



A JOURNAL OF NATURE, CULTURE, HUMAN AND SOCIETY

id#: m&s.2310.02204

ARTICLE

Towards a Political Ecology of Knowledge: Reconnecting with the Legacy of Radical Science Movements

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ABSTRACT: In this essay we discuss the legacy of the 1970s French radical science movement (FRSM) and the way they influence contemporary collective inquiries and personal commitments concerning different forms of knowledge production. Among other things, The FRSM explored new ways of knowledge production, inside and outside of academic institutions. However, due to the institutionalization of those critiques and their foundational function for disciplines like STS, their legacy has gradually become forgotten. The current renewal of critiques of science since the 2000s allows for a reconnection with this particular history. We show that even if many of them were more interested in a return to an ideal autonomous science, they often also underline the fact that precariousness constitutes a condition that reveals what really counts in science and knowledge. We claim that in this way those critiques help us seriously consider the living and dead aspects of science and, consequently, how to protect or undo them. Critical approaches that consider actual asymmetries and precariousness could become the basis for a political ecology of knowledge.

KEYWORDS: French Radical Science Movements, legacy, STS, knowledge, precariousness, vulnerability, Political Ecology of Knowledge.

Introduction

In this essay, we would like to discuss a way to continue certain aspects of what we term the French radical science movement (FRSM) of the 1970s. A disclaimer first: we have chosen the term FRSM not to label different social movements, but rather in a generic sense to talk about a set of agents (scientists and workers in universities and research centers), events, ideas and texts, all of which made a selfcritique of the world of research during the 1970s. Indeed, this movement was above all characterized by an intensive production of alternative literature (Babou and Le Marec 2013). Important actors and authors of this period were brilliant young researchers, such as the physicist Jean-Marc Levy Leblond, the mathematician Alexandre Grothendieck, or the

Lalande, Antoine and Joëlle Le Marec. 2023. "Towards a Political Ecology of Knowledge: Reconnecting with the Legacy of Radical Science Movements." *Marxism & Sciences* 2(2): 43–63. <https://doi.org/10.56063/MS.2310.02204>

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- DOI: 10.56063/MS.2310.02204
- *Received:* 05.05. 2023; *Revised:* 18.07.2023; *Accepted:* 22.07.2022
- *Available online:* 05.11.2022

biologist Pierre Clément. They preferred to use their reputation to shatter the illusion of a pure science inspired by individual genius, excellence, and scientific neutrality; additionally, they harshly denounced what had until then often been hidden or forgotten: the military, industrial, and political interests behind funding, but also gender and social inequalities, domination, brutality, and precariousness in institutes and laboratories—or a lack of sensitivity, reflexivity, and political consciousness throughout scientific communities. While the eminent researchers of the 1970s can appear today as the main figures of the movement, many others (women, students, technicians, administrators, and all kinds of mental workers) also contributed to alternative press with testimonies, inquiries, and analysis about the internal life of science.

However, all these agents did not consider themselves part of a single collective movement. It was only later that researchers understood them retrospectively in terms of “*critique des sciences*.” This kind of rationalization is related to the French STS community (*Sciences, Technologies et Société*) and to science studies in general, although both are more about constructing sociological and historical standpoints about science than a radical transformation of science itself. When the FRSM almost disappeared during the 1980s, science studies developed inquiries based on questions previously discussed in a political perspective, such as feminism or practices of everyday life in the laboratory. In this way, these disciplinary studies followed up on but at the same time moved away from the perspectives of the FRSM.

Now, we would like to show in this essay how the reappropriation of that older legacy suggests new terms of a possible articulation between FRSM and institutional commitments. More precisely, we are looking for a kind of inquiry that is less concerned with conceptual performance and more sensitive to the transformative aspects of knowledge, especially for those who produce and share it from institutional sites or from their fieldwork understood as *social spaces*. In this way, we would like to focus more on the question of knowledge and find a way to characterize it not as a production, used to act on dominant or dominated subjects, but rather as a form of life with bearings on practice. In this way, knowledge can be seriously transformed or redefined from its conditions of existence and collective experiences such as precariousness, and vulnerability.

This question is all the more important to us because today most of scientific communities do not feel committed to the knowledge they produce in terms of their societal, socio-economic and ecological consequences. Indeed, they often even admit in their daily organizations an adherence to harmful reforms and management models—or what has been called “zombies” categories (Beck and Beck-Gernsheim 2002). If in the 1970s FRSM participated in the creation of editorial projects that have since become the corpus of leftwing

critiques of scientific institutions, they do not seem to have had a fundamental impact on the academic and the higher educational system. On the contrary, since the 1980s, this system has kept on organizing itself not as a *place for experimentation* based on what we learn from knowledge about science, but rather as a *place of rationalization or better optimization* of scientific production and professional training.

