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Theorizing in Sociological Research: A New Perspective, a New Departure?

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Abstract

During the last few years a number of articles and books have appeared that signal the emergence of a novel approach to the role of theory in sociology. Instead of equating theory with important studies, the main focus of this approach is how to use theory in ongoing empirical research and especially what happens before the presentation of the results. The key task is to empower the individual researcher to do better research. A word that keeps recurring, and that can also be said to summarize this approach, is theorizing. Three core ideas of this approach are discussed: Theorizing is of a practical nature, it draws on a number of basic theorizing tools (such as abduction, abstraction, and analogy), and the area covered by theorizing is considerably larger than that of conventional theory. If successful, the approach of theorizing would demand a much more active and central role for the theoretician in sociology.

INTRODUCTION

The main reason for this article is that a number of articles and books have recently appeared in US sociology that signal the emergence of a new approach to the role of theory in qualitative as well as quantitative sociological research (e.g., Knorr Cetina 2014; Lizardo 2012b, 2014b, 2015; Reed & Zald 2014; Swedberg 2014a,b, 2016a,b, 2017a,b; Tavory & Timmermans 2014; Timmermans & Tavory 2012, 2016; Vaughan 2014; Weick 2014; for related viewpoints, see, e.g., Abbott 2004, 2011, 2014; Glaeser 2015; Martin 2015). In one of these articles, there is a reference to "the new theorizing movement" (Lizardo 2015, p. 16).

Instead of equating theory with important works by outstanding sociologists, from Weber to Coleman to Bourdieu, these works focus mainly on how theory is actually being used in empirical research or how sociologists do what is termed theory work (e.g., Gouldner 1970, p. 46; Gouldner 1973, p. 70; Martin 2015, p. 1). A second theme that is closely linked to this approach is an effort to determine how empirical research can be improved through better knowledge of such theory work. A word that keeps recurring, and that can also be said to summarize this approach, is theorizing.

It would be an exaggeration to say that theorizing constitutes a movement in the sense that there exists today a small number of sociologists who cite and follow each other's works and who also share a distinct goal of what they want to accomplish. Still, there are enough common ideas in these works to warrant a discussion and perhaps also to speak of an emergent movement, in the sense of scholars with a common intellectual project (e.g., Camic & Gross 1998, Frickel & Gross 2005; for works with related attitudes to theorizing outside of the United States, see, e.g., Deville et al. 2016, Lury & Wakeford 2012, Pryke et al. 2003). A desire on the part of these authors to radically remake the way that theory is used in empirical research makes this enterprise of general interest.

Through its focus on the actual use of theory in concrete research, this article can be seen as a companion piece to Erin Leahey's important "Methodological Memes and Mores: Toward A Sociology of Social Research" in the *Annual Review of Sociology* (Leahey 2008). Leahey argues that sociology needs to further develop the emerging subfield of the sociology of social research and that this subfield may be of help to sociologists in improving their research.

Leahey, however, restricts her argument to the role of methods and does not address the issue of theory work in the research process. Why all references to theory work have been omitted from her article is not explained, but it is not uncommon in mainstream sociology to equate the capacity to do research with methods, and to basically ignore the role of theory (e.g., Firebaugh 2008, Khan & Fisher 2013; for an early example, see Lazarsfeld 1962).

This article attempts to fill this lacuna in Leahey's work. In doing so, this article emphasizes not only that both theory and method are indispensable to good research, but also that between theory and method there exists a gray area in which each of them needs the assistance of the other. Methods, for example, have a distinctly theoretical side, and to discuss theory without paying attention to methods is seriously incomplete.

It would, however, be hard to produce a survey of sociological studies of theoretical practices that is as rich as Leahey's study of methodological practices. The reason is simply that this type of research is quite rare (but see, e.g., Colquett & Zapata-Phelan 2007, Ehn & Löfgren 2013, Goertz & Mahoney 2012a, Lamont 2010, Swedberg 2017b, Weick 2014). Relatively easy to find, in contrast, are discussions of the way in which single theorists work and discussions of how popular Weber or Marx is among theorists (e.g., Brint & Lavalle 2000, Heilbron 2011, Helmes-Hayes 1998, Lounsbury & Carberry 2005, Markovsky 2008). But as of today, there exist, for example, no surveys or other studies of how sociologists actually work with theory, including, for example, how much time they devote to theory versus methods, which parts of a theory they actually use versus what they ignore, and the like.

