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But why call an academic journal *Zilsel* ? News from Edgar Zilsel

Jérôme Lamy & Arnaud Saint-Martin

Introduction

At the dawn of the 2010s, Science and Technology Studies (STS) was a well-established area of research. The conceptual and empirical ferment of the early days was long gone. The time for controversy and taking sides was also long gone. Journals dedicated to the social studies of science (such as *Social Studies of Science* or *Science, Technology & Human Value*) had become somewhat routine. In France, the *Revue d'Anthropologie des Connaissances*, founded in 2007, acclimatised STS themes by focusing mainly on sociological approaches.

It was in this contrasting landscape that we founded the journal *Zilsel*. But why on earth name it after a sociologist and historian of science from the first half of the 20th century, now all but forgotten? It seemed to us that, if we were to play a part in revitalising the STS, it was important to revive a more open conception of science studies. Edgar Zilsel worked in the fields of the history, philosophy and sociology of science. He questioned the social divisions of scientific work and included the question of techniques in his problematics. In short, the aim was to take an inclusive approach to scientific practices.

In this brief history of the *Zilsel* academic journal, we first look at Edgar Zilsel's career and his singularity. Next, we look at the various stages that led to the creation of the journal. Finally, we look at Zilsel's intellectual and political legacy - and in particular his discreet but resolute Marxist roots.

Spectrum of Zilsel

Edgar Zilsel's posterity is one of contrasts, in perfect harmony with his scientific career. Born in Austria in 1891, Zilsel studied at the University of Vienna. He wrote his philosophy thesis on large numbers (Zilsel, 1916) before writing his habilitation on the history of the notion of genius in history (Zilsel, 1991). A member of the Vienna Circle, he was a representative of its left wing. Zilsel was a Marxist, but his political and theoretical convictions were never directly apparent in his academic writings. As a Jew, Zilsel was directly threatened by the rise of Nazism in the 1930s. He therefore went into exile in the United States from 1939. With no permanent position, he managed to obtain a few research contracts and teach at several university colleges. Desperate and with no professional prospects, Zilsel committed suicide in California in 1944. His academic work consisted mainly of articles in sociology and philosophy journals. And it was in his texts published in English that he formulated a theory of the evolution of modern science based on the study of class dynamics.

Three texts stand out, published in the early 1940s, in which Zilsel empirically constructed an innovative conceptual framework. Although Zilsel did not mention Marx in these articles, his reference to the author of *Capital* was obvious. In his first text (Zilsel, 1940), devoted to Copernicus, Zilsel showed that the canon of Frombork, nourished by an abstract academic

culture, was part of the long tradition of a Pythagorean astronomy that ignored mechanics. Zilsel's second text (Zilsel 1941) focused on the magnetic work of William Harvey. According to Zilsel, the British context of iron domination (mines, mastery of manufacturing) explained Harvey's practical mastery of magnetism. But this sociological context also explains why Harvey neglected the question of measurements: mathematics was not a necessary skill for the iron industry. It was in his third text, "The Sociological Roots of Science" (Zilsel, 1942), that Zilsel proposed a solution to the emergence of experimental science. He showed that between the class of academics (who mastered mathematics and abstraction) and the class of craftsmen (who mastered the processing of matter), an engineering class was emerging (of which Galileo was the most famous representative) capable of articulating the two skills. Zilsel has thus patiently constructed a sociological and historical theory of the social classes of science.