In the 1970s, FRSM did not only targeted the implication of science in the capitalist system or its participation to a dominant ideology. Some of these critiques also underlined the alienated state of knowledge produced within scientific institutions and their destructive aspect on living beings. Hence, in a contemporary context of ecological ravages which threaten the survival of human and non-human species, a reflection on the legacy of FRSM is for us not only necessary but vital.¹

Since we both are researchers and activists involved in STS, we feel obliged to reconnect with that history in order to reflect our commitment. Indeed, since many years, we attempted to characterize in what sense knowledge may be said to be alive or dead, or zombie—most of the time in places that are not the big science centers. Just like 1970s FRSM, we are convinced that the realm of the living does not have to be restrained to entities of nature. It also has to encompass the field of cultural productions, such as science, since their products and conditions of production have consequences on human and non-human lives.

However, this kind of reflection on knowledge seems to be largely absent from the political mobilizations in French scientific communities over the last twenty years. From collectives such as *Sauvons l'Université* in 2008 to *Facs et Labos en lutte* in 2019, movements have fought against a series of reforms designed to increase competition, standardization, and 'productivity' in the universities. Their critique, however, focused more on the neoliberal turn within scientific and academic institutions. As a result, the rise of precariousness and the suffering caused by the deterioration of working conditions have marginalized issues related to the relevance of knowledge produced within scientific

1. We do not refer here to what can be understood as anti-science movements. In this text, we study FRSM as a self critique of science, related to reflexivity and to a political vision of knowledge as a common good. However, French public policies for science has kept on trying to rank this type of critique on the side of anti-science movements since the 1980s. In France indeed, this interest of political staff aims at reaffirming a link between science and republican universalism. In this way, the so called struggle against mistrust, ignorance and ideology often has hidden the promotion of a non-critical vision of science. In 2021, Research Minister Frédérique Vidal did not hesitate to highlight the dangers of a so called "islamistic leftism" in French universities. In fact, this attack targeted gender, class, race and decolonial studies that did not match with an universalistic vision of knowledge. The French scientific community has strongly rejected this category and this attack (Vidal 2020).

institutions. From then on, the main problem of science seems to be essentially the loss of autonomy and funding. These are real problems for us, but we also must question the weakness and faults of the knowledge produced and promoted by these policies.²

By reconnecting with the history of the FRSM, we want to show that the question of legacy does not only mean accepting to be entangled in a continuum of infrastructures and relations for which we would be forced to take responsibility. Rather, it also implies reflecting on how we want to engage with a history “in a way that acts as a relay, that is, that affirms the new data and new unknowns” that emerge in a particular place and moment (Despret and Stengers 2011, 51). Consequently, the legacy of science in general and the question of ideology in science studies in particular challenges us to think about the living dimension of knowledge in relation to an awareness of vulnerability (Omodeo 2019).

In the first section, we show how the FRSM began to emphasize and to confront the issue of the living dimension of knowledge, but also how this dimension has disappeared through the institutional capture of these critiques and the rise of issues specifically linked to the neoliberal turn. In a second part, we demonstrate how the massive and global dimension of multiple experiences of precarity and forced mobilities in the academic world has influenced reflections on knowledge. In particular, we show how this can be seen as a reactivation due to a densification of situated standpoints produced by these situations of precariousness, connected to a theoretical post-dualistic turn beyond the split between nature and culture since the 1980s.

Finally, in a last part, we explain how this new context allows us to propose the frame of a political ecology of knowledge so as to discuss the ways of inheriting science and its knowledge. This framework has to be understood not only as a theoretical tool that would lead to reproducing the conditions of a non-sustainable form of knowledge, but also as a way to encourage an open and collective inquiry into how to protect what we feel as being alive and to divert what we feel as being zombified or dead in knowledge.

A Brief History of The Reception of The FRSM (1968–2023):

2. Recently the competency-based approach has gone so far as to challenge any reference of research-based knowledge in university trainings (Boutin 2004).

From A Radical Critique of Scientific Ideology to Knowledge Produced from Precariousness

Until the end of the 2000's, the history of the FRSM has largely been ignored by the official history of French science studies (Berthelot et al. 2005; Pestre 2006; Joly and Bonneuil 2013). Today, thanks to the work of researchers whose project was to demonstrate the political roots of French STS, Ph.D. theses and investigations on the movement have gradually multiplied (Quet 2009; Faury 2012; Debailly 2012; Babou and Le Marec 2013; Pessis 2014–2019). In fact, between 2004 and 2007, several seminars on these topics took place under the name “*Sciences, communication et société*,” organized by CRICS - Université Paris 7 and C2SO - ENS Lettres et Sciences humaines de Lyon. This has led to the creation of a website (<https://science-societe.fr/>), initiated by Igor Babou and Joëlle Le Marec, which has allowed the publication of documents related to the history of the FRSM and French STS.³

By way of a conceptual archaeology, Mathieu Quet showed in his 2009 thesis about *participatory science* during the 1970s that the idea of public participation in science had its origins in critical journals as well as in institutional government reports designed to counter public distrust of science. In 2012, Mélodie Faury defended her thesis which partly focuses on the history of the GERSULP, one of the very first ‘laboratories’ dedicated to the study of science in France. In the same year, sociologist Renaud Debailly also defended a thesis on the emergence of FRSM in France, focusing on the trajectories and social characteristics of the people behind them. Finally, historian Céline Pessis defended her thesis in 2019 by exploring the history of scientists’ ecological commitments from the 1940s to the 1970s. This work led her to produce a precise history of the collective *Survivre et vivre* (Pessis 2014), and it also allowed her to directly question the issue of knowledge by explaining how huge areas such as soil science emerged but had disappeared almost entirely in the 1980s.

