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Sociology: A Science Just Like the Rest?

Jean-Michel Wachsberger

Can sociology be a science just like the rest? Against the grain of the dominant epistemology, which defines the specificities of sociological thinking in terms of their differences with the so-called "hard" sciences, Dominique Raynaud argues that a single scientific model is possible.

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> "[I]f [anthropology] resigns itself to a period of purgatory beside the social sciences, it is because it does not despair of awakening among the natural sciences when the last trumpet sounds." [1]

This quote sums up quite well Dominique Reynaud's goal in this dense and erudite book: to make sociology a science "just like the rest." Against the grain of the reigning epistemology, which defines, through their differences with the so-called "hard" sciences, the specificities of sociological thinking, Raynaud, a sociologist and historian of science, makes the case for a single model of science, whose general characteristics can be articulated ("definitions, laws, predictions, but especially: revision, cumulativity, reproducibility, and so on") and that sociology can follow. Yet

[1] Claude Lévi-Strauss, *The Scope of Anthropology,* trans. Sherry Ortner Paul and Robert A. Paul, London, Jonathan Cape, 1967, 31.

the book's ambition is in fact far greater, as Raynaud seeks to establish a fundamental sociology, defined as "the set of mechanisms that structure the production of sociological knowledge [… and which] do not belong to immediate experience of the field and of social worlds" (p. 7).

The book is divided into three large parts. The first considers the scientific value of concepts. The second explores the characteristics of research programs. The third examines the major principles that should serve as reference points for producing all scientific knowledge. I will first present these three domains before discussing the scope and appeal of fundamental sociology.

Concepts, programs, and principles

It is incumbent upon science, Raynaud maintains, to establish "clear and objective" concepts, so that research results can be validated or invalidated by external "operators" seeking to reproduce them. Yet some sociological concepts are indeterminate, bound up in thinking that is either partisan or floating. It is therefore necessary to flesh out the boundaries of concepts and determine the logical principles upon which they are based.

Raynaud does this with the concept of context. An examination of databases of sociological articles reveals that this term is often used in ways that are either directly explanatory (in which context explains or determines) or indirectly explanatory (in which context conditions). Yet given its indetermination (at what level is it situated? What are its limits? What is its content?), this explanation, according to Raynaud, has no scientific value. Context cannot aspire to the status of a concept, emptying it, in his view, of all utility.

Discussing the conceptual flux surround the term "ghetto," which arises from the multiple definitions that urban sociologists have assigned to the concept, Raynaud tests them against twenty or so concrete socio-historical types and proposes the systematic use of a simple tool, a logical contingency table, to evaluate and select the factors required for a concept's definition. In this case, it becomes apparent that three constitutive properties are necessary and sufficient for defining "ghetto": stigmatization, captivity, and residence. Hence it is in fact possible in sociology, as in other sciences, to define concepts clearly and objectively.

The book's second part seeks to demonstrate that sociology is able to pursue research programs similar to those in the "hard" sciences. Such programs can, in other words, use quantitative formalization and aspire to formulate laws, without relying on the precepts of the understanding-based/interpretative/hermeneutical epistemology that prevails in sociology. Raynaud is particularly interested in the research method he calls exotic statistical physics (applied, that is, to social phenomena). Drawing on an analogy between physics and sociology, it considers the behavior of particles insofar as they are governed by the laws of physics. Raynaud is drawn to this research program that is indifferent to the intentional character of human behavior, as several examples confirm. The analysis of social networks shows that, their formal variations notwithstanding, they nonetheless exhibit specific properties (that are very different from random and material networks). Furthermore, the application of Ising's ferromagnetic model[2] to the study of public opinion formation has made it possible to identify a universal law of opinion distribution.

Raynaud also reexamines research on the diffusion processes used in epidemiology, population dynamics, and economics to examine their applicability to the sociological question of knowledge and information diffusion. These programs result in mathematical modelling whose predictability, when applied to empirical social phenomena (such as the adoption of a medicine by Midwestern doctors, the adoption of hybrid corn by Brazilian farmers, the adoption of family planning by Korean villages, and the diffusion of contraceptive methods in Cameroonian women's organizations), proves imperfect. Raynaud proposes to improve upon these programs by considering the structural characteristics of the networks to which these populations belong.

Finally, Raynaud examines experimental sociology, which ordinary sociological epistemology deems impossible because social phenomena are complex, spontaneous, free (due to the subjectivity of actors), and rooted in unique contexts. Even so, he attempts to show that experimental sociology is possible, while also identifying its limits. His examples include: indirect experiments that use comparisons to highlight causal factors (from Durkheim's method of concomitant variation to the construction of multivariate models); quasi-experiments, such as those conducted by Chapin in Minneapolis in 1940 evaluating the effects on wellbeing of rehousing families living in shantytowns; controlled experiments that seek to strictly regulate interest variables, like Dodd's 1956 experiment studying the diffusion processes in four

[2] This is a statistical model in physics that makes it possible to describe in simple terms the magnetism of ferromagnetic materials (which are attracted to magnets or form permanent magnets).

identical towns; and laboratory experiments, like the one conducted by Molm and others on the structural relationships contributing to the emergence of social solidarity.

