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John H. Goldthorpe, "Sociology as a Population Science." Cambridge: Cambridge University Press, 2016, 175 pp.

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Book Review

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Sociology is not very good at excluding things from itself. This statement, borrowed from Andrew Abbott, establishes the challenge of Goldthorpe's book. The book follows the path opened with the previous one *On Sociology* [first edition Oxford UP, 2000; second edition, Stanford UP, 2007], focusing on a selection of sub-topics and digging deeper into them. While *On Sociology* was dealing also with the "external borders" of the idea of sociology that Goldthorpe advocates, here the competitors are mainly "internal" and share a scientific perspective on the discipline. Radical ethnographers, grand social theorists and critical sociologists are scantly considered as allegedly "selling sociology short" [p. 3]. Can sociology be a scientific discipline? The future, Goldthorpe says, will have the final word on this quite endless debate.

From a social science perspective, then, why should sociology excludes anything, one may ask? And with which consequences? Goldthorpe's answer is straightforward: sociology *needs* to be selective about its objects for, if not, its intellectual *and* public status would be seriously at risk of triviality. The book is organized along nine chapters, each of them beginning with a short statement that summarizes the core of the argument. What should sociology exclude from its range? Everything that differs from a *population regularity*, that is the answer. The concept of population (and sub-populations) is really the key concept of the book. Populations are made of entities with variable properties that exhibit aggregate-level regularities of a probabilistic kind. This "central idea," Goldthorpe shows, is the foundation of the "probabilistic revolution" that influenced natural sciences transformation from the deterministic worldview of Laplace to the chance-based one of Von Neumann. Despite its key role in the origins of the probabilistic revolution, the argument goes on, sociology failed to exploit this revolution both in research and theory.

This "central idea" is illustrated in the first chapter, and further specified in the second one. Here Goldthorpe takes the bull by the horns arguing that what is distinctive of the *Homo sapiens sapiens* is a capacity for culture and sociality mainly through the "command of language or, more generally, of symbolic communication" [p. 17]. Sociologists are very prone to accept this point, but in a flawed manner: namely, without considering the crucial difference between the generic capacity for *culture* and the specificities of *cultures*. Or, when they do so, they accommodate the variability of *cultures* within an holistic paradigm where variability is treated as occurring just *among* sociocultural entities or "wholes." This leads to idiographic analysis centered on: "particular cultures or societies and on the detailed description of their features" [p. 19]. Goldthorpe shows how this kind of research influenced both classic and modern sociology, leading to an ultra-socialized account where internal homogeneity of wholes pairs with normative conformity, a lack of adequate micro-foundations and an inconsistent idea of individuals as something nor distinct neither separated from the collectivities to which they belong [p. 23]. To illustrate this point, Goldthorpe leans not just on the sociological debate but also

on the anthropological one, contrasting the view of Radcliffe-Brown where "people […] are conspicuous for their absence" [p. 27] with the one of Malinowski who was much more comfortable with human variability *within* cultural wholes. More than anything else, an amusing footnote [p. 23] clearly illustrates what is at stake: "The point is entreatingly brought out in the animated film, *Antz*. The deviant – because anthropomorphic – ant, Z-4195, bitterly complains (in the voice of Woody Allen), 'It's this whole gung-ho superorganism thing that I *just can't get*. I try, but I just don't get it. What is it, I am supposed to do everything the colony and […] what about *my* needs?'"

To take the "deviant" ant seriously, sociology should embrace an individualistic paradigm [chapter 3], able to make sense of both the high degree of variability existing at the individual level and the degree of autonomy of individual-level actions and inter-actions in generating macro-level regularities of probabilistic kind. Humans – differently from other animals which appear to live in an "eternal present" – can "readily think in the future perfect tense" (p. 34) and prefigure *normatively* innovative actions on rational grounds. This rationality of everyday life rests on a "rationality for mortals" perspective that weights normative and non-normative constraints [pp. 38-39]. Innovation in the beliefs, values and social norms of marriage and child-bearing make a compelling case in point: "such analyses of the decline of marriage and the rise of cohabitation do then well illustrate the potential force of individual autonomy as against prevailing norms in response to changing conditions of actions" [p. 41].