Contemporary ecological issues and the neoliberal turn in French universities have rekindled a new interest in these movements (Abreu and Boureau 2020; Hagimont et al. 2021). Still, a lot of work remains to be done. However, in the recent academic struggles in France, there has not been an effective re-appropriation of FRSM history and legacy, a circumstance which remains somewhat of a puzzle to scholars who have been working on this topic.

3. The following academics and Ph.D. students have also actively participated to this project: Claudio Broitmann, Sarah Cordonnier, Mélodie Faury, Philippe Hert, Christiane Kapitz, Pierre Monnier, Mathieu Quet and César Carillo Trueba.

This general assessment, however, does not mean that the FRSM has totally disappeared today. Indeed, even if the contemporary movements in universities do not refer explicitly to the collectives and people who fought in the 1970s, they produce critiques about the same problems (entrepreneurial management, competition, etc.) for a new context characterized by the massive number of people in precarious employment and the seriousness of environmental emergencies. The epistemological context also changed with a break-through, following the publication of Philippe Descola's (2005) *Beyond Nature and Culture*, and a strong critical reflexivity about Northern "naturalism" as a specific ontology which is no longer considered a universal point of view.

In this way, the analysis of the living and dead aspects of the FRSM should be made according to the following criteria: 1) The material conditions of scientific institutions and 2) the different means organized by the State to enable a reflexive knowledge of science and its institutions (Pessis and Angeli Aguiton 2015).

Consequently, recent works more specifically attack new public management policies applied to scientific institutions and higher education, as well as the precariousness faced by many students and young researchers who wonder more and more if it seems worthwhile to pursue an academic career.

We claim that despite the different tensions that motivate these critiques, the recent mobilizations can be understood in continuity with the FRSM. If they keep on criticizing the working conditions and the organization of national research, which have always been part of FRSM, some of them are also motivated by a critique of standpoints and ideologies related to scientism. Despite the temptation of defending the autonomy of science, which has been damaged by neoliberal policies, recent movements continue to fulfill the idea of an exploration of knowledge outside the ideological representations of scientism. Indeed, since the 1970s, the idea of finding places and practices for science outside scientific institutions, that would not renew with their antisocial and senseless dimensions, constitutes a continuity of FRSM. Consequently, it is not our purpose here to sum up the whole history of FRSM, which has already been done by the scholars quoted above. We want more essentially to share the way by which this history keeps on motivating the exploration of what constitutes the living dimensions of knowledge.

First of all, the FRSM of course has to be seen in the context of the general contestation of May 1968 and other international radical science movements, especially in the United States and Great Britain.⁴ But the birth of FRSM can

4. As they were frequently invited to America or Great Britain for their scientific activities, Renaud Debailly underlines how radical science movements of those countries may had an influence on Jean-Marc Lévy Leblond or Alexandre Grothendieck (Debailly 2015).

also be located by relating it to moment when modern science was institutionalized, from the middle of the 19th century onwards. As explained by Bernadette Bensaude-Vincent, the development of modern science in France has been shaped by debates about how science may be a worldview or a mass culture accepted and shared by the people, while discussing how to make sure that its processes of knowledge production would not be overly transformed by its popular appropriations (Bensaude-Vincent 2003). In this way, the main issue was to discuss who has the right to practice science and to claim its authority and, more essentially, what the limits of science in society are and what legitimate knowledge actually is. Consequently, this is why most working-class activists, from socialists to anarchists, were particularly hesitant about the development of science. If it could be a source of emancipation, its automation through bourgeois scientists could also lead to the oppression and alienation of working class.

This tension continued in France following the end of the Second World War, which was the same period that the radical science movements emerged from. Following the reactions to the atomic bombs used in Hiroshima and Nagasaki, French intellectuals and scientists such as Joliot Curie joined the World Federation of Scientific Workers and the United Nations Educational, Scientific and Cultural Organization (Debailly 2015). At the time, the aim of these international organizations was to create a scientific network so as to prevent the uses of science and technologies from war and destruction of humanity and also to question the implication and the social responsibility of scientists across the world. But as the Cold War and the Lysenko Affair deeply weakened these organizations, the involved scientists' particularity was their use of specific representations of relationships between science and society. According to them, the main issue was not the discoveries that science could make, but rather the uses of science made by political institutions and corporations. Consequently, science was still presented as something pure by nature, and the duty of scientists was to make sure that their creations would not be distorted.

In this way, FRSM was precisely born at the end of the 1960s in opposition to this representation of science and society, but in a very specific context. Indeed, in France from 1945 to 1974—and as in any other Western country—funding in research and development considerably increased in the context of economical planning. After a period of post-war reconstruction, during which scientific research was not a priority, the takeover of Général De Gaulle in 1958 deeply changed research policies in France. From then on, the main goal was to ensure that France could gain its independence from the United States, more specifically in strategic fields such as nuclear power and genetics. Moreover, social sciences such as sociology also benefited from high public investments with the goal of understanding and preventing social issues from the

consequences of France's industrialization. This tendency explains their relatively poor reputation at that time, because they were perceived as sciences of social control.