Although there is definitely a need for conventional sociological studies of this type, there also exists a need to develop a body of practical knowledge of how to theorize, which can be of help to sociologists in their research. Although these two types of knowledge may overlap, they are not identical. Following philosopher Gilbert Ryle, we may think of practical knowledge as knowledge of how to do something (knowledge-how), as opposed to knowledge that something exists (knowledge-that; e.g., Fantl 2016; Ryle 1945; Ryle 1949, chapter 2). Ryle exemplifies what he means by referring to a pair of binoculars. In knowledge-that, you may describe what the binoculars look like and how they work; in knowledge-how, you know how to use the binoculars and what happens when you look through them. You can learn knowledge-that from others and by studying, whereas you learn knowledge-how yourself and by doing.

Studies of practical knowledge are harder to carry out than standard sociological studies because theorizing is hard to verbalize and even harder to observe for the one who does the theorizing. Much of what is going when you theorize is also subconscious and not accessible to the person who is doing it. Still, this is the knowledge that is truly valuable to have, and it is often in advance of scientific understanding (e.g., Chomsky 1988, p. 180; cf. Chomsky 2016, p. 101). Carrying out studies of the practical knowledge that goes into theorizing, as far as this is possible, should therefore be on the agenda of sociology.

Another important consequence of the emphasis on practical knowledge is that the area that sociological theory deals with now widens considerably. To theorize well, sociologists need to have practical knowledge of how to handle theory during the different phases of their research. Thus, they need to know not only conventional theory, but also something about topics such as abstraction, abduction, analogy, and so on. To have this type of knowledge available, in its formal as well as practical aspects, would be very important. It would both empower the individual sociologist and help her to produce better and more interesting research (e.g., Swedberg 2016b).

THE BASIC TOOLS OF THEORIZING

Through its focus on theory work as a practical process, theorizing is related to the so-called theory construction movement of the 1960s and 1970s (e.g., Zhao 1996, Willer 1996; see Stinchcombe 1968 for a well-known contribution). Theory construction represented an attempt to move beyond the post–World War II discussion of Grand Theory versus Plain Empiricism by focusing on how you put together a sociological theory.

Today there exists next to no teaching of theory that takes the form of theory construction (e.g., Markovsky 2008). The ambition to produce general works on theory construction has also come to an end, while parts of this ambition have been redirected into formal theory and theory of the kind that is associated with work from Stanford University (e.g., Berger & Zelditch 2002, Fararo 1989, Freese 1980, Markovsky & Webster 2015, Scott 2010).

The novelty of today's theorizing approach, in comparison to the theory construction of yesterday, is to be found primarily in its interest not only in the formal aspects of theory making, but also in its informal aspects. Knowledge about the latter is bolstered by the fact that today's theorists are in a position to draw on the important insights that have been developed in cognitive science. The theorizing sociologist is also well aware that when you do research you cannot follow some predesigned plan but always have to improvise, rethink, and reconsider. Here, as elsewhere in empirical research, you have to engage in a bit of what Andrew Abbott terms brachiation; that is, you have to advance like a monkey through the trees by swinging forth and back (Abbott 2014, p. 22).

Theorizing focuses primarily on the attempt to spell out, to analyze, and to transform into a teachable form, all that is done in relation to theory before the final formulation of the results of

a research project. Theory is seen as work in progress, never as a definitive solution to a problem. Advocates of theorizing are also very much concerned with creativity, discovery, and how to say something new, and they argue that these goals are easier to reach if you have practical knowledge of how to handle theory (e.g., Knorr Cetina 2014, Lizardo 2014b, Swedberg 2014a).