Four major principles

The book's final part sums up, in a sense, the preceding sections by advancing the four principles that Raynaud believes constitute the basis for scientific endeavors in sociology.

Against what he calls sociology's "inevitable slide" towards indeterminism, he maintains the necessity of affirming the principle of a statistically-based methodological determinism (which he finds traces of in authors as varied as Bourdieu and Boudon)--in other words, the search for broad regularities, though these regularities need not entail "constant and necessary relationships between variables."

The second principle is naturalism, which he defines as the idea that everything can be explained by natural causes, rendering it pointless to invoke motives or beliefs. Sociology is the science of the social and the social can be either human (in the sense that it depends on individual intent) or non-human (which is independent of individual intent). The assortative characteristic of social networks (that is, the fact that the most closely connected knots tend to be connected to each other) proves, for example, that they are "natural," a fact confirmed by the degrees of correlation calculated by ethologists who study animal networks (such as those of sticklebacks, dolphins, squirrels, macaques, and chickadees). In this way, Raynaud defends a radical vision of sociology, which views the social as distinct from the human. "If the study of a school of sticklebacks or a pod or an alliance of dolphins yields scientific results without any investigation of the intentional states of the members of these societies, why would this approach not yield results in the case of human societies?" (p. 322).

The third principle is materialism, which postulates the existence of a reality "external to any considerations of subjects or observers." A materialist approach prefers explanation to understanding, since the latter is rooted in a hermeneutic approach whose results are, by the same token, irrefutable. The methodological materialism that Raynaud defends consists, to the contrary, in explaining facts in terms of "social mechanisms"--for example, by explaining "self-fulfilling prophecies" in terms

of a theory or "the mechanism or operatory mode of facts" (that is, when beliefs produce a snowball effect) or explaining residential segregation equilibria through the Schelling model (which models movements on a checkerboard so that each piece is surrounded by at least three pieces of the same color).

Raynaud's final methodological principle is scientism, which he defines as the claim that the best way to acquire knowledge of reality is to use scientific methods--that is, "posing difficult questions in clear terms, separating the true from the false while aiming for the truth, relying on the deductive hypothetical method, using experimental reasoning when possible, [and], at times, mathematizing the phenomena one studies" (p. 398).

Fundamental sociology and nomological ambitions

Sociology is tormented by the question of its scientific character--on which the legitimacy of its account of the social depends--and struggles for its scientific status to be recognized unquestionably. This is the result, in part, of its imperfect control over disciplinary practices, as evidenced in the Sokal affair or, in France, the case of Elizabeth Tessier's thesis. But it is also due to its difficulties in asserting and achieving clear recognition of the specificity of its reasoning--including in the discipline itself. Because it rigorously discusses the theses that claim such a specificity, Raynaud's book provides much food for thought. Yet while it has the merit of raising real questions, the book also casts doubt on the constitution of a fundamental sociology. Moreover, the intellectual stimulation it inspires is weakened by its aggressive posture towards competing analyses and a sense that Raynaud is, at times, tilting at windmills (such as understanding-based/interpretative/hermeneutical sociology and its alleged devotees). I will elaborate on these points in what follows by briefly revisiting the book's three parts.

Raynaud's denunciation of the risk of conceptual vagueness and the desire to establish a rigorous approach to defining concepts is completely persuasive and the logical contingency tables that he proposes are highly stimulating. But it strikes me that Raynaud is running up the wrong tree when he goes after context, which is not a concept (it cannot be found in dictionaries of sociology) but an idea whose usefulness in sociology is by no means negligeable. The context (and proximity) "effect" displayed

in quantitative analyses *ceteris paribus* is a way of proving that the results cannot be reduced to the (individual) characteristics of the model, making it necessary to open the black box of social interaction. To speak, like Jean-Pierre Olivier de Sardan (2021a), of the "revenge of contexts" in relation to attempts to impose standardized development models is to emphasize the necessity of considering what Max Weber called the "infinite complexity of reality," which no standard model can exhaust. The latter point is a reminder that it was sociology's empirical turn that allowed it to establish itself, in the late nineteenth century, as a science and distinguish itself from social philosophy. From this standpoint, concepts are necessarily indexed to a time and a place and can only be "incomplete abstractions" (Passeron, 2006). Hence the importance of avoiding the "fetishism of the Concept" (Mills, 2013). Yet it is the case that Raynaud aligns himself with a different sociology--a fundamental sociology--that does not draw on "immediate experience of the field and social worlds."

In the part on programs, Raynaud makes a probing case for the interest of quantification and formalization and demonstrates the fruitfulness for sociology of experimental reasoning. We simply note that the epistemologists he calls "normative" have never challenged this claim. For example, Jean-Clause Passeron (2006) has said that sociological demonstrations always depend on comparisons that aspire to be as systematic as possible, "so as to establish rules and base our assertions on constant correlations of observed traits 'all things being equal.'" Yet Reynaud overlooks several limits inherent to such methods that have been identified by the very epistemologists he denounces.