But while scientific research became more and more dependent on military and economical aims of the State, the 1960s and 1970s were also characterized by a strong boom of student numbers. Indeed, from 1958 to 1968, the number of students in France increased from 180,600 to 508,100 (Debailly 2015). Consequently, governments reacted by hiring new teachers with precarious contracts and building new universities in the peripherals of main academic cities, such as Nanterre near Paris or Luminy in southern Marseille. While these new institutions allowed for new ways of experiencing knowledge by students, their relative autonomy from inner cities also brought students closer to the marginalized population living in these peripheries.⁵ This marks a change in the image of modern science in France at the end of the 1960s, which had little in common with the pre-war situation. Along with the political awareness of the time, the spatial transposition of academic and scientific institutions thus made it difficult for people who were about to be involved in FRSM to disconnect science from its social context of production.

In this way, the critique of science related to the critique of society and the state and, starting from May 68, was expressed in regular strikes in laboratories and universities as well as in public statements made by famous scientists, such as Jean-Marc Lévy-Leblond and Alexandre Grothendieck (Lévy-Leblond 1970). Grothendieck even offered his Fields' Medal to the government of North Vietnam in 1967 and then resigned in 1970 from the Institut des Hautes Études Scientifiques (IHES) after finding out that it was partially funded by the Ministry of Defense.

Above all, the FRSM was structured by a lot of DIY journals published between 1970 and 1980. Each of these journals had its own editorial policy and allowed for a structured discussion as well as a formation of collectives by way of their critique of science (Babou and Le Marec 2013). For example, the specificity of *Labo Contestation*, published between 1970 and 1973 in Lyon, was to focus on the struggles against labor's organization inside scientific laboratories, with detailed and situated descriptions of working conditions, for precarious researchers, lab assistants or secretaries, this journal authorized a kind of a free speech so as to criticize the power of lab directors and the division of labour in the production of legitimate knowledge. As another journal of this type, *Le Module enragé* (1975), the aim was also to show all the things that were necessary so as to sustain the infrastructures of Big science.

5. On the case of Nanterre, we can refer to the works of Victor Collet (Collet 2019).

In a very different style, *Survivre* (1970–1975), which then became *Survivre ... et vivre*, had a goal to elaborate an external critique of science according to its social consequences but also to imagine other ways of practicing scientific knowledge outside official institutions. According to Mathieu Quet, the journal, which also served for the organization of a collective of political ecology around Alexandre Grothendieck, was formed for ecology and against the military (Quet 2009). The journal gradually changed: they accepted the idea that laypersons could also have knowledge about science and its consequences, which introduced the possibility of an alternative knowledge on science, related to capacity of creation and wellbeing.

The feminist FRSM had also developed its own reflection about science and how to address some aspects of scientific practices which were not recognized by academic institutions (Peiffer 2000). For a long time, they had targeted the sexist and masculinist conditions of laboratories and questioned the low number of women holding a position as a scientist. They also explored the experience of being a woman in science. Perhaps more than other types of critiques, the feminist standpoints on science had to face the issue of their institutionalization. Indeed, their productions appeared as being strongly split between, on one hand, activist practices, such as in the *Mouvement de Libération des Femmes* (MLF) and its journal *Le Torchon brûle* (1970–1973) and, on the other hand, academic reflections through theoretical publications. Consequently, there appeared very few feminist critiques of science in the ephemeral journals of FRSM.

One reason for this fact may be that radical science movements of that time were predominantly composed of men, similar to the French scientific field more generally (Gardey 2005). This situation left little room for women scientists to express their own experiences in science. However, publications organized around Jean-Marc Lévy-Leblond, such as *Auto-critique de la science* and the ephemeral journal *Impascience*, enabled the expression of women's subjectivities in science so as to transform it from inside. This is what led to the creation of several theoretical journals, such as *Pénélope* (1979–1985) (Dauphin 2001), which aimed to reclaim the power of producing knowledge of women by women in different academical disciplines (history, philosophy, biology, etc.).

Largely, feminist FRSM ideas were produced outside scientific institutions, especially during the birth of ecofeminism in France, inspired by Françoise d'Eaubonne. She proposed a reflection about the embedding of science, patriarchy, State, and capitalism as being responsible of the living's destruction and the cooptation of women's body (d'Eaubonne 1974). In this way, this feminist activist claimed that the preservation of life on Earth was the duty of women, which implied the invention of other types of knowledge. But, on the opposite

of most feminist critiques, ecofeminism had faced the issue of its institutionalization much later, when the works of Françoise d'Eaubonne happened to be rediscovered in the 2010s (Cambourakis 2018).

