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Karl Sigmund, *Exact Thinking in Demented Times: The Vienna Circle and the Epic Quest for the Foundations of Science*

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It might be time for a revival of the demarcation principles between science and non-science of the Vienna circle and of Karl Popper's critical rationalism if we are to believe the title of Karl Sigmund's book *Exact Thinking in Demented Times*. Not only because he shows a deep appreciation for their thought in this book, but also because the title seems to contain a clear allusion to our own age. The book accompanied an Austrian 2015 exhibition on the Vienna Circle and the original German title of the book even suggests that these philosophers were thinking at the edge of the abyss, so what is there to learn about exact thinking in demented times from it?

What Sigmund, an accomplished evolutionary game theorist, manages to do in the book is to provide a vivid portrayal of the different characters within and around the Vienna Circle, the most famous of the many circles that made up intellectual life in Vienna during the first decades of the twentieth century. We get to know the energetic and boisterous Otto Neurath with his red manes, the enigmatic and elusive Ludwig Wittgenstein, we meet the cautious Moritz Schlick who acts as the pater familias of the group of revolutionary philosophers, and perhaps the most systematic of them all Rudolf Carnap. But also figures more closely associated with economics such as Karl Menger, the son of Carl Menger, and Oskar Morgenstern make important appearances, because Sigmund argues that their *Mathematical Colloquium* is best understood as an extension of the Vienna Circle. These philosophers, scientists and mathematicians become lively characters through the many anecdotes, relational details, and personal stories that Sigmund recounts, and which he manages to weave together in an

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incredibly smooth narrative. Not for nothing has he attracted the admiration and even the help of perhaps the most famous science author of them: Douglas Hofstadter. The book is further helped along with the wonderful pictures, which for once do not show old gray men posing in studies, but instead lively young men engaged in mountain-climbing or hikes.

But what is even more impressive than the book's style and presentation is the clarity with which Karl Sigmund manages to convey even the most complicated scientific ideas. And he has some ideas to go through: from the thermodynamic discoveries of Boltzmann, Einstein's theories of relativity, Wittgenstein's philosophy of language, as well as the philosophy of science developed within the Vienna Circle. The high point for this reviewer was when Gödel's theorem about the undecidability of certain theorems was demonstrated with three sudoku's: the first one solvable, the second one containing an internal contradiction, and the third one being undecidable because of a lack of information. The same sudoku puzzles also provide the basis for an explanation of what an algorithm is. In other words, this book contains the best in writing about science for a larger public in which the big ideas are never eschewed, but always presented with the greatest clarity and an emphasis on their importance.

The story of the Vienna Circle has many parallels with that of the Austrian School of economics. Its origins lie in the late nineteenth-century, with an important first seminar taking place in the years leading up to WWI. For the Vienna Circle this is known as the Ur-Kreis consisting of Philipp Frank, Hans Hahn and Otto Neurath who discussed the latest developments in science in particular the ideas of Albert Einstein and Ernst Mach. In Austrian economics this Ur-kreis was the seminar of Böhm-Bawerk, with Joseph Schumpeter, Ludwig von Mises, Rudolf Hilferding and Otto Bauer in attendance. But the great flourishing of both circles was during the 1920's. The Vienna Circle first continued as a seminar under the guidance of Moritz Schlick, but soon centered around a critical reading of Wittgenstein's *Tractatus Logicus-Philosophicus*. Much like the Mises circle and the Geistkreis were the flourishing intellectual centers of Austrian economics during the interwar period, in which seminal texts like Mises's *Socialism* were jointly discussed.

During the 1930's the process of disintegration of the circles begins slowly, but is definite by 1933. In the Vienna Circle Otto Neurath is the first one to be forced into exile, and in 1935 Moritz Schlick is murdered by a disgruntled former student. Similarly exiled, Hayek leaves for London in 1931 and Mises in 1933 for Geneva. After these events most of the intellectual activity in the circles fades away. Sigmund does an excellent job of sketching the social and political background against which this disintegration takes place, and the devastating effects it has on both the personal lives of these thinkers and their joint intellectual project.

The book, although it pays no explicit attention to Austrian economics, is therefore a wonderful guide to the social and intellectual milieu in which the Austrian economic circles flourished. Sigmund speaks for example of the 'oxen's tour', the journey through the more provincial universities young professors are expected to make before they can return to Vienna. And he shows the myriad ways in which intellectual and personal life were connected in Vienna. This could foster exchange, but it could also lead to confrontations and conflicts that were primarily personal as in the story of the "three prima donna's" of the Austrian School (Klausinger 2006, 623). And it could create hierarchies that stifled people's careers. It is hard not to feel sorry for Friedrich

Waismann whose attempts to write a popular summary of Wittgenstein's ideas get turned down again and again by the master. It is a story that even when told with Sigmund's characteristic Viennese irony, makes clear the pecking order between the son of one of the wealthiest industrialists of Vienna and a mere assistant without a steady income.

