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To cite this article: Richard Swedberg (2021): What is a method? On the different uses of the term method in sociology, *Distinktion: Journal of Social Theory*

To link to this article: <https://doi.org/10.1080/1600910X.2020.1833955>



Published online: 08 Feb 2021.



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## What is a method? On the different uses of the term method in sociology

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### ABSTRACT

This article has two major goals: to present the different ways in which sociologists use the term ‘method’; and to suggest a tentative explanation why these been invested with their current meaning. The following uses are discussed: method as a mean to a goal; methods as methodology; the scientific method; method as a craft; and the heuristic method. It is also pointed out that sociologists today tend to view methods as distinct and independent of theory. The main reason for this, it is argued, is that modern sociologists have broken with the view of the classics that *sociology as a science is defined by having its own distinct object of research* (such as *social facts* [Durkheim] or *social action* [Weber]). The tendency to ignore this and instead study anything ‘social’, which is common in modern sociology, has important consequences for theory as well as methods. The two will tend to drift apart, with the result that theory tends to become out of touch, and methods be seen as the best way to access reality and understand what is going on. Methods, however, cannot replace theory.

### KEYWORDS

Method; methodology; scientific method; craft; theory; heuristics; object of research

Today’s sociologists are well aware that the term ‘theory’ is used in many different ways (e.g. Rojas 2017, 7–19). It can have a technical meaning, as a set of propositions in a hypothesis; it can also refer to a general statement about society, be a middle-range explanation of some phenomenon, and quite a bit more. The attempt to map out the different uses of the term theory in sociology was first made by Robert K. Merton (1945); today many also refer to a more recent article by Gabriel Abend (2008).

This article attempts to do the same as Merton and Abend, but with the term ‘method’, that is, to map out the different ways in which it is used by today’s sociologists. The focus will be on *how a method is used in practice, and with what consequences*, rather than on the pure semantics or meanings involved. On this point, in other words, I will follow Merton rather than Abend. In his important article from 1945 Merton settled for the meaning of the term theory that he considered best suited for use in empirical research; and I will try to do the same with method. This is in contrast to Abend, who argues that it is not possible to advocate one particular meaning of theory because this is ‘to a large extent a *political* problem’ (‘the “semantic predicament”’; Abend 2008, 192).

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A major argument also runs through this article, which is closely related to the attempt to present a notion of method that can be of practical help in sociology. This is that sociology is defined by its object of study, just as any science; and that this must be taken into account also when the method is chosen and used. For this reason, methods are closely linked and overlap to some extent with theory. Theory, in its turn, is also closely linked and overlap to some extent with the methods that are used, since these are necessary to locate and to some extent also analyse the phenomena that are studied in sociology (Table 1).

This also means, the argument continues, that looking at methods as separate from theory, and at theory as separate from methods, will lead to distortions in the analysis. Theory that is cut off from methods, will tend to become abstract and out of touch with social reality. Researchers will in this situation increasingly turn to methods, since these will be seen as at least delivering the facts. They will also try to develop their own theory on the bases of these analyses and disregard the sociological tradition.

## 1. Method as a means to an end

The most common understanding and use of a method in today's sociology is simply as a technical means to an end. A method is seen as a tool, an instrument, a kind of technology. 'Methods are means to an end', to quote John Levi Martin's recent book on methods (Martin 2017, 1). Or to cite Robert Alford: 'techniques for collecting, verifying and evaluating the validity and reliability of specific kinds of evidence constitute the narrow meaning of 'method' and comprise the skills usually taught in methods courses' (Alford 1998, 12; see also e.g. Boudon 2003, 392; Bakker 2007).

While there exists a large number of books and articles on specific methods, it is rare with works that discuss what is meant with a method in the first place. This is instead taken for granted (e.g. Buchler 1961; Francis 1962; for partial exceptions, see e.g. Cohen 1989, 24–5; Abbott 2004, 13–15; Stinchcombe 2005, 1–2). In this view, methods display a good deal of what Max Weber calls instrumental rationality. The general idea is that if you carefully follow the instructions of a method, you will be able to advance in an orderly and logical fashion to your goal. Or to cite Morris Cohen: 'The term method denotes any procedure which applies some rational order or systematic pattern to diverse objects' (Cohen 1933; for a critique, e.g. Law 2004).

**Table 1.** Major methods in sociology.

Stinchcombe	Abbott	Crothers-Platt
quantitative methods	standard causal analysis	quantitative
historical methods	historical narration	mainly quantitative
ethnographic methods	ethnography	mixed methods
experimental methods	formalization	mainly qualitative
	small N-comparisons	qualitative

Comment: There exists no obvious way in which to classify the various methods that are used in sociological research. The methods cited by Stinchcombe have been selected because of the way these 'address causal questions'. Abbott's list is based on what he regards as 'conspicuously successful methods [in sociology]'. Crothers and Platt emphasize that methods can be classified along different 'methodological axis', such as size, intrusiveness, quantitative/qualitative, the way causality is isolated, and more (2010).

Source: Andrew Abbott, *Methods of Discovery* (2004, 15); Arthur Stinchcombe, *The Logic of Social Research* (2005, 1); Charles Crothers and Jennifer Platt, 'The History and Development of Sociological Social Research Methods' (2010, 44 ff).

What is also characteristic of the ways in which methods are viewed in today's sociology, and closely related to the perception of methods as means to a goal, is that methods can be applied to any phenomenon that is seen as *social*. From this perspective, there exists no need to refer to the basics of sociology or otherwise to the sociological tradition when a certain method is selected and used. All you need to do is to apply a solid method to something that is social, a term that is vague to the point of being meaningless.<sup>1</sup>

The view of methods as a means to an end can be contrasted to the major argument of this article, namely the suggestion that theory and method should not be viewed as separate and independent of one another; and that there exists a specific reason for this. According to this perspective, which will now be briefly presented, theory and method are closely linked together and partly overlap. Theory is consequently not independent of methods, and methods are not just “atheoretical” tools’ (Denzin 1970, 5). The reason for the close and organic link between theory and methods is that sociology has a *specific research object*; and that this informs the whole sociological research process. In a sociological study, in other words, *what* is studied – the object of research – has direct consequences for *how* it is studied.