Beginning in 1980, FRSM declined and became depoliticized. While FRSM was booming in the 1970s, the State and academic institutions had also developed their own analyses of science in society, which gradually absorbed critical perspectives of science and technology. According to Mathieu Quet, France had indeed started a technology assessment policy during the 1970s by following the discussions that occurred in the Organisation for Economic Cooperation and Development (OECD) (Quet 2009). Moreover, the technological controversies of this period favored the constitution of STS in France, then directed by the General Delegation of Scientific and Technical Research to the Prime Minister, so as to understand the consequences of science's development on society.

Those State orientations permitted the constitution of an STS field with the creation of the *Science, Technique et Société's* CNRS program in 1980, as well as the Conservatoire National des Arts et Métiers (CNAM) and the École des Mines, where Bruno Latour and Michel Callon started to frame their Actor Network Theory (ANT). Even if most French STS works of that time had kept their critical roots, their slow institutionalization had cut those reflections from social movements that contested science and technologies. The journal *Pandore*, directed by Bruno Latour from 1978 to 1983, is a good example of that transition. As the beginning of the journal was radical, it quickly became a tool for editing English-speaking science studies so as to create a new field of investigation in France (Debailly and Quet 2017). In her presentation of the digitized corpus of *Pandore* for the website *Science Société*, Sarah Cordonnier analyzes the transformation of the journal by underlining the increasing of contributions coming from social science's academics and their use as ressources for extended bibliography for the STS community (Cordonnier 2005).

From then on, the French STS field was institutionalized thanks to interdisciplinary fields encouraged by the State (Berthelot et al. 2005). In this way, Information and Communication Science, an 'interdiscipline' officially created in 1975, become a welcoming ground for a significant part of the STS community (Jurdant 1984). This was especially for scholars working on scientific popularization such as Baudouin Jurdant, Daniel Jacobi, and Suzanne de Cheveigné. But disciplinary legitimacy plays a major role in the French academic establishment, which also enabled an epistemological debate about the distance between "excellence" and radicalization of the conception of truth through the relativity of science's knowledge (Quet 2009). Indeed, the more

“political” they were perceived, the less “excellent” they appeared to be and therefore, appeared to be less legitimately part of institutions (Gingras 1995).

The disciplinarization of FRSM also took place due to a change in the State’s policy or rather, response to top-down science and technocracy starting from the presidency of François Mitterrand (1981–1995). So as to prevent the risks of “irrationalism” and “anti-science” opinions in society, successive governments tried to silence critical scientists through the creation of institutions which resolved technologies controversies and research orientations’ issues (Pessis and Angeli Aguiton 2015).

Consequently, most of the associations that perpetuated the FRSM, such as the Fondation Sciences Citoyennes initiated by the biologist Jacques Testart, had been more and more associated to institutional initiatives (Pessis and Angeli Aguiton 2015). From the end of the 1990s on, the FRSM seems to have disappeared through its recuperation by public policies. Even if this movement could be maintained and updated among a rather informal network of researchers interested in reflexivity and relevance of knowledge, the French academic context was far too busy with performance, competition, and productivity to assume transformations of the relation between science and knowledge.

For most intellectuals in social science, who found a commitment’s revival with the general strikes of 1995, science was indeed still perceived as being a source of emancipation for the working class and activists. For most of them, the issue was to find a means of spreading knowledge of social science to the public, often by ignoring ideas produced by FRSM after 1968. For instance, this led to several misunderstandings between social scientists and working-class people, as shown the famous passing of Pierre Bourdieu in the Val Fourré social housings in 1999.⁶ Moreover, the liberal turn of scientific policies had above all incited those scientists to call for a stronger autonomy of the scientific field. Consequently, the FRSM was inaudible for those new generations of researchers.

From the 2000s onward, successive neoliberal reforms of universities and scientific institutions put into question the relations between scientists and science. Indeed, since the 1997 Bologna Process, France has increasingly adapted its research policy following the idea of the economy of knowledge directed by the European Union. In 2004, Philippe Aghion and Élie Cohen’s report entitled *Éducation et croissance* called for a reform of universities and research so as to offer their services to economical innovation and the labour market. This led to several neoliberal reforms: Licence-Master-Doctorate Reform (2002), *Loi Relative à l’autonomie des universités* (2007), *Loi ORE* (2018),

6. This scene has become famous thanks to the documentary produced by Pierre Carles on Pierre Bourdieu, *La sociologie est un sport de combat* (2001).

and *Loi de Programmation de la Recherche* (2020). In this way, this structural reform broke with the ideal of a public service university and increased academic institutions' dependency from the market. It also led to a strong deterioration of working conditions, as universities faced less funding and fewer workers, even as the number of students was increasing.

In these conditions, oppositional movements against these reforms appeared divided in their reactions. In 2004, a research collective named *Sauvons la Recherche* organized to protest the diminution of State funding and the urge for scientific productivity. This movement led to the resignation of 2,000 lab directors from their administrative tasks in order to pressure the government, which finally accepted the organization of the *États généraux de la recherche* to evaluate the state of national research with scientists. But the focus on funding issues was immediately criticized by other scientist collectives, in particular by the *Collectif Oblomoff* and *Sauvons l'Université*.