But the real theme of the book is the contrast between the precise analytical philosophy of the Vienna Circle, and its turbulent political and social surroundings. It is also the story of how these philosophers seemed to retreat from the world, sometimes quite literally. The picture of Kurt Gödel at the end of the book, which shows the philosopher at just 65 pounds in the garden of the Princeton Institute for Advanced Study, suggests that he has indeed all but retreated from the world. It is also this tension that the book ultimately leaves underdeveloped, as if the only natural response to the 'demented times' is to retreat into pure science and philosophy. That this need not be so, is clear from the actions of Otto Neurath, the most political member of the Circle. He is involved with the Bavarian socialist revolution just after WWI, is the driving force behind public education programs in Vienna, the one who opens a museum for visual statistics, and the driving force behind the pamphlet which launches the Vienna Circle as a social movement in favour of the scientific world-view. But it is precisely Neurath who is throughout the book treated with little sympathy if not outright disdain by Sigmund.

The overall tendency away from the 'demented times' and toward pure science is surprising, to say the least, for a group of empiricists. Hans Hahn, the philosopher, wrote on his relation to the British tradition in the following way for example: "It is surely no accident that one and the same nation gave the world both democracy, on the one hand, and the rebirth of philosophy turned to the world, on the other." It seems a connection that is logical enough, and highlights some of the Enlightenment optimism that one can find among certain members of the Vienna Circle. Science would not just generate truth, but also foster democracy and public emancipation, but one fails to find an instance in the book in which any of the members reflects on democracy. Hahn continues: "nor is it an accident that the same land that saw the beheading of a king also witnessed the execution of metaphysics. Yet the weapons of a philosophy that it turned toward the world are not the executioner's sword and axe – it is not as bloodthirsty as that – though its weapons are sharp enough," after which Sigmund discusses the popularity of Occam's razor in Vienna. But if anything it feels that the sharp blades of the razor managed to cut off the circle from the world, rather than from mere metaphysics.

That this need not have been the case is already wonderfully illustrated at the start of the book when we meet the two great minds in Viennese physical science at the end of the nineteenth century Ernst Mach and Ludwig Boltzmann. The two great physicists are both hired in Vienna as philosophers, a bold decision from the university of Vienna, one of their very few. Mach's new empiricist philosophy quickly gained great renown in Vienna, in part due to great skill in communication: he compared the theoretical concepts which represent reality with the props from the theaters, so beloved by the Viennese. To mistake them for the world itself was a great mistake. He expanded this into a more general critique of the Kantian 'thing-in-itself', which he sought to replace with a thoroughgoing empiricism centered on our sensations: objects are no more than stable patterns of sensations. And this was true for the ego as well, it was no more than

a bundle of sensations. This view would provide a great inspiration to the novelists of fin-de-siècle Vienna, who sought to dissolve the stable ego in their new impressionistic books, many of which studied the inner-life of the characters without finding a fixed point. Mach's reflection also provided a fertile ground for the various forms of subjectivist psychology that were developed in Vienna, by for example, Sigmund Freud and Alfred Adler.

Boltzmann is less convinced than Mach that everything can be reduced to sensations only, and in particular he argues in favor for the existence of atoms, which are essential in his thermodynamic theory. But he, too, becomes a public intellectual, who draws out the broader implications of his theories. What unites the two men is a belief that the new knowledge they are producing can help clear up thinking. The contrast between Mach and Boltzmann, two leading public intellectuals who filled the lecture halls with ease, and the picture in the final chapter of the book showing Morgenstern and Gödel in the garden of the institute for Advanced Study in Princeton could not have been greater.

The intellectual flourishing in Vienna has been called the 'negative enlightenment.' Scientific knowledge will not empower and enable, but instead show the limits of what we can know, and clear up thinking. It is a tendency also present in the Austrian School of Economics and it is hard not to think of Hayek's claim that: "economics developed mainly as the outcome of the investigation and refutation of successive Utopian proposals" (Hayek 1933), when Ernst Mach is quoted claiming: "Science has progressed almost more through deciding what to ignore than through deciding what to study".