Sociology, from this perspective, does not simply study anything ‘social’ or what is referred to as social in everyday language. This is much too vague and has little to do with any serious attempt to analyse social phenomena. Instead sociology has its own distinct object of study, like any science. This object of study is determined by the way that sociology is defined. This is an argument that can be found in the works of a number of major sociologists; and it is most thoroughly discussed in the classics (but see also e.g. Bourdieu, Chamboredon, and Passeron 1991; Goldthorpe 2016). Emile Durkheim refers to the basic units of sociology as *social facts*, which are directly linked to the existence of groups as opposed to individuals. Max Weber speaks of *social action*, which is defined as action oriented to others and invested with a meaning. Social action, Weber says, constitutes ‘the central subject matter’ of sociology and is *decisive for its status as a science* (Weber 1978, 24; emphasis added).

These basic units are then used as building blocks for more complex configurations and structures of various kinds, such as groups, classes, institutions, and so on. These are all directly related to methods since special ways are needed to locate, document and measure them. How they come into being and how they change also have important consequences for the ways in which causality, categories and more are conceptualized in a sociological analysis.

An effort will also be made in this article to outline what happens when a sociological analysis is carried out as if there exist *no* links between methods and theory, as if they were separate and independent of one another. When theory is understood without regard for the consequences it has for the methods that are used, and the methods without regard for the consequences they have for theory, the research may go astray in a number of respects. Sociologists who use methods that are cut off from theory run, for example, the risk of focusing on subjects that are social but not sociological. And sociologists who work with theories that are cut off from methods, run the risk of losing touch with reality.

The consequences of this situation are many; they also change over time and tend to get worse. When research is made without taking the subject matter of sociology into

account, a gap between *research* and theory tends to develop. That such a gap exists in modern sociology is well known and has been criticized for a long time (e.g. Merton 1949, 4; Bourdieu and Wacquant 1992, 224; Abbott 2001, 77). In the words of John Goldthorpe, the gap between research and theory constitutes ‘the scandal of sociology’ (Goldthorpe 1997, 405).

One reason why this type of situation may get worse over the years is that theory, which has developed without direct contact with reality, tends to become increasingly irrelevant. It will be driven back onto itself and focus exclusively on topics such as the history of theory, how some theory was initially understood, and the like.

And faced with theories that do not relate to empirical reality, empirical researchers are likely to develop their own theory. But it will be a theory that is based on an analysis of social data, social events and ideas of causality that are *not* organically linked to sociological theory of the type that we can find in Durkheim and Weber. Methods will not be aimed at sociological facts but at *social* data, not at sociological phenomena but at *social* phenomena. Causality will similarly tend to be cast in the form of explanations that fit *social* phenomena, not sociological ones.

The end result of this type of sociological research will be a kind of fragmented and incoherent theory. It will be incoherent because the individual studies that are produced in this way are not linked to one another. To cite James Davis, a well-known methodologist:

What is wrong [with this type of empirical research] is that sociology is incoherent. It does not cohere (“to stick together; be united; hold fast, as parts of the same mass”). While each article/book/course may be well crafted, they have little or nothing to do with each other. They may share methods and even data sets (and grammatical voices so passive as to suggest a drug problem) but each is about a unique problem with a unique set of variables. (Davis 1994, 179–80)

In discussing the relationship between theory and methods in modern sociology, something should also be said how this has been affected by the split between quantitative and qualitative methods in sociology (e.g. Raftery 2005; Aspers and Corte 2019). This split is very strong in modern sociology; and according to some researchers one can even speak of ‘two cultures’ (e.g. Goertz and Mahoney 2012). The differences between the two camps widened considerably after WWII when quantitative methods started to be used in U.S. sociology on a big scale (e.g. Wilner 1985).

In discussions of quantitative versus qualitative approaches it is usually the difference between the two that is discussed. What they have in common, however, is of more interest for the main theme of this article. This is that both perspectives tend to define themselves primarily in terms of methods and not theory.

As a consequence of their view of methods, the attitude of quantitative and qualitative sociologists to theory also differs on a few accounts. Quantitative scholars are often hostile or indifferent to the kind of sociological theory that is taught in today’s theory classes, and more generally to any kind of theory that cannot be directly tested through quantitative studies. Qualitative scholars, in contrast, use classical theory as well as modern theory, even if they do not emphasize the organic link between theory and methods that comes from sociology having its own distinct object of study.

But it is clear that there also exists variation in both camps. One can, for example, find a certain reluctance to speak of theory at all among qualitatively oriented sociologists, as exemplified by such central figures as Everett C. Hughes and Howard Becker (e.g. Becker 1998, 1–2; Becker 2011). This reluctance is linked to the feeling that theory is such an integral part of the research process that it is neither necessary nor helpful to single it out for special attention. Theory must be used in research but not talked about as a separate subject. The drawback with this stance is that it becomes hard to further develop theory if it is treated in this manner.

A more radical version of the reluctance to explicitly refer to the tradition of sociological theory can be found in grounded theory (Glaser and Strauss 1967). Here the production of theory is encouraged, but it should be the kind of theory that grows directly out of the empirical research that is undertaken. The link to classical statements about the object of study in sociology remains unclear; and theory construction tends to be seen as induction based on data about social phenomena, rather than on data about sociological phenomena.

