



HAL
open science

Science and Anarchy: the Black Flag of Reason

Jérôme Lamy, Sébastien Plutniak, Christopher Donohue

► **To cite this version:**

Jérôme Lamy, Sébastien Plutniak, Christopher Donohue. Science and Anarchy: the Black Flag of Reason. Zilsel: science, technique, société, 2023, Sciences et anarchisme: le drapeau noir de la raison, 11 (2), 10.3917/zil.011.0155 . hal-03998368

HAL Id: hal-03998368

<https://hal.science/hal-03998368v1>

Submitted on 19 Jan 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

Science and Anarchy: the Black Flag of Reason*

Jérôme Lamy¹  et Sébastien Plutniak²⁻³ 

1. CNRS, CESSP, EHESS, Paris, France
2. Centre Émile Durkheim, Bordeaux, France
3. TRACES, Toulouse, France

[Author version of : Jérôme Lamy and Sébastien Plutniak [2022], “Science and Anarchy: the Black Flag of Reason,” trans. by Christopher Donohue, *Zilsel. Science, technique, société*, 11: *Sciences et anarchisme: le drapeau noir de la raison*, ed. by Jérôme Lamy and Sébastien Plutniak, DOI: [10.3917/zil.011.0155](https://doi.org/10.3917/zil.011.0155).]

Contents

- 1 [Anarchist scholars](#)
- 2 [A Feyerabendian Cul-de-Sac?](#)
- 3 [Anarchist reflexivities](#)

Understanding the relationship between science and anarchy may seem counter intuitive. What links can there be between scientific research, its specific requirements, the relative autonomy of its field, its procedures for verifying and administering evidence, and a political doctrine of emancipation which has not hesitated, in its history, to challenge attempts to shape intellectual and social orders, without excluding recourse to violent action? The philosophical, intellectual, and ethical field between anarchy and science turns out to be more overlapping than expected. Considered from an emancipatory political perspective, anarchism comprises a set of values covered by and – coherent within – the scientific ethos: free association, the free circulation of ideas, and the community of critics. They are, to take only a few examples, shared by scholarly activity and anarchistic commitment. It would be showing limited ambition, however, to stick only to this consanguinity of principles.

This collection by *Zilsel*, therefore aims to identify the concrete junctions between scientific and anarchist practices. The use of the history and

*We thank Isabelle Bruno and Arnaud Saint-Martin for their remarks and comments on earlier versions of this text. Translated into English by Christopher Donohue.

sociology of science allows us to explore the multitude of pairings and connections between a radical emancipatory political expectation, and the rational ways of knowing and understanding the world, as proposed by scientific inquiry. Two complementary approaches to the links between science and anarchy are explored. On the one hand, there is a long history of anarchist commitments by scholars: it is then a question of specifying the main lines and revealing the most salient features. On the other hand, an increasingly abundant reflexive historiography has developed on the relationship between science and anarchism, studying the incorporation of libertarian stakes or imperatives into the very ordinariness of science: the goal, from these perspectives, is to grasp the contours of these proclaimed epistemic positions. In this introduction, we will propose to demarcate these two plans of analysis, which the studies brought together in this collection illustrate and document.

1 Anarchist scholars

Until its condensation or convergence into an emancipatory political movement in the 19th century, anarchism above all aroused the fear of widespread or universal chaos. In the Encyclopedia (*Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*), the term refers to “a disorder in a State, which consists in the fact that no one has enough authority to command & enforce the laws, & that consequently the people behave as they wish, without subordination & without police.” (Diderot and D’Alembert 1751, p. 407) Little by little, by the end of the 18th century, anarchy ceased to mean only a general disintegration of modes of government or a political regime of violence. From Jacques Roux (1752–1794), the so-called “red priest”, to the Englishman William Godwin (1756–1836), criticisms of the authoritarian tendencies that can arise at the very heart of the revolutionary momentum develop, assigning a new meaning to the idea of anarchism. Throughout the 19th century, anarchism became an epistemological resource. And because of this transformation, much more than any other position on the political spectrum, anarchist commitment has been the subject of a conscious and professed integration into the very principles of learned and erudite activity.

From the formation of the international anarchist, within the International Workingman’s Association (IWA), in particular, the relationship between anarchism and scientific practice took the form of an essential tension which confronted, on the one hand, a critical approach to scientific disciplines—promoting a kind of “indiscipline” (Dacheux 2013) against disciplinary boundaries—and, on the other hand, specific anchorages in scientific disciplines. Thus from the second half of the 19th century, the natural sciences and geography constituted the privileged fulcrum, or gathering of forces, of an anarchist scholarly practice, conceived and envisaged as such. The intellectual trajectories of Élisée Reclus and his Russian counterpart Pyotr A. Kropotkin illustrate, on this point, the conjunction between the rational exploration of the world and anarchistic political commitment. The

geographer Reclus is known for his encyclopedic work (the nineteen volumes of his *New Universal Geography*, published between 1876 and 1894 as well as the six volumes of *The Earth and Its Inhabitants*, published from 1905 to 1908; counting as well his numerous travel guides) as well as for his anarchist commitment which led him to take part in the struggles of the Paris Commune before going into exile. However, as noted by Richard Lafaille, Reclus does not systematically articulate the connection between his scientific practice as a geographer and his political commitments as an anarchist: “[...] if there is indeed, in the *New Universal Geography*, an anarchist layer, this stratum certainly not the most important and visible one of the texts’ and is quite far down.” (Lafaille 1989). It is only in *The Earth and Its Inhabitants* that, “Reclus’ anarchist convictions truly surface.” (Lafaille 1989). In the preface to the first volume, the geographer gives a political cast to his work: “The “class struggle”, the search for equilibrium, and the sovereign decision of the individual, such are the three orders of facts revealed to us by the study of social geography [...]” (Reclus 1905, p. iv). Reclus pointedly links the quest for a harmonious social order between individuals and with nature with his labors exploring the world.