The latter collective was created during the 2008 academic and student mobilizations against LRU. In opposition with the restrictive lack of funding protests expressed by *Sauvons la Recherche*, the aim of this association consisted of coordinating different universities' mobilizations between 2008 and 2009 by attempting to impart a difficult and fragile professional consciousness from students to teacher-researchers. The aim here was to defend the idea of a public service university, where knowledge would be produced for common interest and would ensure social emancipation for everyone free of any imperative toward professionalization imposed by labour market.

Unfortunately, this conception of science and universities has not been sufficient enough to be successful, since the difference of status and professional interests in universities and scientific institutions have become heterogeneous (Geay 2010). However, this idea has continued until today, with other collectives created during the LPPR protests between 2017 and 2020 such as *Rogue ESR*, *Université Ouverte* or *Facs et Labos en lutte*. But each time, the preoccupation of those collectives appears more to be a defense of a scientific autonomy rather than a questioning of the relevance of knowledge produced within those institutions.

However, this questioning sporadically has reappeared during that last twenty years. When the direction of universities started to shape security policies on campuses in order to protect them from what were considered deviant uses, a few groups of anarchist students in Nanterre decided to break down an entire wall aimed at restricting student's movement (Collet and Lalande, 2021). This action was aimed at preventing universities from becoming a simple place of consumption of knowledge and professionalization, rather than places of life open to everyone and where knowledge could be experienced freely outside of classrooms. In the 2008–2009 and 2020 protests,

Marxist standpoints were expressed to criticize the ideal of an autonomous university separated from society. In this way, they maintained the fact to consider universities within the capitalist system, that is to say as an instrument which above all aims at reproducing the labour force for the expectations of the labour market (Barot 2010; Brick and Albert 2020).

At the end, one of the few collectives which seems to have continued the spirit of the FRSM, by referring explicitly to them, is the *Collectif Oblomoff*. However, we must be cautious, as many informal active networks have not sought to gain visibility but wish to protect their specificity. It is therefore difficult to talk about them, which also runs the risk of perpetuating a distorted image of the state of FRSM.

Collectif Oblomoff was led by scientists of Grenoble, and this informal group maintained a general critique of scientism and was particularly critical of their colleagues who complained about the lack of funding and the loss of their supposed autonomy (Oblomoff 2009). For this collective, the scientific community also had to face the social and ecological consequences of their productions. This is why the collective ironically chose the name of Oblomoff, so as to oppose themselves to the vision of one scientist that could simply retreat from the world so as to think better. In opposition, this group called for an active commitment of scientists in their own professional field, by disturbing scientific events and summits, but also by involving themselves in what constitutes their everyday social environment. However, if Collectif Oblomoff also called for a non-institutional practice of knowledge, as *Survivre ... et vivre* in the 1970s, this perspective also appears as being quite unexplored.⁷

The 2010s were characterized by the development of a perspective about precariousness, led by young scholars and PhD students who increasingly faced short term contracts or auto-funded conditions of research (AG des Précaires de l'ESR IDF 2020). As they developed the means to fight against precarious conditions in universities, sometimes by linking themselves to the 1970s movements, these different collectives also investigated the condition of pre-cariousness and how it affects practices of knowledge. If most of those reflections concluded that precarious workers could not constitute a subject of emancipation—because of the many social differences separating people who in this category—they also enabled a discussion about the meaning of carrying on research and teachings within institutions that had become insensitive to scientists and the public.

At this point, we would like to propose a gradual reconsideration of a perspective that links critiques of capitalism and struggles in universities as

7. However, we may quote the activity of a scientific network in science studies that have actively discussed the conditions and the effects of a reflexive condition, a fidelity to inquiries' trajectories and an attention to institutional edges (Faury and Le Marec 2020).

threatened public services. Indeed, the difference between universities and many other public institutions hit by competition, adaptation, and precariousness is their specific relation to science and knowledge. Precariousness has been denounced in research institutions, as it is also denounced in culture, health, and educational institutions: workers, doctors, researchers, and teachers are fighting for security. But recently, the perspective has changed, starting from the observation that precariousness—which of course is undesirable for everyone—is a structural condition, not an accidental one. It is the comfortable position of the fraction of researchers and teachers benefiting from security (political, financial and social) that is an exception.

Inheriting 1970s FRSM From Precarious Places: How to Join a New Theoretical Corpus with The Reclaiming of Precariousness Conditions

The 2010s are characterized by the boom of works and reflections on knowledge and situations of vulnerability. Those reflections were led in the name of very different stakes, but which joined transformations within epistemological turns and social struggles. Without exhaustivity, we may report the following phenomena.

Some issues that may have been considered as social processes only studied remotely by researchers happened to be in the same time objects of research and realities directly lived individually as collectively. In France, the end of long-term scientific employment perspectives has been for a long time hidden by a very meritocratic conception of academic career and the idea of a natural condition of precariousness of young people and young scholars (Beaud and al. 2006; Moureau 2007).⁸ But this also led a part of scientific communities to endure the phenomenon of precariousness. From then on, scholars had to face the fact of experiencing the academic world from precarious conditions, but without being able to produce legitimate knowledge about their own experience of precariousness because they “judge and be judged” (López Alós 2019; Le Marec and du Plessis 2020). But on the other hand, they also had to face the fact of being considered as a scientific object of investigation by people non affected by precarious conditions, but who consequently were not suspected of being “judge and be judged.”

