifiable metaphysics” and that his philosophy “developed from the logical positivist climate of his university studies in Vienna in the late 1940s” (Oberheim, 2006, p. vii). This interpretation is chiefly supported by the fact that Feyerabend's early mentor and later dissertation supervisor had been Viktor Kraft, a former member of the Vienna Circle and a proponent of an original empiricist position (see Radler, 2006). Kraft offered philosophy tutorials (*Philosophische Übungen*) that Feyerabend attended each term from the very beginning of his studies and from which the Kraft Circle would eventually develop.

The essay from 1948 seems to fit well with this interpretation: it was developed in the context of the Kraft Circle, it contains an exposition of a position labeled “positivism” and I interpret the

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² Source documents from the European Forum Alpbach archive are referenced with the abbreviation EFA (I am grateful to Philippe Narval for permission to cite from these sources). Source documents from the Paul Feyerabend's Nachlass are referenced with the abbreviation PF followed by the archive's signature number (I am grateful to Brigitte Parakenings for permission to cite from these sources). Archival documents are not listed in the References section.

³ Feyerabend (1978a, p. 112, 1993, p. 275), Augustin (2010, p. 153); see also Feyerabend (1978b, p. 26).

essay not only to describe this position, but to defend it by illustrating its positive role in the historical development of physics.

Furthermore, Feyerabend's essay can help expand the interpretation of Feyerabend's self-professed positivism and build a tentative timeline of Feyerabend's formative years. As is well-known, Feyerabend enrolled at the University of Vienna in the winter term of 1946, but after an attempt at general history and history of art, he enrolled physics and astronomy courses in the following term.⁴ By July 1948, he had studied three semesters of physics and related subjects (maths and astronomy). Judging by his course record book, it is likely that by 1948 Feyerabend still aimed to become a scientist and self-identified as a training physicist. It might be useful, therefore, to understand Feyerabend's positivism as denoting an approach to epistemic aims developed mainly within physics. Building on the notion of a distinctive "philosophy of physicists" (Scheibe, 2006), Feyerabend's essay can be read as the expression of philosophical views of a young physicist-to-be, drawing from his readings of physicists and their philosophical views to develop his own. In particular, there are distinct Machian motives in it, from arguments down to terminology. This is a starting point to interpret Feyerabend's elusive testimony, stated as early as 1951, that at the beginning of his academic studies he had endorsed an "unclear and thus very dogmatic theory of elements (freely adapted from Mach)".⁵ Following this lead, Feyerabend's early philosophical background would have been motivated by the philosopher–scientist tradition still surviving in physics, less in philosophy.

1948, then, marks a decisive step in Feyerabend's eventual engagement with scientific philosophy and Logical Empiricism, as he joined the Austrian College Society in January, which only a few months later led to the establishment of the Kraft Circle, or 'Third Vienna Circle', as it has been recently dubbed by Stadler (2010; see also Kuby, 2010). The discussions about Logical Empiricism in the Kraft Circle must have been substantial, as only a few years later Feyerabend would offer a sophisticated discussion of the logical-empiricist protocol sentence debate in his dissertation (1951), putting forward his own proposal, a causal theory of basic sentences.⁶ In the same year, he also gave a talk dubbed "The dogmas of Logical Empiricism", offering a qualified critique of Logical Empiricism while defending the method of doing philosophy championed by the Vienna Circle (Feyerabend, 2010; see also Kuby, Limbeck-Lilienau, & Schorner, 2010).

Feyerabend's essay may be seen as the earliest and timely document of a transitional phase leading to his involvement with scientific philosophy, having been written only a few months into the discussions of the Kraft Circle and still echoing Feyerabend's early philosophical activity rooted in physics.