The main body of this article is devoted to a discussion of some of the basic tools for theorizing that sociologists make use of in their analyses, such as abstraction, deduction, and generalization. It is with their help that sociological theory, formally defined as logically interconnected sets of propositions from which empirical uniformities can be derived, is constructed (Merton 1968, pp. 39–40; see also, e.g., Berger et al. 1989, p. 7, and Cohen 1984, pp. 173–84).

Abstraction, deduction, and so on are used in other sciences as well, but often in a somewhat different way because their goals and sometimes the data are different. Some of these tools have been discussed quite a bit in the scholarly literature, especially in philosophy and the philosophy of science. Others are today being researched, primarily in cognitive science. All these approaches are used in the thinking that goes into everyday life. Thus, they seem "natural" and like something you already know and therefore do not need to learn.

To what extent these mental tools or "ways of thinking" (Durkheim 1964, pp. 2–3) are fundamentally social or grounded in human biology is a contested issue (e.g., Turner 2007). However, with training and practice, you can at least in some cases improve the skill with which you handle these tools (e.g., Gentner 2010). Additionally, for theorizing purposes these mental tools have not one but two very important uses. They should be used for their intended purpose; you generalize to find something general, and so on. But they can also be used to tease out something novel. You may, e.g., try out a metaphor simply in an attempt to come up with some new ideas.

In what follows, some of these mental tools and how they are to be used in sociology are discussed. Next is a discussion of language, meaning, and representation because some knowledge of these is basic to the use of these tools in sociology. In the concluding remarks, the three core ideas of the article are summarized and discussed: Theorizing is of a practical nature, you theorize with the help of mental tools, and the area of theory is much larger than it is commonly perceived to be today. It is also argued that replacing the teaching of conventional theory with that of theorizing will entail a more central role for the theoretician in sociology.

DESCRIPTION-ABSTRACTION-GENERALIZATION

All three mental tools discussed in this section are linked to observation and illustrate how close methods and theory are. You cannot make observations, say, in the form of a description, without the use of methods (statistics, interviews, surveys, and so on). But you also cannot make good observations without some understanding of their theoretical dimension. In what follows, the theoretical dimension of observation is discussed.

Description represents a way of mentally accounting for a situation. It has low status in social science, especially in economics but also in sociology (e.g., Sen 1980). In fact, many sociologists look at description with contempt (Abbott 2001, pp. 121–22). One reason for the low status of description is precisely the perception that it lacks an analytical dimension. Many ethnographers also hold that description does not raise significant theoretical issues (Becker 1998; Glaeser 2015, pp. 83, 87).

The theoretical elements of description are closely related to three mental operations: the act of looking, the act of choosing, and the decision as to whether to include the viewpoints of the actors. The skillful theorizer knows that there exist multiple ways to "establish the phenomenon" and that she also needs to decide what constitutes "strategic research materials" (Merton 1987). She will therefore train herself to be good at these three ways of thinking.

In the act of looking, you will ideally make use of all of your senses, carefully watch the emotions involved, and see what role objects play in social interaction (e.g., Peirce 1992, Chapter 5; Simmel 1997). The theoretical aspects of this procedure are centered mainly around the process of perception. Any perception—be it a visual perception, an olfactory perception, an emotional perception, and so on—is experienced simultaneously with a meaning. To illustrate with an example: You don't see a round red spot when you come to a traffic signal; rather, you see a stop signal.

The second theoretical tool, or way of thinking, is the act of choosing; all that is perceived cannot be used for a description, or it would never come to an end. The decision of how to eliminate certain things and how to keep others is a complex process. According to Weber, the choice that researchers make in this situation is related to the values of their time; each society has certain values that its population supports (e.g., Weber 2013, p. 138). According to Durkheim, the sociologist also has to exclude the preconceptions of the actors and to focus on what is social (Durkheim 1964, p. 31; cf. Bourdieu et al. 1991).