While many qualitative sociologists are ambivalent to theory when it comes in the form of explicit hypotheses and covering laws, they are very positive to one of its basic components, namely concepts. These often play a central role in the analyses of qualitative scholars; and are in some cases even equated with theory, especially when the main thrust of the analysis is descriptive rather than explanatory.

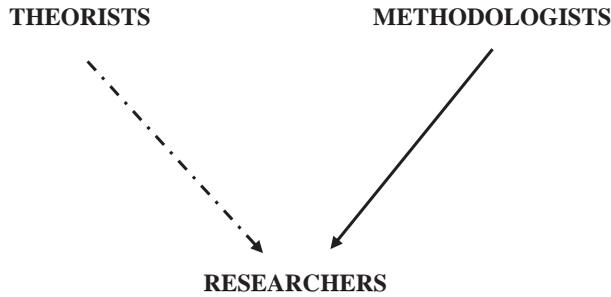
One famous example of the tendency to equate concepts with theory can be found in Herbert Blumer's article 'What is Wrong with Social Theory?' (Blumer 1954). Where social theory goes wrong, it is here argued, is in its attempt to create so-called definitive concepts or concepts with a meaning that is fixed once and for all. According to Blumer, this type of concepts simply do not and cannot exist. What sociology should aim for is instead so-called sensitizing concepts, that is, concepts that work primarily as guides for the researcher to social reality.

Quantitative scholars have shown considerably less interest in theory than qualitative scholars. Paul Lazarsfeld, arguably the most important advocate of quantitative methods in modern sociology, had little understanding of theory and the basic principles of sociology (e.g. Merton in Rogers 1997, 247; Coleman 1980, 171, 1990, 89; Turner 2009, 198).<sup>2</sup> According to John Goldthorpe, many quantitative sociologists have also given up on what is known as 'theory' in modern sociology, and feel that 'they can happily disregard [it] as having no bearing on the problems they address' (Goldthorpe 1997, 405; see also e.g. Sorensen 1991, 516; Turner 2007, 27).

Goldthorpe says that his view is based more on what sociologists think and say among themselves than what can be found in their writings and public statements (Goldthorpe 1997, 419 n1). This is worth noting; and it may be true that many sociologists have much stronger feelings about the role of methods and theory than what they want to put in their written work or otherwise state publicly (see also Figure 1).

In the absence of a live tradition of sociological theory, which is nourished by ongoing research, quantitative scholars have begun to develop their own theory, what can be called a kind of *ersatz theory*. This type of theory, which relies very heavily on statistics, has come to dominate many subfields in U.S. sociology.

Instead of using statistics to trace and analyse the sociological object of research, the logic of statistics has often taken the upper hand in this type of theory (e.g. Coser 1975;



**Figure 1.** The Triad of Roles in Modern Sociology, according to Aage Sorensen.

*Comment:* According to Aage Sorensen, ‘In the language of sociometry, the three roles [of the modern sociologist] form a triad. In this triad asymmetric ties connect methodologists and theorists to researchers, but there are no ties in the other direction or between theorists and methodology. Methodologists tell researchers about the proper procedures and techniques ... Theorists tell researchers about the importance of theory, but not which ideas are interesting for empirical research. Mostly they tell each other which theory is superior or, even better, which theory about theory is the best’.

Source: Aage Sorensen, ‘Merton and Methodology’ (1991, 517).

Collins 1984; Hedström 2005, 20–23). This has been the case for a long time, even if several sociologists have tried to bend statistics to the special demands of a sociological analysis (e.g. Raftery 2001, 2005). The popular method of path analysis can, for example, be described as an attempt to reduce the kind of causality that is characteristic of sociological phenomena to a statistically based logic (Abbott 2001, 110–11). In the words of Andrew Abbott, ‘causality was now seen as a property of mathematical and statistical propositions rather than as a property of reality’ (Abbott 2001, 111; see also Bernert 1983).

To create sociological theory with the help of statistics is also made difficult by the fact that what is sociological is often confused with what is merely social. This means that the type of data that is used often tends to be based on everyday categories and not on sociological categories. Modern surveys, for example, often tend to produce data of this type. Also in this way statistics has helped to create an incoherent type of theory (Davis).

Critiques of the ways in which statistics is used in modern sociology have been common also among well-known methodologists, with charges of ‘our Faustian bargain with statistics’, ‘obsession with regression’, ‘correlationology’, ‘statisticism’, and more (e.g. Duncan 1984, 226–7, 1992, 668; Lieberman 1985; Goldthorpe 2000, 2016, 99–111; Firebaugh 2008, 209; see also e.g. Freedman 1991; Xie 2007). While some of these terms are self-explanatory, Duncan’s definition of statisticism deserves to be spelled out since it covers several phenomena:

the notion that computing is synonymous with doing research, the naïve faith that statistics is a complete or sufficient basis for scientific methodology, the superstition that statistical formulas exist for evaluating such things as the relative merits of different substantive theories or the “importance” of the causes of a “dependent variable”; and the delusion that decomposing the covariations of some arbitrary and haphazardly assembled collection of variables can somehow justify not only a “causal model” but also, praise the mark, a “measurement model”. (Duncan 1984, 226–7)

The sense among many quantitative scholars that existing theory is of little help in their empirical research may also have influenced their use of concepts, which is something that should also to be mentioned in this context. What seems to have happened is that the task of operationalizing concepts has many times been seen as so demanding and difficult that the concepts themselves have been pushed to the side and disregarded. In some cases the concepts have simply been equated with their operationalizations; in others they have vanished totally from the analysis (see [Table 2](#)).

## 2. Methodology

The terms method and methodology are often used interchangeably in modern sociology; and the reason for this is closely related to the argument presented in the previous section. This particular use of the term methodology, it should be noted, differs from the way it is understood outside of sociology; and it is with the latter meaning that we will start. Methodology is usually seen as overlapping to a large extent with the philosophy of science through its focus on the whole process of inquiry, that is, on theory as well as on methods (e.g. Popper 1959; Lakatos and Musgrave 1970; Hempel 2000).