A similar therapeutic and ultimately emancipatory goal was pursued by Wittgenstein. His analysis of language was to expose the hidden traps, the way in which our thinking can be misled through language, and hence the purpose of his work was therapeutic. He explicitly linked it to the psychoanalytic efforts of Freud, both: "make the subconscious conscious and thereby harmless". Hayek's obsession over the notion of 'social' in social justice and Machlup's critical ideas on weasel-words 'used to avoid commitment to a definite and clear thought' are clearly of a similar character. It is a fascinating project which reflects well what the function of philosophy and science could be in highly politicized times of interwar Vienna, or ours. It was moreover a project that could be tied to the public education programs of Neurath.

This hygienic function of analysis was, however, not what became dominant in the Vienna Circle and certainly not in Sigmund's story about the circle. This is somewhat at odds with other portrayals of the circle which have emphasized that the 'scientific worldview' was intended as a general outlook on (social) life and politics (cf. Reisch 2005). Instead what happens to the Circle in Sigmund's story, although he never quite makes this development explicit let alone criticize it, is that the Circle turns away from society and politics. The epigraph of the book quotes Hans Hahn: "If we were to open the window so that passersby could hear us, we would wind up either in jail or in the loony bin." That is certainly a reflection of the times, after all, during stable periods it is unlikely that anyone would care enough to start locking up philosophers for their views. But it is equally a reflection of the way in which the Circle turned away from the world. Again this was not true for everyone, Neurath kept seeking for forms of communication with the public most notably through the visual statistics he developed. But in Sigmund's story that is the deviant stream within the circle, not the dominant one.

Instead he focuses upon Karl Menger's attempt to develop a formal theory of ethics. A field that by Wittgenstein and others within the circle had been considered to be outside the bounds of science, values themselves were "devoid of cognitive meaning" to use Carnap's words. Menger sought in his ethical theory to allow for as many different viewpoints as possible. These viewpoints however were not ethical views or even values: "Morals will, so to speak, be identified with the groups of their […] adherents". The goal of his theory is to find the extent to which there is at least some minimal overlap between these different viewpoints, without ever engaging with the content of these viewpoints. Around the same time Moritz Schlick, who accommodated as best as he could to the new Austro-fascist government, curiously started developing his own moral theory, which seemingly completely ignoring the current political situation of the early 1930's, proclaimed that: "it is human nature to be good". Not soon after he is murdered by a disgruntled student, Johann Nelböck, who is pardoned after a year in jail, partly on the grounds that he was mentally derailed by Schlick and his philosophies. By then Neurath has gone into exile in the Netherlands, Hans Hahn has died prematurely and not long after Menger and Morgenstern set sail to the United States.

The big let-down of this book is that it never becomes clear whether things could have been different. With the focus on the big ideas, one never gets a sense of whether there was another response possible, or whether the political circumstances would have trumped any philosophical movement. Sigmund treads no further in political territory than mocking the metaphysics of Heidegger and suggesting that these easily led to support for the Nazi's, without however raising the question of whether the members of the Vienna Circle should have taken a stronger political stand. The only recorded act of opposition in the book can hardly be called that: Schlick writes a letter to Dolfuss, head of the Austro-fascist regime, urging him to resist the Nazi's. In the final part of the book Hayek's *Road to Serfdom* (1944) and Popper's *Open Society* (1945) are briefly mentioned, but never contextualized as responses to the experiences in Vienna.

This is also true at a deeper level, Sigmund makes wonderfully clear what the intellectual project of the Vienna Circle was, and how even amongst this group there was great heterogeneity in views. But whether there were other possibilities for exact thinking available never becomes clear. We hardly get a sense of Freud's theories of the subconscious, despite the fact that those would prove a great inspiration to later theorists of fascism and totalitarian politics more generally. A project that Freud already initiated in the 1930's in his book *Civilization and its Discontents* (1930). Rather than turning away from those parts of the world which could not be exactly thought through Freud sought ways in which to investigate the irrational domains of human mind and the social world.

Heidegger receives ample scorn from Sigmund and rightly so, but without acknowledgement that phenomenology was also present in many other forms in Vienna notably in the work of Alfred Schütz, who played an important role in the Austrian economic circles. His most important work from 1932 *Der sinnhafte Aufbau der sozialen Welt* (1932) was an explicit argument for the study of everyday life, and against the overemphasis on scientific and philosophical theories and discourse. One of his early essays written in the United States theorizes the social distribution of knowledge under the title *The Well-Informed Citizen* (1946), echoing themes that can be found in the

work of Neurath and of course in that of Hayek. And yet another alternative response can be found in the reformist socialism of the Austro-Marxists, exemplified by Otto Bauer, which also explicitly turned away from socialist dogma and utopianism in favour of tangible improvements in the present.