The geographer, geologist and anarchist theoretician Pyotr Kropotkin went further. He not only conceptualized the relationship between science and anarchy (Kropotkin 1913) but, above all, worked to unite anarchist values and the harmonization of Darwinism to Lamarckism (Garcia 2015; Girón 2003). This naturalistic vein has never ceased to animate research. Even today, the links between the theory of human and/or animal evolution and anarchism are the subject of extensive investigations (Bettinger 2015). The article by historian Florian Mathieu, in this collection, “From celestial harmony to social harmony: astronomy in the service of the anarchist cause (1880–1939)”, mines this fissure.

These first motions, aimed at making anarchist resources points of departure for understanding and theorizing observed phenomena, were organized at a very specific moment in the history of science in the West: during the 19th century, while calls to the autonomy of science are multiplying, encouraging reflection on the concrete methods of preserving scholarly spaces independent of all external constraints, whether political, economic or cultural—in spite of the fact that this autonomy remains only a horizon of expectation (Carnino 2015; Fages 2018; Chauveau 2014). It is precisely within this setting that forms of anarchist practice and ethics have emerged within scientific disciplines (Pelletier 2018; Ferretti 2017; Roslak 1991). Moreover, scientists engaged in more marginal and less academic subjects, sometimes without explicit connections to anarchist thought, also contributed to the development of anarchist-type forms of organization, as was the case with the mathematicians Émile Lemoine (Goldstein 2020) and Charles-Ange Laisant (Lamandé 2011).

The diversity of anarchist practices as well as the political, editorial and cultural vitality of anarchism between the end of the 19th century and the beginning of the 20th century bring forth scholarly connotations that are more popular than solely academic undertakings. The new field of the pop-

ularization of knowledge allows the blossoming of initiatives centered on an anarchistic approach to knowledge: Frédéric Stackelberg, an amateur astronomer and anarchist worked to promote an emancipated practice of science (Mathieu 2020); Louise Michel labored as an astronomer—as Florian Mathieu reminds us—then as a botanist during her Polynesian exile (Lamy and Fages 2021); Ernest Girault interrogated, from the anarchist perspective, the links between science and nature in conferences open to the greatest number... This effervescence is found in anarchist educational proposals which, consistently between the end of the 19th century and the beginning of the 20th century, attempt to promote an apprenticeship of academic emancipation (Buttier 2021). Célestin Freinet and Paulo Freire both went on to develop this educational imperative (De Cock and Pereira 2019).

Gradually, however, and in spite of the experience of Spanish anarchism, anarchism as an emancipatory doctrine was contested by the communistic ideals promoted by the USSR. The efforts of Soviet scholars to develop an original scientific outlook then occluded those of anarchists. The different varieties of Marxism largely occupied the intellectual arena: in 1931 at the Second International Congress of the History of Science and Technology in London it was the Marxist theses of Nikolai Bukharin, and the physicist and historian of science Boris Hessen, that sparked interest (Hessen 2006); similarly, as Canadian archaeologist Bill Angelbeck underscores in his contribution to this collection, the preponderance of Marxist perspectives in English-speaking archeology has long suspended any inquiry into alternative anarchist perspectives.

2 A Feyerabendian Cul-de-Sac?

It was only by the graces of the protest movements of the 1960s and 1970s that anarchism became once more a significant viewpoint informing scientific practice. The publication in 1975 of Paul Feyerabend's *Against Method: Outline of an Anarchistic Theory of Knowledge* constituted a major advance in the history of the relationship between science and anarchism.

Feyerabend's anarchist position must be linked to the philosophical substratum on which he evolved from the 1950s to the 1970s, and especially the defense of a rationalist approach¹. Feyerabend remained, in many ways, a student of Karl Popper. He showed both a certain distance towards the master, and at the same time a rather clear criticism of his theses—in particular that of falsification, to which long developments of *Against Method* (Feyerabend 1993, pp. 147-158) are devoted. In his memoirs, entitled *Killing Time*, Feyerabend acknowledged that “Popper's ideas were very seductive” and that he had “fallen for them”; but he certainly did not want to confer on “falsificationism” the character of a “sacrament” (Feyerabend 1995, p. 97). In the 1960s, Feyerabend was in contact with another student of Popper, Joseph Agassi. Having considered him as a “friend, in a way” (Feyerabend 1995, p. 97), he maintained a philosophical relationship with him of strong criti-

¹We thank Christopher Donohue for prompting us to write this paragraph.

cal intensity. Agassi published a long and fierce review of *Against Method*, which he began by asking, “How do you read a book that extols lies?” (Agassi 1976, p. 165).

However, the main motivation for Feyerabend to write *Against Method* was his friendly but permanent opposition to the philosopher Imre Lakatos, who died suddenly in 1974. The book opens with an exergue explaining their desire to stage their debates:

This essay is the first part of a book on rationalism that was to be written by Imre Lakatos and myself. I was to attack the rationalist position, while Imre was to defend it, making mincemeat of me in the process. (Lakatos et al. 1999, p. 119.)

Feyerabend’s purportedly anarchist position must therefore be reinscribed in this context of opposition to Popperian-inspired philosophy.

In *Against Method*, Feyerabend held that “Science is essentially an anarchic enterprise” (Feyerabend 1993, p. 5). What Feyerabend considers to be an anarchist position consists in pointing out the impossibility of ascertaining (lit. “fitting”) in advance the most efficient methods to obtain scientifically valid results.

It is clear, then, that the idea of a fixed method, or of a fixed theory of rationality, rests on too naive a view of man and his social surroundings. To those who look at the rich material provided by history, and who are not intent on impoverishing it in order to please their lower instincts, their craving for intellectual security in the form of clarity, precision, “objectivity”, “truth”, it will become clear that there is only one principle that can be defended under all circumstances and in all stages of human development. It is the principle: anything goes. (Feyerabend 1993, pp. 18-19.)

Borrowing nothing (or almost nothing) from the emancipatory anarchist tradition, Feyerabend recognizes that his anarchism is more of a “Dadaism” which allows him to remain “utterly unimpressed by any serious enterprise” (Lakatos et al. 1999, p. 294). The philosopher’s enterprise is less libertarian than iconoclastic, in the sense that it aims to smash the most revered philosophical references.