What is often discussed in methodology are the presuppositions of various sciences and the foundations on which they are based. Methods as well as theory are included here, typically at a certain level of abstraction. According to Raymond Boudon:

This notion [that is, methodology] designates the critical activity directed by scientists toward the procedures, theories, concepts and/or findings produced by scientific research, [and] should not be confused with “technology”, that is, the activity of dealing with the techniques, devises and recipes used by scientific research. (Boudon 2003, 392)

Methodology, in other words, is not practical, in the sense that it presents a method in such a way that it teaches the reader in how it can be used; instead it is usually situated at a more general and abstract level. This does not mean, however, that you need to have a thorough knowledge of the presuppositions and foundations of some science, say sociology, in order to do good research. On this last point Weber’s remark about methodology is often cited:

methodology can never be more than a self-reflection on the means that have *proved useful* in [scientific] practice; and one does not need to be made explicitly aware of those means in

**Table 2.** Contrasting qualitative and quantitative research.

Criterion	Qualitative	Quantitative
Concepts and measurement	Concepts are centre of attention; errors leads to concept revision	Measurement and indicators are centre of attention; error is modelled and/or new indicators identified
Approaches to explanation	Explain individual cases; ‘causes-of-effects’ approach	Estimate averaged effect of independent variables, ‘effects-of-causes’ approach
Conception of causation	Necessary and sufficient causes; mathematical logic	Correlational causes; probability/statistical theory
Equifinality	Core concept; few causal paths	Absent concept; implicitly large number of causes
Scope and generalization	Adopt a narrow scope to avoid causal heterogeneity	Adopt a broad scope to avoid maximize statistical leverage and generalization

Comment: The title of the table is that of the authors. The original table also includes the following items: multivariate explanations, case selection practices, weighting observations, substantively important cases, and lack of fit.

Source: James Mahoney and Gary Goertz, ‘A Tale of Two Cultures: Contrasting Quantitative and Qualitative Research’ (2006, 229).

order to produce useful work, just as one does not need to have knowledge of anatomy in order to walk “correctly”. (Weber [1906] 2012, 140; emphasis in the text)

This statement, however, should not be misunderstood. It is important for sociologists to have a general knowledge of the foundations and presuppositions of the theory and methods that they use in their research. This is especially the case when it comes to modern statistical or computational methods, since it can be difficult to fully comprehend their presuppositions and the assumptions on which they rest. Merton approvingly cites Whitehead’s statement that ‘you cannot know too much of methods which you always use’ (Merton 1973, 62; Whitehead 1929, 152). He also notes that ‘it is the methodologically naïve, those knowing little or nothing of the foundations of procedure, who are most apt to misuse precise measures on materials’ (Merton 1973, 63).

As an example of a study that outlines and discusses the foundations and presuppositions of a method in statistics in an instructive manner, one can mention Andrew Abbott’s well-known article ‘Transcending General Linear Reality’ (Abbott 2001, 37–61). It is here shown how a standard way of modelling social phenomena ( $y = Xb + u$ ), can also blind you to important aspects of social reality.

The basic assumptions in this type of statistical analysis, Abbott says, are the following. The entities (individuals or collectives) have attributes (variables), which interact and in this way create the outcomes. The past as well as the context are disregarded. Everything has only one meaning; and the order in which the variables interact is of no importance.

As earlier mentioned, methodology, as this term is traditionally understood, does not only deal with methods *but also with theory*. To cite Boudon again: ‘methodology ... is applicable to all types of [sociological] research, whether it concerns quantitative studies or qualitative studies, work with a theoretical orientation or sociographical studies’ (Boudon 1986, 239).

That not only methods but also theory is an integral part of methodology, is also the view of Merton. According to *Social Theory and Social Structure*:

Methodology is not particularly bound up with sociological problems ... Sociologists, in company with all others who essay scientific work must be methodologically wise; they must be aware of the design of investigation, the nature of inference, the requirements of a theoretic system. (Merton 1968, 140–41)

This view, however, is not the predominant one in modern sociology, where methodology is seen as dealing *exclusively* with methods and not at all with theory. The historical break-up of theory and method, which was earlier mentioned, has in other words also taken place in methodology. Exactly when this happened is not clear but it would appear that Paul Lazarsfeld played an important role in this process, especially through his reader (with a former student) called *The Language of Social Research* (1955).

This volume presents methodology as being overwhelmingly concerned with technical ‘procedures’; and these procedures have little, if anything, to do with theory (Lazarsfeld and Rosenberg 1955, 4). One important reason for this, as Lazarsfeld explains elsewhere, is that there does not yet exist anything worthy of the name theory in sociology (Lazarsfeld [1959] 1993, 238). Most of the essays in *The Language of Social Research* were also devoted to a presentation of various quantitative methods. A major goal of the volume, according to the editors, was to make it useful to graduate students in their training. Methodology, in brief, had here become another term for methods.

The impact of the Lazarsfeld-Rosenberg reader on U.S. sociology is generally seen as having been huge. When Stinchcombe reviewed the second edition some twenty years later, he said that it ‘was probably the most important book in methodology in the discipline’ (Stinchcombe 1974, 128). And according to Andrew Abbott, it was *The Language of Social Research* that ‘established the modern concept of methodology [in sociology]’ (Abbott 2001, 118; see also e.g. Sorensen 1998, 242).

Theodor Adorno, who spent the years 1938–1949 in the United States, has said that the term methodology had a different meaning in the United States than in Europe. ‘I was disturbed ... by a basic methodological problem – understanding the word “method” more in its European sense of epistemology than in its American sense, in which methodology virtually signifies practical techniques for research’ (Adorno 1969, 343).