Moreover, for a fact to be constructed, you have to go from a living perception to a verbal expression that is cast in the special form of a fact (e.g., Poovey 1998). A description is typically verbal, as opposed to a depiction, which is visual (Goodman 1976). A fact can also be more or less theory infused, depending on what is being researched (e.g., Fleck 1979; Hansen 1958; Weber 2013, p. 175). In brief, the researcher always has to take into account how the facts she studies are produced (Lieberson 1985, pp. 229–31).

Finally, the researcher has to make a decision whether to include the viewpoint of the actors. At issue here is not what has just been discussed, namely the general meaning that something has in the perception of the observer. If a person, for example, lifts an axe and brings it down on a piece of wood, the meaning that can be observed or perceived is that the person is cutting wood. The issue here is what the actor means by her act; she may be cutting wood to get some exercise, to work off a fit of anger, and so on ["direct observational understanding" versus "explanatory understanding" in Weber's terminology (Weber 1978, pp. 8–9)].

Abstractions are used in all the sciences, and the capacity to make abstractions is a very useful tool when you theorize. It is also often helpful to go between different levels of abstraction, such as high, medium, and low.

An abstraction is created in three steps: You single out some phenomenon of interest; you cut it out and isolate it from its surroundings; and you remove various parts from it, so it will come out more clearly (e.g., Durkheim 1970, p. 212; Weber 2013, pp. 175, 182). Some of these steps are reflected in the meaning of the term abstrahere, which, according to the *Oxford English Dictionary*, means "to take away, extract, or remove (something)".

Although an abstraction is typically produced through the removal of what is nonessential to some phenomenon, you may also combine the removal with additions in certain cases. The best-known example of this way of proceeding in sociology is Weber's concept of the ideal type, which in this respect is similar to the thought experiment (Weber 1978, p. 21; Weber 2013, pp. 124–37; see, e.g., Folger & Turillo 1999). When you construct an ideal type, you begin by eliminating everything that is not essential to the phenomenon you are interested in, say, competition or charisma. Then you add the following: that the typical actor has full knowledge of the situation, that she is aware of what she is doing, that she acts in a rational way, that she makes no errors, and that the meaning fits the action. According to Weber (1978, pp. 4–24), the meaning that the actor invests her action with must always be taken into account, or the analysis is not sociological.

In an abstraction you take a phenomenon and eliminate certain aspects from it, whereas in a generalization you work with many different phenomena and try to figure out what they have in common (e.g., Becker 1998, pp. 125–28; Cook 2001). Making generalizations of this type has

been described as "the art of giving the same name to different things" (Poincaré cited in Bourdieu 1999, p. 117). Just like you can theorize a phenomenon in many different directions with the help of abstractions, by removing certain parts rather than others, you can also generalize in different directions, by singling out different aspects of some phenomena.

And just as there is a danger that if you abstract too forcefully you will lose contact with the underlying empirical phenomenon, this possibility may also occur for generalizations. A generalization is not a full theory, but rather a tool that is useful when a theory is created (e.g., Martin 2015, pp. 5–8).

When you generalize in sociology, you can decide to single out something that is visible (say, all people who wear a uniform) or something that is internal and structural (say, actors who mediate between two other actors). Pattern is a popular term for the latter type of generalization. A pattern is sometimes mistaken for a phenomenon that exists independently of the observer, but is actually a theoretical construction that is produced by the researcher in interaction with reality (e.g., Stenner 2012).

INDUCTION-DEDUCTION-ABDUCTION

Three other mental tools that are very useful when you theorize are induction, deduction, and abduction. Like description, abstraction, and generalization, induction starts with observation. It is also often discussed in courses on methods.

Induction can be defined as a way of producing generalizations based on perceived similarities in particular instances, in the form of rules, tendencies, laws, and the like (e.g., Feeney & Heit 2007; Goertz & Mahoney 2012b, pp. 192–204). Whereas the generalizations discussed in the preceding section are based on cases that are different (comparison-based generalizations), this type of generalization is based on cases that are similar (inductively based generalizations).