Yet the positivism of the Vienna Circle was still clearly at odds with the politics of the 1930's. As Sigmund points out Dolfuß knew extremely well that he opposed positivism as expounded by Hans Kelsen, a legal scholar associated with the Vienna Circle, who had drafted the democratic constitution of Austria after WWI. And the philosophy chairs in Vienna were important enough to come under direct political control after the rise of the Austro-fascists. The free-thinking spirit, and intellectual life more generally, were associated with Jewishness all throughout the interwar period. The response to this by most within the circle was to retreat into abstract theorizing, or sometimes nothing more than silence as is wonderfully captured in the remark by Engelmann about his great Viennese teachers: "[Karl] Kraus taught me not to write; Wittgenstein not to speak; and [Adolf] Loos, not to build." One is reminded too, of the denial by Ernst Mach of the reality of objects. For all the opposition to Kant's idealism and their desire to turn philosophy into an empirical discipline, a part of the sciences, the theories of the Vienna Circle remained awfully far removed from the social and political world around them.

This exact thinking in the idealized form practiced by the Vienna Circle was one response to their 'demented times,' but one would have wished that there was more reflection on the alternative intellectual responses to these times. This is all the more relevant to escape the idea that all Viennese thought was of one kind, a claim to which to book skirts awfully close. In the chapter on the origins Sigmund for example writes: "These young people were scientists and did not see themselves as heirs to a philosophical tradition, let alone as philosophers. But they had grown up in Mach's and Boltzmann's town: this was enough to stamp them for life." It is more fruitful to think of Vienna, especially during the interwar period, as presenting a problem-situation consisting of the end of the Habsburg Empire, the new Austro-Marxist city government and the gradual rise of fascism. Each circle and each intellectual formulated his own response to these social challenges.

In their response one finds common traits, perhaps the most single important one is the recognition of some type of knowledge problem in all the major intellectual groups. One can find it in the psychoanalysis of Freud, the explorations of decision-making under uncertainty by Morgenstern, the question of intersubjective knowledge in Schütz, and the discussion of the demarcation problem in the Vienna Circle. But these responses carried different implications about how scientific knowledge related to the world, and how it related to politics. It also carried with it different implications about how intellectuals themselves (should) relate to that world. Some of these explorations led to a kind of fatalism about the potentiality of knowledge and the intellectual, Wittgenstein certainly toyed with this conclusion when he concluded after the completion of the *Tractatus* that despite the fact that he believed he had solved all important philosophical problems: "how little had been actually achieved thereby, and this was precisely what made his treatise worthwhile".

It seems in particular that in a book about the philosophy a science a discussion about different epistemic virtues would have been in place. Quite a few are mentioned in the book: the exactness of the title, the search for certainty in much of the circle's projects, Gödel's concern with completeness, Carnap's principle of tolerance, Neurath's goal of transparency, Popper's emphasis on refutability, Mach's principle of the economy of theories and the notion of unanimity in Menger's ethical theory. But nowhere does relevance enter the discussion, and even robustness seems absent. Menger and Morgenstern attempt to deal with uncertainty, as does Hayek of course but he is never mentioned. Is Mises' praxeology part of the search for certainty? And how does Hayek's argument about the multiple sources of knowledge (both scientific and local) relate to this discussion? It is a pity that a book on thinking in demented times ultimately has little too offer on precisely that front.

To explore what thinking at the edge of the abyss means would require an exploration of both the appropriate epistemic virtues and the position of the intellectual in such times. On this front the book does not deliver, instead it gives the impression that when confronted with politics and evil, the philosopher and scientist are helpless.

References

Freud, S. (1930). *Civilization and its discontents*. London: Hogarth Press.

Hayek, F. A. (1933). The trend of economic thinking. *Economica, 40*, 121–137.

____. (1944). *The road to serfdom*. Chicago: The University of Chicago Press.

Klausinger, H. (2006). 'In the wilderness': emigration and the decline of the austrian school. *History of Political Economy, 38*, 617–664.

Popper, K. R. (1945). *The open society and its enemies, volume 1: the spell of Plato*. London: Routledge.

Reisch, G. A. (2005). *How the Cold War transformed philosophy of science: To the icy slopes of logic*. Cambridge: Cambridge University Press.

Schütz, A. (1932). Der sinnhafte Aufbau der sozialen Welt: eine Einleitung in die verstehende Soziologie. Wien: Springer.

____. (1946). The well-informed citizen: an essay on the social distribution of knowledge. *Social Research 13*, 463–78.