Talcott Parsons has made a similar observation about the meaning of the term methodology:

it has often been remarked upon that in American social science the word “methodology” refers in general to research techniques, whereas in German usage it refers rather to what we sometimes call the philosophy of science, that is, the grounding of the status of its frames of reference and conceptual scheme. (Parsons 1979/1980, 5)

As an example of the tendency in contemporary sociology to exclude theory from methodology, and to equate methodology with techniques for how to collect and analyse data, one can cite Abbott’s definition of the term:

*Methodology* [is] the discipline of investigating methods. The word is also often used as an equivalent of *method*, as in the phrase “What is your methodology?” meaning “What method did you use?” (Abbott 2004, 251; emphasis in the text)

A similar viewpoint can be found in the mission statement of ASA’s Section on Methodology:

The term methodology shall be interpreted in its broadest sense to include the development of investigative methods appropriate to any branch of sociology, of a qualitative or quantitative nature, for data collection or analysis, and such other interests as may be useful in sociological research. (ASA Section on Methodology 2020)

In the two last examples the term methodology has nothing to do with theory. Its generality as well as its philosophical elements have also either been removed or seriously weakened; and the term methodology is basically used as synonymous with research methods (for some other examples of this tendency, see e.g. Sorensen 1991, 516; Clogg and Arminger 1993; Lara et al. 2004; Rau and Lindemann 2010; Alvin and Thomas 2016). A methodologist is someone who specializes in methods but without taking sociological theory into account; ‘methodologists tell researchers about the proper procedures and techniques’ (Sorensen 1991, 516).<sup>3</sup>

Reducing the meaning of methodology in this manner may also have consequences for how sociological research is conducted. This is the argument, for example, of Pierre Bourdieu and two co-authors in their study of methodology called *The Craft of Sociology*:

When ... the term “methodology” is used to dignify what is never more than the decalogue of technological precepts, one evades the real methodological question, which is that of the choice among techniques (metrical or not) by reference to the epistemological significance

of the effects that the chosen techniques have on the object and the theoretical significance of the questions that one wants to put to the object to which they are applied. (Bourdieu, Chamboredon, and Passeron 1991, 39)

Since quantitative methods advanced at a quick pace in the United States after WWII, this also meant that methodology now started to become increasingly identified with this type of methods. This tendency was criticized by some advocates of qualitative methods. In 1969 Herbert Blumer wrote that ‘today ‘methodology’ in the social sciences is regarded with depressing frequency as synonymous with the study of advanced quantitative procedures’ (Blumer 1969, 24). A year later Howard Becker published an essay called ‘On Methodology’, in which he criticized some sociologists for only dealing with quantitative methods when they discussed methodology. Becker himself defined methodology as ‘a concern with method’; and he accused quantitative sociologists for having turned it into ‘a proselytizing specialty’ (Becker 1970, 3–4).

What also happened around this time, and which Blumer and Becker did not criticize, is that the meaning of the word *research* would from now on also be closely linked to methods but not to theory. In short, to do research in sociology you need methods but not theory. In hindsight, this was implicit already in the Lazarsfeld-Rosenberg reader, which symbolically enough was entitled *The Language of Social Research*. But the notion that you need methods but not theory to do research seems to have taken some time to sink in. This issue will also be discussed later in this article.

### 3. The scientific method

The word method is sometimes also used in sociology as part of the expression the scientific method. This expression is often mentioned in connection with the birth of modern science during the early modern period (e.g. Laudan 1968; Andersen and Hepburn 2016). The scientific method describes, in all brevity, the way in which the analysis of nature and cosmos now began to be carried out by people like Galileo, Bacon and Descartes. In contrast to the syllogisms, deductions and other non-empirical methods that were used by the medieval scholars, the emphasis now shifted to other ways of doing science, such as observation, induction and the use of experiments. In the words of Poincaré, a few centuries later, ‘the scientific method consists in observation and experiment’ (Poincaré 2015, 3).

The notion of method that was used during the Scientific Revolution included both what we today would call theory and method. In fact, the term theory was not used at all by Galileo et al during the 1600s since it was equated with the speculative and scholastic approach of the Middle Ages (e.g. Wootton 2015, 397–9).

If we turn to the term method, one can illustrate the meaning it acquired during the Scientific Revolution with the view of Descartes. ‘By “a method”’, Descartes wrote,

I mean reliable rules which are easy to apply, and such that if one follows them exactly, one will never take what is false to be true or fruitlessly expand one’s mental efforts, but will gradually and constantly increase one’s knowledge till one arrives at a true understanding of everything within one’s capacity. (Descartes [1628?] 1985, 16)

Before discussing how sociologists have understood and used the notion of the scientific method, it should be mentioned that several question marks about the standard view

of the scientific method have been raised in recent scholarship in the history of science (e.g. Shapin 2018). While some scholars did in fact use induction, observation and experiments during the Scientific Revolution, there were many who did not. There was also considerably more continuity between the ways in which science was viewed before and after this period, than was earlier believed.

What has not been challenged, however, is that Descartes and many others used the term method in a very broad sense, well beyond the current notion of method in sociology as a technical means to an end. As noted earlier, the term theory was not used at all during the Scientific Revolution:

If we look for the words “theory”/théorie/teoria in Galileo, Pascal, Descartes, Hobbes, Arnauld and Locke, we find nothing, while in Hume [that is, from the mid-1700s] we find the word used in its modern sense frequently – and more and more so as time goes by. (Wootton 2015, 395)

The term method, in contrast, was often used by Galileo and other major scientists, as an electronic search of their works will quickly show.

A number of sociologists have been inspired by what they viewed as the scientific method, from Auguste Comte and onwards. Some sociologists have, for example, insisted on the importance of trying to establish sociological laws and in other ways closely follow the natural scientists (e.g. Lundberg 1938; Homans 1961; Wagner 2020). This tendency, however, has also led to a severe critique in sociology, both from mainstream scholars and more radical critics (e.g. Merton 1968, 150; Steinmetz 2005).