These various proposals have had mixed fortunes. Rejected by advocates of an internalist history such as Koyré, they disappeared from historiographical debates at the dawn of the 1950s. The intellectual ferment surrounding Science and Technology Studies - some of whose leaders came from the Marxist critique of science (Lamy, Saint-Martin, 2014, 2015) - did not allow Zilsel's work to be reread. It was finally Steven Shapin who, in the early 1980s, gave Zilsel's proposals the status of genuine 'theses' (Shapin, 1981). Little by little, Zilsel was reinstated in an intellectual genealogy which placed him as a precursor (or at least as a legitimate ancestor) of the STS (Zilsel 2000, Krohn, Raven, 2000; Lynch 2001). But what do we really retain from Zilsel's theses? Not much: his historicism, his use of class defence and his analysis in terms of social power relations were no longer in vogue. Since the 1970s, STS has been dominated by highly variable forms of constructivism: from the strong programme of the Edinburgh School (encouraging us to examine validated products of knowledge in the same way as those that have not been validated), to the relativist programme of Harry Collins, through to Michel Callon and Bruno Latour's actor-network theory (which sought to dissolve all the usual categories of analysis of the social world), there was hardly any room for a historical sociology of science and technology that took account of modes of domination, power relations or the inertia of structures.

It seemed to us, however, that the creation of an academic journal entitled Zilsel could recharge the Zilselian project and give it new perspectives.

From blog to journal

In 2013, we both founded a research blog, on the French platform Hypothèses (<https://zilsel.hypotheses.org/>). We had to come up with a name for the blog. Our own research practices placed us rather on the fringes of mainstream STS movements. We had both worked on the history of astronomy, integrating (for JL) Foucauldian conceptions of heterotopias to conceive of astronomical observatories as specific scholarly spaces (Lamy, 2007) and (for ASM) developing the regimes of science proposed by Terry Shinn, to characterise a bureaucratic form of observatory administration in the Belle Epoque (Saint-Martin, 2008). We had begun a series of discussions on the relationship between history and sociology (Lamy, Saint-Martin, 2007; 2010). This fairly broad opening up to the historical sociology of science and the philosophy of concepts meant that we were quite far removed from the central debates in STS concerning the politicisation of science (Callon et al., 2001),

the ethical boundaries of scholarly work (Mamo, Fishmann, 2013) or the ontological turn in STS (Woolgar, Lezaun, 2013). It therefore seemed to us that taking inspiration from a historian and sociologist of science such as Edgar Zilsel, attentive to social regularities, forms of hierarchy as well as the historicity of concepts, was a good thing.

The science criticism movement that began during the Cold War was another important reference for the Zilsel blog, and later for the journal. From the 1960s onwards, a number of scientists, concerned about the military or ecocidal uses of science, began to question scientific practices that did not take their consequences into account: nuclear power and the chemistry of pesticides were challenged. In the United States, the magazine *Science for the People* has given rise to a critical reflection on science. The aim was not only to question the effects of science (combined with increasingly massive technologies), but also, more generally, to question the unthinkable aspects of rationality, in particular the exclusion of women from the scientific field, the effects of the power of science and the relations of domination within the learned professions. In France in the 1970s, physicist Jean-Marc Lévy-Leblond led a veritable "self-criticism of science" (Lévy-Leblond, Jaubert, 1975; Quet, 2013; Debailly, 2015). These movements were an inspiration for the blog (and then for the academic journal) because they allowed us to think about scientific activity in all its dimensions (social, ecological, economic, etc.). We conducted a long interview with Jean-Marc Lévy Leblond in 2018 (Fages et al., 2018), and *Zilsel* continues to pay close attention to the history of this critique of science (Debailly, Quet, 2017).

The blog's activity from 2013 to 2017 was based on dissatisfaction. Critical activity was increasingly reduced or neutralised in academic journals. In contrast to the harsher, more cheerful tone of the 1970s, criticism now took on the emollient allure of harmless scholasticism. A few conceptual details were discussed, and the method was glossed over, but it was rare (since the end of the Science Wars) for any kind of structured criticism to question the very principles of STS as it was being developed.

The blog was therefore an opportunity to defend critical verve. And pastiche was a well-suited means of doing this. So, to denounce the inanity of Michel Maffesoli's evasive, approximate and impressionistic sociology, we produced and succeeded in publishing in *Société* a headless text on self-service electric cars in Paris. With no fieldwork and no real object of investigation, we wrote an absurd text replicating the codes of Michel Maffesoli's sociology (Tremblay, 2014). Once the article had been duly published, we denounced the hoax on the blog (<https://zilsel.hypotheses.org/1713>).