2. The Austrian College and the Third Vienna Circle

Contrary to his own testimony, Feyerabend did study philosophy from his first term.⁷ But his philosophy studies, with the possible exception of Viktor Kraft's and Karl Roretz' courses, covered mostly traditional topics in the history of philosophy and

didn't touch upon scientific philosophy and Logical Empiricism. This can be explained by ample historical evidence that by the mid-1930s the philosophical landscape in Europe had been purged from most scientifically-oriented philosophy.⁸ This has led Stadler (2010) to investigate how Feyerabend's formative years developed on the background of scientific philosophy despite a strong anti-positivist climate in the post-war period in Vienna.

The Kraft Circle is a case in point. The University's involvement in its establishment seems to be only tangential. While the continuity of the anti-positivist climate at the philosophy department and in governmental education politics went on uninterrupted, a lively scientific and cultural climate developed outside Viennese academe in the immediate years following the war. In order to assess the more dynamic activities occurring in Vienna at the time, we need to focus on the existence of several para-academic institutions, i.e. societies seeking to emulate an academic setting but not directly affiliated with the University of Vienna. The Austrian College Society (*Österreichisches College*) was the most important one as Feyerabend's involvement is concerned, but we know of several para-academic societies in which Feyerabend was active, like the Institute for Science and Art (*Institut für Wissenschaft und Kunst*) and, starting in the early 1950s, the Institute for European Social Studies (*Institut für Europäische Gegenwartskunde*, a spin-off of the Austrian College).

How did these organizations gain such a momentum in the immediate post-war situation? My working hypothesis, which will be developed elsewhere, is the early onset of a competitive climate in the nascent Cold War, which would turn Vienna into a battleground between political fronts, carried out through ongoing attempts to reach a cultural hegemony. This competition translated into several interventions: a sustained knowledge transfer from the USA to Austria–Vienna in particular—both in terms of personnel and material supplies (books, newspapers, magazines, journals) and funds pouring into scientific as well as artistic projects. On the other side, the evanescent alliance between social-democratic and communist forces (the latter backed up by the East).

Para-academic societies like the Institute for Science and Art (established 1946) and the Austrian College (established 1945) played but a small part in this competitive race, yet are of particular importance for explaining Feyerabend's engagement with scientific philosophy in post-war Vienna. Crucially, these societies offered a platform for scientific philosophy at a time when no other was available—though from very different perspectives. The Institute was a leftist organization, backed up by the KPÖ (Austrian Communist Party), where discussions in the tradition of the Vienna Circle could find a place under Walter Hollitscher, a former student of Moritz Schlick and Robert Reininger and by the time an engaged communist and member of the KPÖ. The Austrian College, on the other hand, was politically center-right, with ties to the conservative ÖVP (Austrian People's Party) and close connections to the USA. It was a politically anti-communist platform, yet championed a liberal "marketplace of ideas" ideal in which no philosophical traditions were precluded and also communist ideas could find their expression, at least intellectually, in debates. In this open-minded climate, scientific philosophy could find several venues of expression (Kuby, 2010; Schorner, 2010).

All of these societies exploited the shortcomings of traditional academic institutions to offer a place for students and academics to self-organize their studies and discussions, establish connections to international networks and form communities of interest. Among their task was the recruitment of bright minds among students—a

⁴ Cf. Feyerabend (1995, pp. 63–64) and his course record book (PF 5-5-1).

⁵ "[E]ine unklare und daher auch sehr dogmatische Elemententheorie (frei nach Mach)" ("Lebenslauf", in Feyerabend, 1951, my translation).

⁶ See Oberheim (2006, 46–70) for an excellent exposition of Feyerabend's later pragmatic theory of observation, a development of his early behavioristic theory of basic sentences.

⁷ "I had studied theater, history, mathematics, physics, and astronomy. I had never studied philosophy" (Feyerabend, 1993, p. 261). Philosophy is the only subject that he took every single term over the course of his studies. See Feyerabend's course record book (PF 5-5-1).

⁸ See exemplary studies in Dahms, 1985; Fischer & Wimmer, 1993; Heidelberger & Stadler, 2003; and Stadler & Heidelberger, 1987.

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