The situation is somewhat different when it comes to the use of induction and observation. Both of these procedures have been very important for the development of mainstream sociology and are rarely challenged today. Sociology can on this point be contrasted to economics, where both description and induction play less of a role.

From early on Durkheim was interested in the different ways in which the notion of method was used in the various sciences (Durkheim ([1883] 2004, 205–20). His own stance towards the scientific method was very positive; and the way that he used it in sociology exemplifies the main theme of this article, namely that theory and method are closely linked and partly overlap because of the way in which the object of sociology is defined. He was also in favour of the tendency in natural science to use observation and to present empirical proof.

In *The Rules of Sociological Method*, Durkheim tried to adapt what he found useful in the scientific method to sociology; and he carefully outlined the steps that are necessary to follow in order to produce a rigorous sociological analysis. He especially emphasized the importance of beginning the sociological research process by constructing the object of study according to basic sociological principles. The way that this was done, he noted, had important consequences for the type of theory that should be used as well as the kind of methods.

It is absolutely imperative, Durkheim also said, to *not* start the analysis with some everyday notion of what is going on in society. Instead of just selecting something for study that is generally seen as ‘social’, you need to carefully outline the sociological object of research. In doing so you have to approach your topic, Durkheim says, as if you were a visitor entering a foreign country. The focus must be on observing what he called *social facts*; and these were related to groups, not to individuals.

The next step in the sociological research process is to order the social facts that have been collected in various ways. A typology might be helpful at this stage. Then comes the explanation; and here the basic rule is that you can only use social facts to explain other social facts. The explanation also needs to be accompanied by a determination of the function of what is being studied. The last step in the research process is to provide proper evidence.

Durkheim, as is clear from this account, insisted that there exist close and organic links between theory and method, by virtue of the special object of research in sociology ('social facts'). Later sociologists, in contrast, have tended *not* to do so. While the reasons for this can be discussed, it is clear that the perception of what constitutes the scientific method among sociologists underwent an important change during the twentieth century. To illustrate this one can point to some of Merton's essays that were published during the 1950s. In their French translation Merton gave them the following title, with a clear nod to Durkheim whose work he deeply admired: *Éléments de méthode sociologique* (Merton 1953).

An important theme in Merton's essays is that sociology is suffering from a huge gap between theory and *research*, and that this must be overcome. Note that Merton does not speak of the link between theory and *method*, as Durkheim does in *The Rules of Sociological Method*, but of a gap between theory and research. This way of posing the problem, however, can lead you wrong.

The goal of Merton's essays in the French volume (which English-speaking readers know as *Social Theory and Social Structure*) can be described as an important effort to reunite theory with empirical research. To make this happen, Merton says, sociologists should try to establish a 'two-way traffic' between theory and research (Merton 1968, 279). If this is done, the gap between the two will eventually disappear.

The reasons for the two-way traffic having this effect are according to Merton the following. Research can contribute to theory by supplying it with data, which can lead to adjustments in the theory and in the concepts that are used. Research can also in other ways facilitate the creation of new theory. Similarly, theory can be of assistance to empirical research. This can e.g. be done by showing how empirical results can be generalized and recast in the form of propositions and theory.

From the perspective of this article, it is of interest to again point out that Merton does not speak in terms of linking up theory and *methods* but of closing the gap between theory and research. For this to make sense, however, note that the term research has to be used in a very special sense, namely as research that is done *without theory*.

As mentioned earlier, this way of using the term research is not uncommon in modern sociology. As another example one can mention *The Logic of Social Research* by Arthur Stinchcombe, which despite its title is described by its author as a 'methods textbook' (Stinchcombe 2005, 183). Or take *The Practice of Research*, which can be described as a recent textbook among many (Khan and Fisher 2014). It contains nine essays, all about different methods but none about theory. And similarly, of the seven rules for social research that Glenn Firebaugh discusses in his book with this title, none deals with theory (Firebaugh 2008).

#### 4. Methods as part of a craft

A craft (*technè*) was originally seen as very different from science (*epistèmè*), but attempts to bring the two a bit closer together have been made over the years, also in sociology (e.g. Parry 2020). When this is done, sociology itself is typically presented as a craft, meaning by this that methods as well as theory are handled in a very special manner. The two also tend to mix and overlap.

In this case, however, methods and theory are not linked together because sociology has a special object of study, which is what has been discussed so far. The reason has instead to do with the practical nature of carrying out sociological research, and how this can be done in the best possible way.

For a sociologist to truly qualify as a craftsperson, she must get to the point where the individual elements of the research process are handled in a nearly unconscious manner; where the hand, so to speak, works in full unison with the head (e.g. Sennett 2008). This can only happen as a result of much practice. It is a type of skill that is largely tacit and procedural in nature, something that also helps to explain why theory and method are so close in the vision of sociology as a craft (e.g. Polanyi 1966; Collins 2012; Fantl 2017).

Two well-known advocates of sociology as a craft are C. Wright Mills and Pierre Bourdieu (see also e.g. Alford 1998). For Mills, the idea of craftsmanship was an integral part of his life philosophy which he also extended to sociology, including the relationship between theory and method. A sociologist, should in his view be able to handle both theory and methods in the skilful and practical way that is characteristic of a craftsperson. 'Let every man be his own methodologist; let every man be his own theorist; let theory and method again become part of the practice of craft' (Mills 1959, 224).

Mills' vision of the close relationship between theory and methods differs on several points from that of Durkheim and Weber. Most importantly, Mills does not view it as a consequence of how the basic units in sociology are defined. What in his opinion is characteristic of sociology as a science is not that it is based on a specific object of study, such as social facts, social action and the like, but on something else. According to Mills, sociology is defined through its attempt to answer three crucial questions: What is the social structure of a society? What is its place in human history? And, what types of people are prominent in this society? (Mills 1959, 6–7).