We weren't content just to publish hoaxes: research articles, critical notes, conference proceedings - we pulled out all the stops.

The blog has found its audience. It therefore seemed appropriate to continue the adventure in the form of an academic journal that extends the plural approach to science and technology. In 2017, we published the first issue of *Zilsel*. The journal includes in-depth surveys ("Confrontations") thematic dossiers ("Frictions"), full-length interviews ("Libre échange"), exploratory articles ("Friches"), "Classiques" as well as "Critiques". The move to an academic format has enabled us to set up an editorial board and formalise open evaluation practices. In order to avoid falling into the dreaded routinisation of research, we are still trying to maintain Edgar Zilsel's epistemological and critical orientation.

Zilsel's legacy

Naming an academic journal after a historian and sociologist of science like Zilsel is no mean feat. At the very least, it signifies respect for an epistemological ambition and a willingness to play a critical role. At the same time, however, the history and sociology of science have evolved considerably since Edgar Zilsel's death. The debates in which he took part are no longer the same today.

Zilsel's Marxist perspective - which was relatively discreet - has, in fact, only been extended very discontinuously in the field of STS. In the 1980s and 1990s, several emblematic authors in the field continued to claim a Marxist anchorage (Shaffer, 1984; Restivo, 1994), but these were weak signals. Overall, the social sciences are turning away from the Marxist corpus, both out of heuristic exhaustion (in France, the Althusserian exegeses had transformed the reading of *Capital* into an obscure hermeneutic) and out of political demonetisation (the fall of the Wall having sounded the death knell of the Soviet experiment). If Marxism has been reintegrated into analyses (particularly in history and the sociology of science) since the 2000s, it is in a form that would have seemed unrecognisable to Zilsel: it is mainly environmental sociology that has revived the scattered elements of a Marxism that is now attentive to the "metabolic rupture" that capitalism imposes between the extraction of resources and the possibilities of regeneration (Foster Bellamy 1999).

It seems to us, however, that there is much more to Zilsel's legacy than the patrimonialisation of Marxist analyses. It seems to us that Zilsel's approach was much more than the academic application of theoretical schemes to historical cases.

Firstly, Zilsel based his work on a reflexivity of the categories used to designate agents or groups of agents. In his work on genius (Zilsel, 1991), he gave the notion of genius a historical dimension by studying its different meanings in Antiquity and during the Renaissance. This work has yet to be done again. And the academic journal *Zilsel*, which advocates the cross-fertilisation of disciplines around the subjects of scientific research, encourages us to maintain this focus on the historicity of concepts. From this point of view, Dominique Raynaud's work on the Anthropocene is symptomatic of the approach taken by Zilsel (Raynaud, 2018).

Secondly, Zilsel developed a social analysis of the groups who were active during the Renaissance and early modern period. This is the thrust of his thesis on the distribution of skills among the three social classes involved in the emergence of experimental science: academics steeped in theoretical knowledge; craftsmen involved in the use of practical knowledge; and engineers capable of acting as intermediaries. It's a reflection that brings into play social practices, power relations and issues of socio-epistemic legitimacy. These are recurring themes in *Zilsel*: very recently we published a dossier devoted to practical knowledge (Fages, Lamy, 2021).

Finally, there is one theme common to Zilsel and Marxist analysis, which continues to inform the social studies of science as envisaged by the journal: critical operations. The idea that the place of science and technology in society is (among other things) determined by relations

that are never given as such is not unique to Zilsel. From Adorno and Horkheimer to Bourdieu, it encompasses a vast array of epistemological positions. It is this approach to science - reflexive and critical - that constitutes Zilsel's guiding principle.

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