Over the past few decades, however, this book has played a central role in popularizing anarchist perspectives within academia, far beyond only those readers in the history and philosophy of science. However, it has equally saturated and polarized the discussion of the connections between anarchism and scientific practices (van Strien 2020). The book has also had the effect of framing the debate from an epistemological point of view, rather than opening it up to sociological, political, educational, or practice-oriented approaches. Feyerabend’s shifting, and often quite irreverent and jocular, polemical positions contributed to this polarization. The book is now the subject of a careful reading around very idea of epistemological anarchism.

Feyerabend articulated a radical epistemological relativism, which undoubtedly contributed to the elision of an anarchist perspective in science with the refusal to mobilize rationality or objectivity, thus confounding Pyrrhonian skepticism with anarchism. Paradoxically enough, Feyerabend's approach opposed the "classical" anarchist view in which skepticism towards authority does not imply a rejection of science, even if criticism of contemporary technoscience is a powerful agent of anarchist mobilization (Oblomoff 2009). In this collection, the Canadian philosopher Jamie Shaw thus returns to the political jumbling achieved by Feyerabend, between intense anarchistic expectancy and much more iconoclastic, if politically ambiguous, positions.

3 Anarchist reflexivities

In a way, the lack of rigor with which Feyerabend referred to anarchism² left the path open for a more reflexive analysis of the links between science and anarchism. Since the end of the 1960s, anarchist programs have arisen which are no longer content to affirm a general position of agreement or alignment between scientific practices and anti-authoritarian and emancipatory principles³, but which aim to clarify the methods of proper investigation and delineation of a specific field of research, that of anarchist studies.

G rard Gilles proposed, at the end of the 1960s, in two articles for *Anarchist Studies*, an ambitious redefinition of the very object of anthropology: the human being. He underscored that he defined "the individual as an existential structure of the relationship between the body and the world, a structure that gives meaning and structure of structures [...]" (Gilles 1967, p. 15). The anarchist approach—which considers equally the effects of power as much as emancipatory ambition—aims to "question the knowledge that we have or do not have of the meaning of a situation for-itself, and try to characterize that structure" (Gilles 1967, p. 15). The anthropological project is based here on an anarchist reorganization of the object of inquiry. Other perspectives have privileged research methods shaped by anarchist imperatives. This is particularly the case of the American historian and anarchist Theodore Roszak who, in 1974, contemplated a Gnostic approach to knowing:

In the broadest sense, gnosis is augmentative knowledge, in contrast to the reductive knowledge characteristic of the sciences. It is a hospitality of the mind that allows the object of study to expand itself and become as much as it might become, with no attempt to restrict or delimit. (Roszak 1974, p. 23.)

²For a defense of epistemological anarchism see, Malolo Dissak  2001.

³It should be noted, however, that some of the most individualistic versions of anarchism have sometimes given rise to reactionary approaches. For example, at the end of the 19th century and in the 20th century, certain anarchists supported eugenics (this was the case of Paul Robin). Today, there are occasional convergences between the more advanced forms of tech-savvy capitalism and anarchism. All supposedly anarchist positions in the scientific field are not emancipatory—far from it!

The advocates of the integration of anarchist principles into scientific practices emphasize is the widening of possibility allowed by the contestation of all forms of authority—in particular those found in texts. Nevertheless, the *a priori* opposition between the administration of proof and the rejection of authority is only apparent and a bit shaky. This is the case as first of all, the authority of a scientific statement is not comparable to this “variety of power which ensures the obedience of subordinates” (Mendel 2003, p. 26) since the latter is reviewable and able to be questioned. Simon Schaffer has consistently demonstrated that throughout the history of science, consensus was the exception, and controversy the rule (Schaffer 2014, p. 10). This is even more significant because the results obtained by experiments and scientific observations can serve to challenge established, institutional powers: this is especially the case for militant understanding that can take all of these forms⁴. Yet, dissolving the *aphoria* that denial of authority also applies to the authority of scientific evidence, does not imply that scientific practices are, in principle, aligned with anarchist demands—not by a long shot! As the scientific field is shaped by competitive relationships and hierarchical influences (Bourdieu 1976, 2018), the institutions of science multiply the manifestations of power. If nothing, therefore, opposes in theory an anarchistic approach to the ways of knowing, in practice, the authoritarian obstacles are indeed numerous.

It was with this precise goal of establishing a discipline around a coherent anarchist intellectual program, that David Graeber, who tragically passed away in 2020, had proposed the possibility of an “anarchist anthropology”⁵. As the Australian anthropologists Holly High and Josh Reno point out in this collection, it was a question of giving substance to an emancipatory political questioning. According to Graeber, “What sort of social theory would actually be of interest to those who are trying to help bring about a world in which people are free to govern their own affairs?” (Graeber 2004, p. 9). David Graeber assumed that an interpretation of the social world was always formulated from a particular point of view, and that this point of view could be that of anarchist emancipation. From then on, Graeber recut the very objects of anthropological inquiry according to new contours: for example, the analysis of “political entities that are not States” (Graeber 2004, p. 68), or the study of the “ecology of voluntary associations” (Graeber 2004, p. 73) or even the delineations of “possible dimensions of non-alienated experience [...]” (Graeber 2004, p. 75). Even if the task was arduous—Graeber made no secret of the difficulties to be confronted—the possibility of an anarchist reformulation of anthropology opened the way to a new understanding of emerging social processes and phenomena, such as community experiences and/or those of a sub-state, for example in Chiapas, Mexico. Graeber’s ambition extended beyond cultural anthropology, as Bill Angelbeck underscores through reference to similar perspectives developed in archaeology.

Similarly, sociologist Sal Restivo has devised a research agenda for the

⁴We allow ourselves to refer to Lamy 2018.

⁵He followed in the footsteps of other English-speaking anthropologists, such as Harold Barclay (Barclay 1982).

social sciences and STS that in some ways is quite close to the alternatives developed by Graeber even if it tends more toward an anarcho-Marxism. In his 2011 essay *Red, Black, and Objective*, Restivo argues that an emancipatory epistemic renewal could only concern societies already engaged in an anarchistic process:

An alternative progressive science or mode of inquiry can only emerge as the mode of knowing and thinking of an alternative progressive society. Marx offered us a brief and fuzzy view of what such a science might look like when he used the term human science in conjunction with his image of a future society. Imagine, then, a social formation in which the person has primacy, in which social relationships are diversified, cooperative, egalitarian, non-authoritarian, participatory, expressive. The mode of knowing and thinking in such a society would be non-exploitative, non-sexist, non-authoritarian, and non-elitist. The imperative for progressives, then, is to press forward with their social change agendas. *A nuova scienza* (new science) will follow their successes, just as it has the social changes that have gone before, only rarely as a science of the people, and then only in localized arenas. (Restivo 2011, pp. 199-200.)