These "informed choices" generate population-level regularities that *allow* and *requires* an explanation [Chapter 4]. Singular events – such as "Why did President Chirac call early elections in 1997, only to lose his majority in parliament?" [p. 44] – do not constitute suitable *explananda* for sociology as soon as the role of *chance* is considered. Sociology as a population science, the argument goes on, needs to consider chance in an "operational" sense: here a probabilistic approach is *in practice* the only feasible one, even if *in principle* a deterministic approach could be applicable. In contrast, an "essential" understanding of chance is far more radical and implies the idea that events result from the *intersection* of: "two or more quite independent series of events" [p. 44]. These kinds of *Cournot effects* make an event as something that need to be understood as a "*coïncidence absolue*" [p. 46]. Despite what appears to be a pervasiveness of essential chance in social life, techniques of data collection and data analysis are able to single out regularities that can be treated as: "the explananda for which sociological explanations may be properly sought" [p. 47]. For example, job search and matching through weak ties would seem an instance of mere luck but, as Granovetter himself argued, this "essential" chance shows instead discernable regularity when placed in its socio-structural context. Not every event can be reduced to its operational features, though. Genuinely distinctive and singular events such as revolutions and organizational disasters are cases in point. Sociologists should, in this regard, be clearly aware of the difference between a *theoretical explanation* and an *historical* one. The latter involves: "an account of the unfolding of all relevant prior events, including their quite contingent intersections and their consequences – essential chance at work – up to the point at which the event of interest was actually brought about" [p. 48]. When not clearly acknowledged, this difference blurs the line between description-explanation, on the one hand, and comparative history-sociology, on the other, to an inacceptable degree.

Non-probabilistic attempts such as QCA do not solve the problem [pp. 51-57], for they lean on arbitrarily chosen scope conditions to select cases that are *assumed* to be causally homogeneous.

Population-level regularities and operational chance are best established through statistical techniques, Golthorpe argues in the fifth chapter. The key argument is the following: while statistics is widely applied in *all* sciences, sociologist should be ready to admit the *specificities* of the application of statistics in their own field. Namely, for social scientists statistical methods serve not just to obtain less error-prone knowledge of an independently existing phenomena "out there" (like the Jupiter ellipse around the sun) or to protect against erroneous inferences from observations in experimental designs [pp. 58-59], but as more complex means of *creating* the objects of analysis. Far from assuming a constructivist position, Goldthorpe further maintains that these constructed objects are "no less real" that the ones of physical science. For statistical methods provides (through the right conceptions of substantive kind) access to variation and randomness. To detach his position from a constructivist perspective, Goldthorpe highlights that sociologists need to embrace a "commensurability" and "implicative" outlook to analytical concepts. From this perspective, the "constructed" nature of population-level regularities should not lead to the idea that the world is not "out there": "while sociologists are free to choose between different conceptual approaches, social reality can, as it were, strike back, in that, once put into use, particular choices will carry empirical implications that can be compared, to better or worse effect, with those that follow from other approaches" [p. 67].

Methods of data collection [chapter 6] as developed through random sampling and survey research are the best candidates to fulfill this role. Through a fascinating account of their development, chapter six defends the superiority of random sampling in capturing the actual range of population heterogeneity [pp. 70-76] *and* social structure [pp. 81-83]. Case studies, the main competitors of random sampling, are better exploited as means to test theoretical propositions in relation to which their selection has been specifically made [p. 79], as in the case of "critical" case studies. Cases, in other words, are always cases of something and, to assess this "something," a random sampling is needed before case selection. New developments such as "big data" and correlational pattern-seeking are deemed to be useful for prediction, but much less for explanatory purposes and, moreover, they are often biased through the very process through which they are generated. The quality of data is also questionable, since a large amount of data is in no way synonymous with a large amount of information [p. 81] and the noise may be easily mistaken for the signal.

Statistical methods of data analysis [chapter 7], mainly through multivariate models, are the best mean to "establish the phenomena," namely to claim on solid grounds that a regularity exists, requires and allows an explanation, as Goldthorpe states in the light of the famous standpoint of R.K. Merton. Even the most sophisticated regressions should to be interpreted as descriptive tools and not as means to *directly* move from association to causation [p. 91]. In a true "Galtonian" – as opposed to "Gaussian" – spirit, regression coefficients provide a parsimonious description of population variability and, chiefly, of the *systematic* component of this variability. In this regard, the absolute size of R square is of no great importance since a low value of it will simply reflect the great

amount of individual-level variability at work. The main competitors of regressions are here techniques of pattern search, through forms of algorithmic modelling such as machine learning and optimal matching of sequences. Goldthorpe sees no reasons to reject these techniques, but urges sociologists to evaluate their potential on methodological and empirical grounds, without claiming that they offer a deeper ontological grasp straight away. A long-term discussion with A. Abbott – started at least in Goldthorpe's book *On Sociology* – is here reinvigorated, and it calls for a reply.