This is how a field of perspectives emerged to claim the necessity of a new frame so as to share a knowledge on society thought from structural and precarious conditions. For instance, a link was operated between the gathering of

8. This ambiguous position of intellectuals was already underlined in the work of Pierre Bourdieu (Bourdieu 1979).

political discussions related to vulnerable living situations and a new orientations of science studies that contested standpoints of unconcerned scholars about multiple forms of domination (Harding 1986; 1995; Smith 2005). This led to a critique of objectivity and neutrality in science, which is now definitely integrated to an unequal social operation that reproduces colonial relations. We now know the way women in a situation of scientific subalternity have initiated a specific type of investigative practice that is separate from traditional norms and methods in several disciplines. For instance, Jane Goodall, a student of Louis Leakey, has produced knowledge of chimpanzees by having a direct interindividual relationship with them. This experience led her to produce a critique of knowledge of animals produced apart from any personal interaction with animals, as well as to invalidate a type of Great Divide that has systematically downplayed the value of experiential knowledge.

In a similar way, Carole Gilligan, Lawrence Kohlberg's assistant, has produced a critical knowledge on gendered characteristics of psychological investigation protocols and also framed a care epistemology and ethic based on the integration of women's ordinary perspective and action to the political functioning of societies (Gilligan 1982). This is also how Silvia Rivera Cusicanqui, a Bolivian anthropologist, has for her part analyzed scientific discourses produced by Northern researchers about indigenous people of the Americas as a production that masked indigenous perspectives more than it could explain it (Rivera 2018).

In this way, claiming only for material means, times and more scientific workers inside laboratories and scientific institutions now appears as a contingent construction which reproduces ignorance about what makes it possible and also invisibilizes ways of knowing and living. Indeed, it is a large part of scientific knowledge that appears situated within a model of rationalization which relies less on an ethic of reason than on an insensitivity of what may be felt and known in other conditions. But another part of social science has developed the epistemological recognition of multiple knowledges produced from situated experiences. This enterprise has relied on a critical redefinition of objectivity and a reappropriation of inquiry, conceived not as a way to extract data for later analysis, but rather as a practice that enables oneself to participate in other spheres of knowledge questioning, transmission, and protection.

The intersection of feminist approaches, the ethic of care, and pragmatism has contributed to the development and legitimation of a theoretical framework which does not make generalities about concepts or models, but rather by relinking inquiries and situated experiences (Seifried 1996; Laugier, 2013). In this way, a committed position leads social science to revisit their own stories and investigations and also to think about other practices, sociabilities,

and publications. Finally, the recognition of the epistemological aspect of the pre-carious condition is one perspective that currently inspires philosophers and an international community of researchers who chose to work on and from multiples precarious conditions (exile, unemployment, political and economic insecurity, etc.).

We claim that there are now four principles that are being assembled so as to join epistemological evolutions in social science with practices and social struggles related to subaltern conditions. The first one is the questioning of the critic. Indeed, the critic does not have to be only considered as a simple production of theoretical utterances. If critical theory is essential and has fed decades of social science investigations, the reduction to its theoretical aspects appears to be insufficient. Indeed, this condition enables the critic to respond to intellectual and academic stakes, but it cannot guarantee a political transformation even for those who produce it: how many radical analyses are produced by people who benefitted from that production and maintained them in a position of domination? From then on, the critic is dependent on approaches which maintain the emancipative aspect of knowledge for those who produce them.

The second one is related to the experience of inquiry which is not reduced to technical operations of materials' extractions on "fieldworks." Indeed, inquiry has to be understood as a practice of attention and as a way of being available for unexpected meetings which are necessary for the development of emancipatory knowledge' practices. Inquiry is not the privilege of social science, even if it may constitute itself around it. Indeed, it appears that it has been above all investigators or collectives in situation of subalternity who have had an interest to think an inquiry from testimonies from places that were excluded from what really counted for "normal" science. Thirdly, the critiques of hierarchies and priorities made by funders, who based their decision on a confusion between social demand and economic interests, have enabled a reflexive attention to the ways by which an ignorance can be produced and maintained in the field of official scientific research. This has encouraged the development of knowledge relationships that are also ways of experimenting with connections to the other and to operate the responsibility of what we produce.

From then on, there is a link between knowledge and social forms of life. Even if social movements use numerous debates and references that come from universities, the articulation between knowledge and forms of life on which we would like to insist is different. Indeed, it is more about the development of multiples initiatives by people who feel personally concerned with the transformative aspect of knowledge approaches in which they are en-

gaged. Moreover, this commitment above all happens in an in-between of scientific institutions and social environments which overflow and sustain them as fieldworks but also alternative places, etc. So as to illustrate these points, we can develop two specific examples by many others.