Other attempts to integrate anarchist provisions into the scientific process are more circumscribed, and aim less at constituting a general theory of anarchistic science, than to remain attentive to the emancipatory evidence that are offered to observation. Thus Holly High, in a piece that was published prior her contribution to this collection, has made an effort to consider anarchy as something “banal, mundane, ordinary and everyday” (High 2012, p. 95). High argues for a sharpened perception of anarchist ways of being that would blend with anthropologists’ ways of doing:

there is good prospecting to be had for anthropologists in the intellectual tradition of anarchism, and vice versa, if only because both anarchism and anthropology are both engaged in cultural critique. The questions of how people organize and on what grounds, hierarchical and non-hierarchical social relations, and how state interventions are framed, legitimated and resisted are enduring questions. It is because anarchy as a concept and as an intellectual tradition relates to these enduring questions directly and provocatively that it can prompt interesting questions for anthropological empirical investigation and reflection. Some anthropologists and some anarchists alike have argued that the boundaries between state and wider sociality are blurred because the state, too, is a social relationship. What remains open for investigation is how both anarchic and state relationships manifest in various ways in our field sites. My sense is that we won’t find purely anarchic relations “out there” and “back then”—in the hills and in the past as in Scott’s depiction,

or in the contemporary “outback ghettos” and ancient Aboriginal past as Sutton would have it. And nor should we assume too quickly that ‘the state’ explains all ways of being in the world in those contexts where state relations are entrenched. Rather, my sense is that when we start exploring state and anarchic forms of social relationship together we will find both in uneven and patchy dispersal wherever we look. This will call attention to the manifestation, interaction, and alteration of these relationships as we observe them, not out there and back then, but here and now. (High 2012, pp. 104-105.)

The renewal of the objects and the revision of the scope of the ambitions of anarchism, as well as the more limited proposals of linkages between anarchism and research practices have fueled, since the 1990s, and in the English-speaking world, a veritable “anarchist turn” (Blumenfeld et al. 2013). This turn has contributed to the development of “anarchist studies” as a specific domain of research. In this respect, the creation of journals (such as *Anarchist Studies* in 1993 or the *Rivista storica dell’anarchismo* (Historical Journal of Anarchism) in 1994; Masini 1994), the foundation of dedicated institutions (such as the Institute for Anarchist Studies in 1996, which finances publishing projects and which claim democratic mode of governance⁶), and the publication of textbooks (Amster et al. 2009) has shaped a community of scholars and academics. More surprising cultural affinities have emerged, since the 1990s, between punk musicians (some bands of this musical sub-culture explicitly claiming to be anarchists) and scientific research. This is the case of Greg Graffin, leader of *Bad Religion*, who defended a doctoral thesis in Zoology at Cornell University, and taught paleontology at the UCLA (Graffin and Olson 2010, Graffin and Provine 2007). He has devoted a book to defending the links between evolutionary theory and anarchism. Milo Aukerman, lead singer of *The Descendents*, did doctoral work as well as a post-doc in molecular biology (Aukerman 1992). Dexter Holland, founding member of The Offspring, completed his Ph.D. in molecular biology and is a virologist (Holland 2017). Finally, François Guillemot, former singer of the French famous punk band *Béruriers Noirs*, is a research engineer at the CNRS and a specialist on the history of Vietnam (Guillemot 2018). All these musicians do not advocate an anarchist stance towards science; but Greg Graffin has made it a reflexive element of his pedagogy as well as of his music.

This agitation has also led to more specific disciplinary configurations, for example in anthropology (Gibson and Sillander 2011; Morris 2005), archaeology (Angelbeck et al. 2018; Gouletquer 2022; Rathbone 2017), geography (Springer 2016), sociology (Williams and Shantz 2011) or ecology (as shown by the work of Brian Morris (Morris 2015), not to mention the nowadays wider and avowedly political reception of Murray Bookchin’s texts Bookchin 1982, 2007, 2019, 2020).

Such a process of disciplinary formation has not (as yet) occurred in the French-speaking world. However, there is a long tradition of publications

⁶<https://anarchiststudies.org/about-2>.

and university theses on various aspects of anarchism ⁷, archive and research organizations ⁸, the anarchist components contained in major francophone works (those, quite distinctive, of Jacques Ellul (Ellul 1988), or those of Pierre Bourdieu, as the sociologist Maxime Quijoux shows in his contribution to this collection) and, more generally, the elective affinities between the public defense of rationalism (Laurens 2019) and the diffusion of anarchist ideas. This has been illustrated for example by the program held by the *Union rationaliste* (Rationalist Association) on *Radio libertaire* (“Radio Anarchy”) from the 1980s until recently ⁹. Or, again, by the didactic activity carried out by certain biologists such as Guillaume Lecointre (Lecointre 2018) today, following in the footsteps of André Langaney, of whom an interview completes this collection in *Zilsel*.

The channels of diffusion of anarchist ideas are numerous, as well as the forms of connection of anarchist principles to the practices of knowledge. It is from this vantage point that we must understand the ever-greater attention paid today to anarchist educational proposals. The educational initiatives inspired by anarchist proposals have blossomed since the 19th century: from the orphanage of Cempuis coordinated by Paul Robin (Brémond 1992), including *La Ruche* (“the Hive”) of Sébastien Faure (Lewin 1992), Summerhill school of Alexander Sutherland Neill (Neill 1960), the structures founded by Célestin and Élise Freinet (Freinet 1963, 1968), to the self-managed high schools (such as those in Saint-Nazaire and Paris, Papantoniou 2010) created in the aftermath of May 1968. For several years, in the footsteps of Jacques Rancière’s proposals based on the teachings of Joseph Jacotot (Rancière 1987), historical and sociological studies have multiplied to understand the numerous anarchist methods of transmitting knowledge. Thus, in a previous issue of *Zilsel*, Jean-Charles Buttier addressed the question of anti-authoritarian pedagogies at the beginning of the 20th century (Buttier 2021). Irene Peirera has been interested in the educational proposals of Paulo Freire (Pereira 2018); and Laurence De Cock has re-evaluated the potentialities of a critical pedagogy (De Cock 2018; De Cock and Pereira 2019). In the Anglophone world, Robert H. Haworth’s research focuses on a theoretical approach to anarchist pedagogy (Haworth 2012). In all these inquiries, it is less the question of the production of knowledge that is at stake, than the non-authoritarian ways of transmitting and diffusing it.