But sociologists should not stop their efforts in providing sound descriptions: these, as important as they are, are only the starting point of the inquiry. To assess the generative mechanisms that explain these regularities, statistical methods *per se* are not enough. Their limits [chapter 9] lie in the fact that sociology has a too weak understanding of the micro-level *process* that generates the macro-level regularity of interest. Explanations must be grounded on theoretical models that elucidate the mechanisms assumed to bring about an outcome. These generative accounts are based not only on the information contained in the analyzed data, but also on existing theories of relevance for the problem at hand. On this basis, Goldthorpe criticizes those approaches on causation based on "causal effects" that tend to understand causality in terms of the change that is produced in a dependent variable as the result of an intervention or "treatment."

Mechanism-based explanations need to spell out how micro-level entities with causal capacities generate *probabilistically* the macro-level regularity of interest. These *generalised* narratives of action and interaction must causally and adequately show *how* the macro-regularity could be generated, and – to get a sound knowledge of the actual operation of the hypothesized mechanism – they should be further open to empirical test. Here Goldthorpe points to the distinctiveness of his understanding of mechanisms *vis-à-vis* the one of analytical sociology. In the former, a chief interest to develop a tool-box of potential mechanisms (St. Matthew-effect, cumulative advantage) working in a variety of substantive domains would appear to be the main aim: "However, the approach also has its dangers. Perhaps the most apparent is that it can give rise to a greater interest in mechanisms *per se* than in the extent of their explanatory potential: that is, beyond cases specially selected so as to best illustrate their application" [p. 115]. Goldthorpe suggests instead to always start from a probabilistic population regularity and *then* to look for the mechanisms that brought it about. Moreover, a variety of research strategies (e.g. direct observation of the mechanism in real settings; indirect observation through the analysis of other regularities logically implied in the working of the hypothesized mechanism; quasi-experimental research design) can be fruitfully applied for the empirical test. What must be highlighted is that these strategies – providing that they are rigorously designed and applied – are not ranked in some order of importance [p. 121]. Furthermore, Goldthorpe advocates a closer commitment to rational-action theory than analytical sociologists. A sociological version of rational-action theory, that is to say a "rationality for mortals" version, provides both explanatory *and* hermeneutic primacy and solve the problem of an infinite regress in search for deeper and deeper mechanisms.

Goldthorpe's view is deeply committed to an idea of sociology as a social science and, he argues, within these boundaries a genuine pluralism can flourish. Quite the reverse, a fundamental disagreement on the nature itself of the discipline easily lead to a cacophonic Babel's tower where different tribes confront each other *just* on non-scientific

grounds. This latter situation may be very dangerous for the public role of the discipline and, in the end, may undermine its public support. If sociology renounced completely to its scientific appeal, a commitment to "progressive" political values and reflexive knowledge *à la* Burawoy would not be enough. Or, to put it differently, the political commitment for a "better" world should not be thought to compensate the lack of scientific accuracy. They are not fungible goods.

Despite its quite far-reaching scope, overall the book is concise and very clear. Goldthorpe pushes the discussion further on in many fruitful directions: advocates of analytical sociology, historical explanation, algorithmic modelling, computational sociologist and QCA analysts will find a compelling bunch of arguments to deal with. The book is a sort of perfect textbook for PhD students who wish to work in the scientific tradition of sociology and a stimulating reading for social scientists in general as well. A distinctive value of the book is its very rare capability to trace the historical roots of the topics illustrated *and* to show their consequences for the current debate. In this respect, it urges scholars who are trapped in the (often deadly) formatting standard of journal articles to think and write in a broader way. The discipline of sociology that Goldthorpe advocates is both scientific *and* public: it deals with empirical phenomena looking for good descriptions and sound explanations, producing also publically relevant knowledge. As I said, Goldthorpe criticizes those scholars who "sell sociology short" and more or less explicitly think that moral commitment can stand on its own and replace analytical rigor and methodological accuracy, as they were tradable goods. But there is no market for such an exchange, since the goods rely on very different "metrics" or "orders of worth." Real innovation comes from the capability to generate new value from their friction and incommensurability. In recognizing this, Goldthorpe acts as a *Schumpeterian entrepreneur* who pulls together unconnected resources for new purposes in the field of scientific innovation.

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