The first is tied to the fact that "all things being equal" can in fact only ever be "some things being equal," which places a fatal limit on generalization's pretensions. As for the dream of an experimental turn in the social sciences, it must be emphasized that some economists--notably in the field of development--pursue it by systematically applying randomized control trials[3] focused on "what works," without ask "why?" or "in what context?" (Rodriguez and Wachsberger, 2016). Yet what is established by this method proves impossible to generalize to all times and places, as a number of critical analyses have demonstrated (see, for example, Deaton and Cartwright, 2016, Bedecarrat et al., 2021). These critiques perfectly illustrate the need for a "call to order

[3] Impact assessments that use the experimental method known as randomized control trials (RTC), which have been borrowed from medical science, are applied on large scales in developing countries and are seen as constituting the current "gold standard" of assessment.

in [social science] reasoning when it takes the experimental dream too far" (Passeron, 2006).

The second limit concerns whether either experience or modeling is, on its own, sufficient to produce sociological results. The answer is "yes" (the aforementioned limits notwithstanding) if sociology's goal is solely to describe "what works" and "what is dysfunctional"--in other words, if its goal is to answer "how?" Raynaud, in his pursuit of fundamental sociology, seems to align himself with this perspective. The answer is "no," however, if the goal is to establish the "why?" of what has been observed--that is, to reveal its meaning. At the end of the day, such a revelation can only ever be the outcome of a sociological interpretation. To grasp this point, one has only to reconsider Raynaud's own examples. The sociological data (which, incidentally, is quite tautological) that Dodd draws from his experiment is that information is propagated more completely and quickly if individuals perceive it as important, though his experiment says nothing about the value of what is circulated. The sociological interpretation of the "universal law of opinion diffusion" is interpreted by the analyses' authors as a diversely distributed attempt to convince one's peers to vote for the same candidate, a situation that does not appear in the model. As Passeron (2006) observes, sociological reasoning is necessarily a "'back and forth' between historical contextualization and experimental reasoning. Not the right balance, but a 'mixture,' in its mode of assertion and in each of its assertions individually."

The final limit, which is more specifically aimed at controlled or laboratory-based experiments, is ethical in nature: using individuals for experiments obviously raises the question of their moral character. Should one regret that, in the name of science, Chapin's quasi-experiment (see above) could only be achieved by randomly assigning shantytown residents to two categories: rehoused vs. not rehoused? Conversely, is it now possible to provide ethical validation to Rosenthal and Jakobson's famous experiment on the Pygmalion effect (not cited by the author) which arbitrarily informs schoolteachers of the IQ of the children for which they will be responsible?

I conclude with some thoughts on the part of the book devoted to principles. Materialism and naturalism lend themselves to the fundamental sociology that Raynaud defends, but are obviously incompatible with empirical sociology, which seeks to explain meaning. Society's members are motivated not simply but desires but

always act according to moral frameworks that are by no means natural and that it is imperative to understand (Taylor, 1989; Calhoun, 1991).

Empirical sociology could, however, embrace scientism, as Raynaud defines it (with his thesis that the best way to know reality is to use scientific methods), provided, however, that one does not confuse the "need for proof" with "use of a particular technique." As historians of science know, such techniques are always "historical inventions replete with a complex of technical procedures, representations, and beliefs that are unique to a given period" (Berthelot, 1995). Finally, we have the question of determinism and the possibility of articulating laws in sociology. Indeed, what is the point of sociology if it cannot rise to a general perspective and dissolves into a multitude of case studies? Raynaud's solution--statistical determinism--is from this standpoint stimulating, as it aspires to generalization while recognizing the possibility of deviation. It protects, by the same token, sociology's initial nomological goals. Yet, again, Raynaud's attack against sociology's indeterminist drift is very caricatural. His example is Clifford Geertz's seminal work on the interpretation of cultures (1993), which he sees as condensing every aspect of this trend: it seeks neither regularities nor universal laws, emphasizing only deep fieldwork--"thick description"--and the interpretation of the meaning experienced by actors. This perspective would appear to have contradicted the principles of science: universality, objectivity, cumulativity, and refutability.

Geertz's thesis strikes me, however, as more subtle than Raynaud presents it. On the one hand, it articulates the conditions of scientific rigor that must be applied to explain the social, even if his approach is very far indeed from that of fundamental science. Thick description is indeed a plea for "long-term, mainly (though not exclusively) qualitative, highly participative, almost obsessively fine-comb field study in confined contexts" (p. 23). On the other, this approach does not renounce all generalization, as it formulates a general theory of culture as symbolic system and suggests that thick description nourish sociological thinking. "Anthropologists don't study villages (tribes, towns, neighborhoods…); they study *in* villages" (22). In the process, this allows them to reflect on what living in a village means. Their descriptions do allow for generalization--"within" cases," not "across " them (26).

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