In the editorial space, the work of the Agone publishing house in Marseille (with the publication of the works of Noam Chomsky, Chomsky 1998, 2010), Jacques Bouveresse, and the thematic issues of the review *Agone* ¹⁰), of the *Atelier de création libertaire* in Lyon ¹¹, or of the Lux publishing house in Montreal (with texts of Bertrand Russell, James Scott, David Graeber (Grae-

⁷In particular in anthropology, e.g. Clastres 1974, Traimond 1997.

⁸The CIRA – *Centre international de recherches sur l’anarchisme* (International Research Center on Anarchism) in Lausanne, since 1957, and in Marseille, since 1965; the *Documentations, Informations, Références et Archives* library (DIRA) in Montreal, since 2003.

⁹Concerning Maurice Audebert, one of the hosts of this show, see Bruit 2012, pp. 3-5.

¹⁰“L’écriture raisonnée” (Agone 1990), “Neutralité et engagement du savoir” (Rosat 1998), “Rationalité, vérité & démocratie” (Rosat 2010), etc.

¹¹A libertarian and anarchist publication collective [TN].

ber 2014, 2018, etc.) have maintained and prolonged these long-standing affinities between science, rationalism, and anarchism. In recent years, there has been a renewed interest in the subject in the French-speaking social sciences (Hayat and Verhaeghe 2021), under the influence of English-language anarchist studies and the recent translation of key works (Scott 2013), notably in cultural anthropology (Accolas et al. 2018; Macdonald 2018) and geography (Pelletier 2013)¹².

Research on the emancipatory potential of science is these days leading to a growing interest in so-called “alternative epistemologies”. Feminist and anarchist approaches share a common interest in a refoundation of the principles of scientific truth and a critical and relativistic stance regarding the objectivity/subjectivity dualism, as illustrated by the work of Sandra G. Harding (Harding 1991, 2015) and Donna Haraway (Haraway 2007).

Based on these works, and considering this “anarchist turn”, the five articles and the interview with the biologist André Langaney, which constitute this issue of *Zilsel*, are a contribution to the current debates on anarchism and its applications in science. Taken over an extended period, the relationship between anarchism and science is reinscribed in the disciplinary tensions that structure scholarly activities: this edited collection sheds light on the ways in which the different scientific disciplines integrate both the epistemic (knowledge, methods, etc.) and social (ethical norms, power relations, collective organizations, etc.) aspects of anarchism and anarchistic theory and practice. Far from being a danger for the imposition of reason and rationality in science, it seems to us that anarchist and left-libertarian philosophy constitutes an indispensable resource for thinking about the relation of science and reason to authority, to emancipation, to freedom of conscience and to the production of knowledge, which can serve in the interest of the greatest number.

References

- Accolas, Sophie, Jacob Durieux, and Ariel Planeix [2018], “Anthropologie et anarchisme,” *Journal des anthropologues*, 152–153: *Anthropologie et anarchisme*, pp. 15–24, DOI: [10.4000/jda.6862](https://doi.org/10.4000/jda.6862).
- Agassi, Joseph [1976], “Against Method: Outline of an Anarchistic Theory of Knowledge,” *Philosophia*, 6, 1, pp. 165–177, DOI: [10.1007/BF02383263](https://doi.org/10.1007/BF02383263).
- Agone [1990] 1: *L’écriture raisonnée*.
- Amster, Randall, Abraham DeLeon, Luis Fernandez, Anthony J. Nocella II, and Deric Shannon (eds.) [2009], *Anarchism, Academia, and the Avant-garde*, London and New York: Routledge, 318 pp., ISBN: 978-0-415-47401-6.
- Angelbeck, Bill, Lewis Borck, and Matt Sanger [2018], “Anarchist Theory and Archaeology,” in *Encyclopedia of Global Archaeology*, ed. by Claire Smith, New York (N.Y.): Springer International Publishing, pp. 1–8, ISBN: 978-1-4419-0466-9, DOI: [10.1007/978-3-319-51726-1_2627-1](https://doi.org/10.1007/978-3-319-51726-1_2627-1).

¹²See also the *Réseau des Géographes Libertaires* (Libertarian Geographers Network) created in 2010: <https://rgl.hypotheses.org>.