The first one is about Turkish women teachers fired and evicted after 2016 for having signed a petition for peace and who are now facing a situation of serious precariousness in multiple European countries (Çığ 2020; Legrand 2018). We know them because they are active members of the network “Endangered humanities.” Nowadays, they can benefit from postdoctoral and short-term contracts with universities, but some of them do not have the opportunity to occupy stable scientific jobs. During one of Hope and Solidarity’s workshops organized by Bayreuth University, some of them have clearly pointed out the definitive loss of a scientific job, and so the obligation to have another one, did not mean that they considered themselves to no longer be teachers and researchers.

Indeed, it is thanks to parallel networks (online universities, cultural cafes, informal intellectual networks, etc.) that they could maintain a demanding approach by a will to defend emancipatory knowledge. But this painful exercise also opposes to the logics of Northern universities which are embedded in races for international rankings, and which do not feel concern about their own bureaucratized function and competitiveness. In this way, the existence of such a network that gather precarious researchers and full employed scholars has in return some effects on the ways of practicing research, as it enables them to change research priorities and sociabilities.

Another example is the Laboratoire Écologique Zéro Déchet (LEO), an activist squat located in Pantin since 2019, on the periphery of Paris. Recently, the collective has had to face an eviction order and is struggling to preserve this place that has enabled the construction of a community of knowledge and living between local associations, academics, and activists (Babou 2023). By using the word “laboratory,” the LEO chose to focus on the issues about knowledge and experimentations in a working-class and urban political ecology context. In this way, the LEO is an anti-capitalist place that refuses public and private funding but is also a mix between different kinds of knowledge. Indeed, it is both a place where one can come and learn techniques of repairing or recycling and also a place to learn about ordinary uses of the law. The presence of refugee mothers has also enabled them to find a place to create knowledge about mothering and children. But the LEO is also a place for students and academics who want to change their life prospects, which leads to the organization of meetings and workshops with the space. In this way, everything that happens is one way or another making inquiry from what one has

to know in conditions of precariousness and risks as well as of experimentation and sharing. For some academics, the LEO is consequently a home of questioning and creation about forms of life which reveal themselves to be richer than classical academic investigations. Indeed, for them, those types of inquiries cannot allow anymore a scientific, ethical and political coherence.

By exploring these examples, we wanted to characterize a movement where the inheritance of FRSM is being developed between scientific institutions and peripheral places in order to reclaim conditions of precariousness as a legitimate position of knowledge. In return, this gap makes it possible to show another way to speak about professional research places which appear also as being situated and limited but crossed by so many dependencies that they cannot claim for a global point of view. From then on, the prism of precariousness has the particularity of putting knowledge concerns not only in domination relationships, but also as an ontological opening toward the recognition of the irreducible character of vulnerabilities and precariousness.

Conclusion: Towards a Political Ecology of Knowledge?

To conclude, we would like to suggest a link between vulnerability, precariousness, and vitality of knowledge. In their last publication, *Héritage et fermeture*, Emmanuel Bonnet, Diego Landivar and Alexandre Monnin discuss the Capitalocene and the necessity of inheriting the weight of countless objects, technologies, and infrastructures that are described as being “zombified” (Bonnet and al. 2021).

We agree with the idea of exploring this legacy, but we also think that we have to correctly identify what constitutes a dead process and distinguishes it from what is alive. Indeed, the meaning of “inheriting” is very different from only preserving and keeping what we inherit so as to share it in our turn. Inheriting is more about identifying conditions of vitality and what is dead or zombified. In this way, according to us, precariousness and vulnerability are conditions that reflect the quality of what is alive. If science keeps on maintaining institutional framings that separate knowledge from living, they condemn themselves to evacuate policy out of experience. Moreover, they also condemn themselves to only discuss ontologies without experiencing the way by which those ontologies can affect them.

This why Mario Blaser’s works invite readers to consider academic structures that guarantee the selection and the handover of what is scientific, are finally and essentially more logistical infrastructures that follow a deadly capitalist policy (Blaser 2019). We make the hypothesis that one theoretical frame is incomplete and condemned if it is not felt apart from its disapproval and its dependency on situations that can be experienced in relation with political

stakes of protection and recognition of what is experienced and shared with other living beings.

In the end, we can raise the question of knowledge as forms of life and think about the legacy of FRSM (Laugier 2015). With who and in which places and moments are we really questioning what is happening to us? Where and when are we discussing it in collectives that are not limited to the community of fellow academics charged to produce texts, but rather extended to everyone who investigates, experiences, and put into life concepts and stories from their own experiences? We claim the idea of a political ecology of knowledge which does not only consist in describing and producing a knowledge of interdependencies between heterogenous elements that compose science (Lalande and Le Marec 2022). Instead, it relies on the principle of learning how people, places, or infrastructures of science may interact with each other and become dependent on the other. In this way, perhaps collective inquiry would lead us to learn what in our knowledge appears alive, dead, or zombified, and how to treat it with responseability (Haraway 2016).

Acknowledgement

We would like to acknowledge the help of Jarek Paul Ervin and Sascha Freyberg with the English revisions and thank them for their propositions.

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