From this perspective, methods are means that help the sociologist to gather data on these three issues. But in Mills' mind this was not how things were seen by the leading methodologists of the time. Through their single-minded focus on a few quantitative methods, Paul Lazarsfeld and other advocates of the quantitative approach had cut themselves off from the central issues of sociology. Facts related to these issues were often not collected, simply because it could not be done with the help of existing methods. As a result, Lazarsfeld et al tended to end up with studies that were based on 'unrelated and often insignificant facts' (Mills 1959, 23, 50 ff.).

Also Bourdieu views sociology as a craft or a set of practical skills that you need to master, as opposed to something that you can absorb just by reading. Sociology is in this way, he says, not very different from science in general:

the difficulty of initiation into any scientific practice (whether quantum physics or sociology) lies in the fact that a double effort is required in order to master the knowledge theoretically, but in such a way that this knowledge really passes into practice, in the form of a

“craft”, “knacks”, an “eye” etc., and does not remain in the state of a meta-discourse about practices. (Bourdieu 2004, 40)

Of modern sociologists, Bourdieu is probably the one who has argued the most forcefully that theory and methods belong together, and are part of what he calls ‘the unitary process [of *sociological* research]’ (e.g. Bourdieu, Chamboredon, and Passeron 1991, 57). He does this to some extent through his view of sociology as a craft but mainly for other reasons. Citing not only the work of Durkheim but also the methodological writings of Weber and Marx, Bourdieu insists that *the sociologist must create her own object of research*, and not just study what presents itself to her as an observer (see especially Marx 1973; Weber 2012).

Sociology, according to Bourdieu, has its own way of selecting out from reality what to study, just as any science; and what is being selected is not what people view as ‘social’. There exists in society a kind of folk sociology, which Bourdieu calls ‘spontaneous sociology’, and it must at all cost be avoided by the sociologist (e.g. Bourdieu, Chamboredon, and Passeron 1991, 15, 67). The focus should be on the specific object of sociology as a science, which in the case of Bourdieu means the primacy of relations between people.

This way of looking at sociology has important consequences for Bourdieu’s perception of how theory and methods are linked together. It means that the methods have to fit the object that is being studied. It also means that theory has to be in contact with what is going on in society; and special methods are needed for this.

As an example of how methods can fail to connect with sociological theory, Bourdieu cites random sampling which is often unable to fully capture a sociological phenomenon since it tends to isolate individuals from their surroundings. Something similar happens when the methods are reliable but the theory is wrong. If your analysis is based the theory of mass society, for example, not even the best of methods will help you to understand how information is diffused in society (Bourdieu, Chamboredon, and Passeron 1991, 39–40, 60 ff.).

## 5. The heuristic method

Heuristics is a type of method that has been little used in sociology, but which has the potential of being of considerable help. It has its origin in Antiquity and the famous ‘Eureka’ of Archimedes (*I have found it!*). It differs from other kinds of methods through its unique emphasis on discovery: and it was originally known as *ars inveniendi* or the art of discovery. Theory is rarely singled out and separated from method in heuristics; it is part of the general approach.

Heuristics is also deeply practical in nature; what counts is to solve some problem, however this is done. As a famous example one can mention Archimedes’ approach to deciding if a crown was made of pure gold or a mixture of gold and silver. He simply lowered the crown into water and measured how much water it displaced.

There exists no general history of heuristics, but some individuals are often mentioned when this approach is discussed (e.g. Groner, Groner, and Bishof 1983; Nickles 1987; Hertwig and Pachur 2015). From the 1600s, for example, Descartes and Leibniz are two of these; Bolzano is another key person, but from a later period. All, however,

tried to formulate general ideas for how to solve scientific and philosophical problems in a practical way.

Descartes' *Discourse on the Method* (1637) is one of the most famous writings in the tradition of heuristics. The basic idea is that in order to solve a problem and make a discovery you first of all need a method. A method is what allows you to think analytically and find a solution. 'We need a method if we are to investigate the truth of things' (Descartes [1628?] 1985, 15; emphasis added).

If you do not have a method, Descartes says, the only way you will make a discovery is by chance. You will be like a person who spends the time walking up and down the streets, hoping in this way to find a 'treasure ... that a passerby might have dropped' (Descartes [1628?] 1985, 16). 'This is how almost every chemist, most geometers, and many philosophers pursue their research'.

What the rules that inform Descartes' own method look like will be described in a moment. Before this, however, a special mention should be made of mathematician George Pólya, who in his popular book *How to Solve It* (1945) can be said to have democratized the idea of heuristics. He did this by suggesting a number of ways in which the average person can improve her capacity to solve mathematical problems. From being a tool for scientists, the idea of heuristics now also became a tool for the average person.

A small number of sociologists have explicitly drawn on the heuristic tradition as well, such as Max Weber, Pierre Bourdieu and Andrew Abbott (e.g. Weber [1904] 2012, 125–33; Bourdieu, Chamboredon, and Passeron 1991; Abbott 2004). In the United States Howard Becker has devoted a full volume to this topic, *Tricks of the Trade: How to Think about Your Research While You Are Doing It* (1998). Becker does not explicitly refer to the tradition of heuristics and differs in this respect from Andrew Abbott, who mentions Pólya, as an important source of inspiration. Abbott's own book in heuristics appeared in 2004 under the title *Methods of Discovery: Heuristics for the Social Sciences*.

The works of Becker and Abbott contain many helpful suggestions for how to solve practical problems that can emerge when you do sociological research. What you find here, in other words, is not a general approach, as in Descartes and the other classics, but a number of helpful and practical hints, as in Pólya.