- Aukerman, Milo Jay [1992], *Analysis of Opaque-2 Function in Maize*, PhD thesis, University of California, San Diego, 336 pp.
- Barclay, Harold B. [1982], *People Without Government. An Anthropology of Anarchism*, forew. by Alex Comfort, London: Kahn & Averill and Cienfuegos Press, 150 pp., ISBN: 0904564479.
- Bettinger, Robert L. [2015], *Orderly Anarchy. Sociopolitical Evolution in Aboriginal California*, Origins of Human Behavior and Culture, 8, Berkeley (Calif.): University of California Press, xii–286 p. ISBN: 978-0520283336.
- Blumenfeld, Jacob, Chiara Bottici, and Simon Critchley (eds.) [2013], *The Anarchist Turn*, London: Pluto Press, 264 pp., ISBN: 978-0-7453-3343-4.
- Bookchin, Murray [1982], *The Ecology of Freedom. The Emergence and Dissolution of Hierarchy*, Palo Alto: Cheshire Books, 480 pp., ISBN: 0917352092.
- Bookchin, Murray [2007], *Social Ecology and Communalism*, Oakland (Calif.) and Edinburgh: AK Press, 118 pp., ISBN: 978-1904859499.
- Bookchin, Murray [2019], *Changer sa vie sans changer le monde. L'anarchisme contemporain entre émancipation individuelle et révolution sociale*, trans. by Xavier Crépin, Contre-feux, Marseille: Agone, 160 pp., ISBN: 978-2748903997.
- Bookchin, Murray [2020], *L'écologie sociale. Penser la liberté au-delà de l'humain*, trans. by Marin Schaffner, Marseille: Éditions Wildproject, 336 pp., ISBN: 978-2-918-490-951.
- Bourdieu, Pierre [1976], "Le champ scientifique," *Actes de la recherche en sciences sociales*, 2, 2, pp. 88-104, DOI: [10.3406/arss.1976.3454](https://doi.org/10.3406/arss.1976.3454).
- Bourdieu, Pierre [2018], "L'histoire singulière de la raison scientifique," *Zilsel. Science, technique, société*, 4, 2, pp. 281-319, DOI: [10.3917/zil.004.0281](https://doi.org/10.3917/zil.004.0281).
- Brémand, Nathalie [1992], *Cempuis. Une expérience d'éducation libertaire à l'époque de Jules Ferry, 1880-1894*, Paris: Éditions du Monde Libertaire, 158 pp., ISBN: 978-2903013233.
- Bruit, Guy [2012], "Hommage à Maurice Audebert," *Raison présente*, 183, 1, pp. 3-5.
- Buttier, Jean-Charles [2021], "L'élaboration collective d'une pédagogie antiautoritaire. Anarcho-syndicalisme et éducation à la veille de la Première Guerre mondiale," *Zilsel. Science, technique, société*, 9, pp. 237-256.
- Carnino, Guillaume [2015], *L'invention de la science. La nouvelle religion de l'âge industriel*, Paris: Éditions du Seuil, 336 pp., ISBN: 978-2021111477.
- Chauveau, Sophie [2014], "Science, industrie, innovation et société au XIXe siècle," *Le mouvement social*, 248, 3, pp. 3-7, DOI: [10.3917/lms.248.0003](https://doi.org/10.3917/lms.248.0003).
- Chomsky, Noam [1998], *Responsabilités des intellectuels*, trans. by Frédéric Cotton, forew. by Michael Albert, Contre-feux, Marseille: Agone, 168 pp., ISBN: 2910846083.
- Chomsky, Noam [2010], *Raison et liberté. Sur la nature humaine, l'éducation et le rôle des intellectuels*, ed. by Thierry Discepolo and Jean-Jacques Rosat, trans. by Frédéric Cotton, Aude Bandini, and Jean-Jacques Rosat, forew. by Jacques Bouveresse, Banc d'essais, Marseille: Agone, 444 pp., ISBN: 978-2748901214.
- Clastres, Pierre [1974], *La société contre l'État. Recherches d'anthropologie politique*, Critique, Paris: Éditions de Minuit, 186 pp., ISBN: 2-7073-0021-7.
- Dacheux, Éric [2013], "Redécouvrir les liens entre science et anarchie pour penser l'indiscipline du chercheur et sa nécessaire responsabilité," *Hermès, la revue*, 67, 3, pp. 192-198, DOI: [10.4267/2042/51914](https://doi.org/10.4267/2042/51914).
- De Cock, Laurence [2018], *Sur l'enseignement de l'histoire*, Paris: Libertalia, 336 pp., ISBN: 978-2377290338.

- De Cock, Laurence and Irène Pereira (eds.) [2019], *Les pédagogies critiques, Contre-feux*, Marseille: Agone, 144 pp., ISBN: 978-2748903850.
- Diderot, Denis and Jean D'Alembert (eds.) [1751], *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 1, Paris: Chez Briasson et al., lii–914 p.
- Ellul, Jacques [1988], *Anarchie et Christianisme*, Lyon: Atelier de création libertaire, 123 pp., ISBN: 978-2905691101.
- Fages, Volny [2018], *Savantes nébuleuses. L'origine du monde entre marginalité et autorité scientifique (1860–1920)*, Paris: Éditions de l'EHESS, 362 pp., ISBN: 978-2713227264.
- Ferretti, Federico [2017], "Evolution and Revolution: Anarchist Geographies, Modernity and Poststructuralism," *Environment and Planning D: Society and Space*, 35, 5, pp. 893-912, DOI: [10.1177/0263775817694032](https://doi.org/10.1177/0263775817694032).
- Feyerabend, Paul [1993], *Against Method. Outline of an Anarchistic Theory of Knowledge*, 3rd ed., London: Verso, xiv–279 p, ISBN: 0860916464; trans. 1975.
- Feyerabend, Paul [1995], *Killing Time. The Autobiography of Paul Feyerabend*, Chicago: University of Chicago Press, 203 pp., ISBN: 978-0226245324.
- Freinet, Élise [1963], *Naissance d'une pédagogie populaire. 1. Historique de l'École moderne (techniques Freinet)*, Cannes: Bibliothèque de l'École moderne, 261 pp.
- Freinet, Élise [1968], *Naissance d'une pédagogie populaire. Historique de l'École moderne, pédagogie Freinet*, Textes à l'appui, Paris: François Maspero, 360 pp.; trans. 1963.
- Garcia, Renaud [2015], *La nature de l'entraide. Pierre Kropotkine et les fondements biologiques de l'anarchisme*, Lyon: ENS Éditions, 236 pp., ISBN: 978-2-84788-687-0.
- Gibson, Thomas and Kenneth Sillander (eds.) [2011], *Anarchic Solidarity. Autonomy, Equality, and Fellowship in Southeast Asia*, Monograph, 60, New Haven: Yale University Press, 322 pp., ISBN: 978-0938692942.
- Gilles, Gérard [1967], "Problèmes d'anthropologie libertaire," *Recherches libertaires*, 3, pp. 24-43.
- Girón, Álvaro [2003], "Kropotkin between Lamarck and Darwin: the Impossible Synthesis," *Asclepio*, 55, 1, pp. 189-213, DOI: [10.3989/asclepio.2003.v55.i1.94](https://doi.org/10.3989/asclepio.2003.v55.i1.94).
- Goldstein, Catherine [2020], "'S'occuper des mathématiques sans y être obligé' : pratiques professionnelles des mathématiciens amateurs en France au XIXe siècle," *Romantisme*, 190, 4, pp. 52-63, DOI: [10.3917/rom.190.0052](https://doi.org/10.3917/rom.190.0052).
- Gouletquer, Pierre [2022], *Préhistoire du futur. Archéologies intempestives du territoire, ou Connaître les pays est un repos. Suivi d'un dialogue avec l'auteur*, forew. by Sébastien Plutniak, Toulouse: Anacharsis, 229 pp., ISBN: 979-10-279-0448-8; trans. 1979.
- Graeber, David [2004], *Fragments of an Anarchist Anthropology*, Paradigm, 14, Chicago (Ill.): Prickly Paradigm Press, 105 pp., ISBN: 978-0-9728196-4-0.
- Graeber, David [2014], *Comme si nous étions déjà libres*, trans. by Alexie Doucet, Instinct de liberté, Montréal: Lux éditeur, 280 pp., ISBN: 978-2895961802.
- Graeber, David [2018], *Pour une anthropologie anarchiste*, trans. by Karine Peschard, 2nd ed., Instinct de liberté, 11, Montréal: Lux éditeur, 128 pp., ISBN: 978-2895962724; trans. 2004.
- Graffin, Gregory W. and Steve Olson [2010], *Anarchy Evolution. Faith, Science, and Bad Religion in a World Without God*, New York: Harper Collins, 304 pp., ISBN: 9780061828508.

- Graffin, Gregory W. and William B. Provine [2007], "Evolution, Religion and Free Will," *American Scientist*, 95, 4, pp. 294-297.
- Guillemot, François [2018], *Viêt Nam, fractures d'une nation. Une histoire contemporaine de 1858 à nos jours*, La Découverte Poche / Sciences humaines et sociales, 476, Paris: La Découverte, 392 pp., ISBN: 978-2707190949.
- Haraway, Donna [2007], *Manifeste cyborg et autres essais. Sciences, fictions, féminismes*, ed. by Laurence Allard, Delphine Gardey, and Nathalie Magnan, Essais, Paris: Exils, 333 pp., ISBN: 978-2-912969-63-7.
- Harding, Sandra G. [1991], *Whose Science? Whose Knowledge? Thinking from Women's Lives*, Ithaca (NY): Cornell University Press, xii-319, ISBN: 978-0801497469.
- Harding, Sandra G. [2015], *Objectivity and Diversity. Another Logic of Scientific Research*, Chicago: The University of Chicago Press, 232 pp., ISBN: 978-0226241364.
- Haworth, Robert H. (ed.) [2012], *Anarchist Pedagogies. Collective Actions, Theories, and Critical Reflections on Education*, Oakland: PM Press, 352 pp., ISBN: 978-1604864847.
- Hayat, Samuel and Sidonie Verhaeghe [2021], "Préface. L'émancipation avec et par la science ? Penser les liens entre anarchisme(s) et sciences sociales," in *Anarchisme et sciences sociales*, Lille, Mar. 22-23, 2018, ed. by Sidonie Verhaeghe, Lyon: Atelier de création libertaire, pp. 5-21, ISBN: 978-2-35104-156-7.
- Hessen, Boris [2006], *Les racines sociales et économiques des "Principia" de Newton. Une rencontre entre Newton et Marx à Londres en 1931*, trans., with a forew., by Serge Guérault, afterw. by Christopher Chilvers, Paris: Vuibert, 228 pp., ISBN: 978-2711771585.
- High, Holly [2012], "Anthropology and Anarchy: Romance, Horror or Science Fiction?" *Critique of Anthropology*, 32, 2, pp. 93-108, DOI: [10.1177/0308275X12438426](https://doi.org/10.1177/0308275X12438426).
- Holland, Bryan [2017], *Discovery of Mature MicroRNA Sequences within the Protein-Coding Regions of Global HIV-A Genomes: Predictions of Novel Mechanisms for Viral Infection and Pathogenicity*, PhD thesis, University of Southern California.
- Kropotkine, Pierre [1913], *La Science moderne et l'anarchie*, Bibliothèque sociologique, 49, Paris: P.-V. Stock, xi-391 p.
- Lafaille, Richard [1989], "En lisant Reclus," *Annales de Géographie*, 98, 548, pp. 445-459, DOI: [10.3406/geo.1989.20921](https://doi.org/10.3406/geo.1989.20921).
- Lakatos, Imre, Paul Feyerabend, and Matteo Motterlini (eds.) [1999], Chicago: University of Chicago Press, xi-451 p, ISBN: 0226467759.
- Lamandé, Pierre [2011], "Une personnalité du monde de l'Éducation nouvelle : Charles Ange Laisant (1841-1920) et son combat politique pour une éducation rationnelle fondée sur la science," *Paedagogica historica*, 47, 3, pp. 283-301, DOI: [10.1080/00309230.2010.509908](https://doi.org/10.1080/00309230.2010.509908).
- Lamy, Jérôme [2018], "Savoirs militants. Essai de définition historique et sociologique," *Cahiers d'histoire. Revue d'histoire critique*, 138, pp. 15-39, DOI: [10.4000/chrhc.6773](https://doi.org/10.4000/chrhc.6773).
- Lamy, Jérôme and Volny Fages [2021], *Retrouver les pratiques savantes de Louise Michel : traces, savoirs, déportation*, June 8, 2021, <https://ams.hypotheses.org/2123>.