Nor do Becker and Abbott refer to the organic link between theory and methods that is central to heuristics. Becker, as mentioned earlier, prefers not to speak of theory at all. Abbott's view of theory and methods are the usual ones in contemporary sociology. In his book on heuristics, he for example defines the term method without explicitly mentioning its relationship to theory: 'Method [is] a set of standardized procedures and assumptions or carrying out some form of rigorous social analysis' (Abbott 2004, 251).

Abbott and Becker, to repeat, draw very little on the original tradition of heuristics. This tradition, however, may be well worth resurrecting so it can be used more fully also in sociology. One of its classic expressions can be found in *Discourse on the Method* (1637) with its discussion of the rules that Descartes had developed for himself (Descartes [1637] 1968). According to Descartes they had been of great help to him in solving problems in science and philosophy.

Even if Descartes emphasized that these were his own rules, and for this reason might not be useful to everyone, they are well worth repeating. Always begin the analysis, he says, by radical doubt. Also doubt your first ideas and impressions when you analyse something. Focus on what is truly basic, and proceed from there. Think deeply, Descartes

says, and in a sustained manner. Do so also with the ways in which you proceed when you approach a problem and how you solve it. Finally, always take the limitations of the human mind into account; and remember that some problems cannot be solved.

## 6. Concluding remarks

The Greek *methodos* suggests a way followed, the pursuit of a path.

– Justus Buchler, *The Concept of Method*<sup>4</sup>

Before inquiring into the method suited to the study of social facts, it is important to know which facts are commonly called “social”. This information is all the more necessary since the designation “social” is used with little precision. It is currently employed for practically all phenomena generally diffused within society, however small their social interest. But on that basis, there are, as it were, no human events that may not be called social.

– Emile Durkheim, *The Rules of Sociological Method*<sup>5</sup>

An attempt has been made in this article to show that the term method has been used in several different ways in sociology; and that is useful to keep these apart. Its most common use is that a method is simply a tool or a means to an end. Students are typically taught methods in classes where theory is not discussed, and theory in classes where methods are not discussed.

Methods also have a more abstract side, which is traditionally discussed in methodology, where the focus is on the presuppositions and philosophical foundations of a science. In modern sociology, however, the term methodology has become synonymous with single methods in all their technical and practical details. Issues relating to theory are also excluded, again in contrast to the way in which methodology is viewed outside of sociology.

When the expression scientific method is used in sociology, reference is typically made to the natural sciences, and that sociological research should be conducted along similar lines. Durkheim was singled out in the article because of the special way in which he tried to adapt the scientific method to sociology. When sociology on the other hand is viewed as a craft, the focus is primarily on the skilful execution of research, in which theory and methods tend to blend into one another.

On two points the article has suggested novelties. The first has to do with the notion of heuristics or the heuristic method. It is argued that sociologists may benefit from knowing more about this tradition. Howard Becker and Andrew Abbott are pioneers in advocating a heuristic approach in sociology. The classical tradition of heuristics, however, goes well beyond what they advocate. Classical heuristics seeks to provide a *general method* for how to make discoveries in science. It can be described as a type of method that helps you to think more deeply and more creatively when you approach a problem. It does not aim to replace existing theories and methods, but to help researchers to use these more effectively.

The second novelty of the article is related to the idea that methods should be discussed and taught in close connection with theory; and that the main reason for this has to do with the fact that sociology has a special research object. This argument is central to the works of Max Weber as well as Durkheim and Bourdieu (e.g. Durkheim [1895] 1964; Weber 2012; Bourdieu, Chamboredon, and Passeron 1991).

The novelty of the article consists in extending this idea, and in showing what happens when sociologists disregard that sociology has its own object of research which must be

carefully worked out. Theory and method then tend to drift apart; theory to become self-centered, and methods to be used for atheoretical purposes; whatever is social will be studied. A new type of ersatz theory will eventually be developed in this situation, which is discontinuous in nature and cut off from the core of the sociological tradition. Ever more sophisticated methods will be seen as a solution to the problems that now emerge. But methods cannot replace theory; methods need theory, just as theory needs methods.

If the argument in this article about the central importance of the research object in sociology is correct, sociologists may want to reconsider some of the ways in which they currently think about theory and methods. Changes may also have to be made in the way that theory and methods courses are being taught, and what the content of textbooks in theory and methods should be like. To do all of this represents a huge, collective task, for which the efforts of many sociologists are needed: researchers, methodologists and theorists.

## Notes

1. The term ‘social’ precedes the first use of the term ‘sociology’ (1839) with many centuries. Over the years it has acquired a huge number of meanings (e.g. OED 2009). Some people, for example, are described as social, while others are anti-social; there are social animals and animals that live alone; and so on. Bruno Latour has criticized the term social for being too narrow to be useful in social science (Latour 2005, 5ff; see also Dolwick 2009). The stance of this article is that the term social is much too broad and vague to be useful in sociology (similarly Bourdieu, Chamboredon, and Passeron 1991; Durkheim [1895] 1982, 501; Luhmann 1992, 67). For problems with using the term society as foundational for sociology, see e.g. Frisby (1986), Luhmann (1992).
2. According to Merton, Lazarsfeld was always asking, ‘What is sociology?’ (Rogers 1997, 247). Also: ‘Paul never believed there was such a subject as sociology’ (Rogers 1997, 247). According to Coleman, ‘Lazarsfeld had a difficult time understanding sociological theory’; he also ‘did not know [theory]’ (Coleman 1980, 171, 1990, 89).
3. The full quote reads:
 

Methodologists tell researchers about the proper procedures and techniques, but use most of their time telling each other about the latest inventions in statistics and econometrics (if they are quantitative methodologists) or in philosophy (if they are qualitative methodologists). Methodologists use research as examples for applications of techniques, but do not use research to discover things. (Sorensen 1991, 516)
4. Buchler (1961, 2).
5. Durkheim ([1895] 1964, 1).

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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