- Laurens, Sylvain [2019], *Militer pour la science. Les mouvements rationalistes en France (1930–2004)*, Paris: Éditions de l'EHESS, 244 pp., ISBN: 978-2-7132-2769-1.
- Lecointre, Guillaume [2018], *Savoirs, Opinions, Croyances. Une réponse laïque et didactique aux contestations de la science en classe*, Guide Belin, Paris: Belin, 125 pp., ISBN: 978-2-701-19770-8.
- Lewin, Roland [1992], *Sébastien Faure et “La Ruche” ou l’éducation libertaire*, Cahiers de l’Institut d’histoire des pédagogies libertaires, Vauchrétien: Éditions Ivan Davy, 246 pp., ISBN: 978-2867500121.
- Macdonald, Charles [2018], *L’ordre contre l’harmonie. Anthropologie de l’anarchisme*, Terrains et théories anthropologiques, Paris: Petra, 336 pp., ISBN: 978-2-84743-204-6.
- Malolo Dissakè, Emmanuel [2001], *Feyerabend. Épistémologie, anarchisme et société libre*, Paris: Presses Universitaires de France, 128 pp., ISBN: 978-2130508267.
- Masini, Pier Carlo [1994], “Perché una Rivista storica dell’anarchismo,” *Rivista storica dell’anarchismo*, 1, pp. 5-6.
- Mathieu, Florian [2020], “La ‘République solaire’, sociale et libertaire, de Frédéric Stackelberg,” *Carnet Hypothèses AmateurS – Amateurs en sciences (France 1850–1950)*, <https://ams.hypotheses.org/1552>.
- Mendel, Gérard [2003], *Une histoire de l’autorité. Permanences et variations*, Essais, 146, Paris: La Découverte, 294 pp., ISBN: 978-2707148902.
- Morris, Brian [2005], “Anthropology and Anarchism. Their Elective Affinity,” *Goldsmiths Anthropology Research Papers*, 11, pp. 1-14.
- Morris, Brian [2015], *Anthropology, Ecology, and Anarchism. A Brian Morris Reader*, forew. by Peter Marshall, Oakland: PM Press, xx–252 p, ISBN: 978-1-60486-093-1.
- Neill, Alexander Sutherland [1960], *Summerhill. A Radical Approach to Child Rearing*, New York: Hart Publishing Company, 393 pp.
- Oblomoff [2009], *Un futur sans avenir. Pourquoi il ne faut pas sauver la recherche scientifique*, Pour en finir avec, Paris: Éditions de l’Échappée, 126 pp., ISBN: 978-2915830286.
- Papantoniou, Maria [2010], “Le Lycée autogéré de Paris (LAP) : diagnostiquer le ‘traditionnel’, penser l’alternative,” *La Lettre de l’enfance et de l’adolescence*, 80–81, pp. 75-80, DOI: [10.3917/lett.080.0075](https://doi.org/10.3917/lett.080.0075).
- Pelletier, Philippe [2013], *Géographie et anarchie. Reclus, Kropotkine, Metchnikoff*, Bibliothèque anarchiste, Paris: Éditions du Monde Libertaire, 631 pp., ISBN: 978-2-915514-49-0.
- Pelletier, Philippe [2018], “Géographie, anthropologie et anarchie au XIXe siècle. Carrefours, rendez-vous manqués et promesses,” *Journal des anthropologues*, 152–153: *Anthropologie et anarchisme*, pp. 35-56, DOI: [10.4000/jda.6864](https://doi.org/10.4000/jda.6864).
- Pereira, Irène [2018], *Paulo Freire, pédagogues des opprimé·e·s. Une introduction aux pédagogies critiques*, Paris: Libertalia, 170 pp., ISBN: 978-2377290185.
- Rancière, Jacques [1987], *The Ignorant Schoolmaster. Five Lessons in Intellectual Emancipation*, trans. by Kristin Ross, Stanford: Stanford University Press, 148 pp., ISBN: 0804718741; trans. 1987.
- Rathbone, Stuart [2017], “Anarchist Literature and the Development of Anarchist Counter-archaeologies,” *World Archaeology*, 49, 3, pp. 291-305, DOI: [10.1080/00438243.2017.1333921](https://doi.org/10.1080/00438243.2017.1333921).
- Reclus, Élisée [1905], *L’Homme et la Terre. Les ancêtres. Histoire ancienne : Iranie. Caucasia. Potamie*, Paris: Librairie Universelle, vol. 1.

- Restivo, Sal [2011], *Red, Black, and Objective*, Burlington: Ashgate, xi–224 p. ISBN: 978-1-4094-1039-3.
- Rosat, Jean-Jacques (ed.) [1998], *Agone 18–19: Neutralité et engagement du savoir*.
- Rosat, Jean-Jacques (ed.) [2010], *Agone 49: Rationalité, vérité & démocratie*.
- Roslak, Robyn S. [1991], “The Politics of Aesthetic Harmony: Neo-impressionism, Science, and Anarchism,” *The Art Bulletin*, 73, 3, pp. 381–390, DOI: [10.1080/00043079.1991.10786764](https://doi.org/10.1080/00043079.1991.10786764).
- Roszak, Theodore [1974], “The Monster and the Titan: Science, Knowledge, and Gnosis,” *Daedalus*, 103, 3: *Science and Its Public: The Changing Relationship*, pp. 17–32.
- Schaffer, Simon [2014], *La fabrique des sciences modernes (XVIIe–XIXe siècle)*, trans. by Frédérique Aït Touati, Loïc Marcou, and Stéphane Van Damme, Science ouverte, Paris: Éditions du Seuil, 448 pp., ISBN: 978-2021036169.
- Scott, James C. [2013], *Zomia ou l’art de ne pas être gouverné. Une histoire anarchiste des hautes terres d’Asie du Sud-Est*, trans. by Nicolas Guilhot, Frédéric Joly, and Olivier Ruchet, Paris: Éditions du Seuil, 529 pp., ISBN: 978-2-02-104992-3; trans. 2009.
- Springer, Simon [2016], *The Anarchist Roots of Geography. Toward Spatial Emancipation*, Minneapolis (Minn.): University of Minnesota Press, 230 pp., ISBN: 978-0-8166-9773-1.
- Traimond, Bernard [1997], “Préface,” in *L’anti-autoritarisme en ethnologie*, Bordeaux, Apr. 13, 1995, Mémoires des Cahiers ethnologiques, 8, Bordeaux: Université Victor Segalen, Bordeaux 2, pp. 5–13, ISBN: 2-906691-07-0.
- Van Strien, Marij [2020], “Pluralism and Anarchism in Quantum Physics: Paul Feyerabend’s Writings on Quantum Physics in Relation to his General Philosophy of Science,” *Studies in History and Philosophy of Science*, 89, pp. 72–81, DOI: [10.1016/j.shpsa.2019.03.006](https://doi.org/10.1016/j.shpsa.2019.03.006).
- Williams, Dana M. and Jeff Shantz [2011], “Defining an Anarchist Sociology: A Long Anticipated Marriage,” *Theory in Action*, 4, 4, pp. 9–30, DOI: [10.3798/tia.1937-0237.11028](https://doi.org/10.3798/tia.1937-0237.11028).