It is often argued that induction represents the classical way in which science should be carried out. John Stuart Mill, for example, is one of the great advocates of induction, and in his view it represents a "great mental operation" [Mill 1952 (1843), p. 186]. It can accomplish not just one but two very important tasks: "discovering and proving general propositions" [Mill 1952 (1843), p. 133]. A third quality, prediction, is sometimes also mentioned.

In sociology, induction has been discussed and advocated primarily by sociologists with an interest in methods. Statistics has, for example, been very useful in this respect (for grounded theory and analytical induction, see, e.g., Katz 2001; Tavory & Timmermans 2014, p. 41).

The theoretical side of induction, including what philosophers have added to the debate, has attracted less attention among sociologists. This area includes ideas such as the following: You cannot predict with the help of induction (David Hume), you cannot make inductions if the meaning of the phenomena changes (Nelson Goodman), and induction can be used to find support for many different theories (the Quine-Duhem thesis). All these arguments raise difficult theoretical questions. As discussed shortly, this is also true for Mill's notion that you can both discover something new and prove it through induction.

Whereas induction has not been very much studied in cognitive psychology, the opposite is true for deduction (e.g., Evans 2005, Feeney & Heit 2007). Whereas induction typically starts from the specific and goes to the general, deduction starts from what is general (say, from a premise or an axiomatic statement) and goes to the specific (e.g., Feeney & Heit 2007, p. 3). You typically assume that, in sociological analyses based on deduction, there already exists a general theory that can explain the individual phenomenon (e.g., Blau 1979, Costner & Leik 1964).

Advocates of induction in sociology are often hostile to deductive arguments, which are seen as restricting the analysis in advance (e.g., Fine 2004). Still, it is also common that advocates of

induction take their empirical findings and simply subsume them under some existing general law or tendency, along the lines outlined by Carl Hempel in his deductive-nomological model (Gorski 2004, Hempel 1965). Although this is far away from the classical form of deduction (in which you draw logically valid conclusions from a certain set of premises), the end result is similar.

The opponents of deduction rarely point out that a deductive approach can be very useful in helping the researcher to come up with new and unexpected ideas (e.g., Hintikka, discussed in Stjernfelt 2007, p. 107). Taking some general idea and trying to work it out for specific cases are a useful exercise in theorizing, just as doing the opposite is useful for induction. A good exercise for theorizers is running up and down, in your mind, from what is specific to what is general and back [e.g., Mill 1952 (1843), pp. 560–65].

Several sociologists have recently advocated the use of the concept of abduction in sociology (e.g., Bertilsson 2004, 2009; Swedberg 2014a; Tavory & Timmermans 2014). The gist of their arguments is that the element of discovery, especially the process of coming up with an explanation, demands its own set of procedures that should not be confused with induction.

Although the term abduction comes from the work of Charles Sanders Peirce, others have recognized the basic idea it expresses. The notion that you need to separate out the process of having an idea from the process of providing proof for the idea, is, for example, central to the work of British philosopher William Whewell. One reason for mentioning Whewell in this context is that he was involved in a well-known debate with Mill about induction. According to Mill, to repeat, induction is a mental process that allows you both to discover something new and to prove its existence. According to Whewell, in contrast, you have to have an idea before you can start the process of proving your case with the help of induction. Whewell said that facts are like pearls and that the idea is like the thread that ties them together into a necklace (Whewell 1847, p. 48).

Peirce used the concept of abduction both in a restricted sense, as coming up with an explanation, and in a broad sense, as coming up with something entirely new. The following quotation is often cited in discussions of Peirce's idea of abduction in the former sense:

> Abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea; for induction does nothing but determine a value, and deduction merely evolves the necessary consequences of a pure hypothesis. Deduction proves that something *must* be; induction shows that something *actually is* operative; abduction merely suggests that something *may be*.
>
> Its only justification is that from its suggestion deduction can draw a prediction which can be tested by induction, and that, if we are ever to learn anything or to understand phenomena at all, it must be by abduction that this is to be brought about. (Peirce 1934, p. 171; cf. Peirce 1934, pp. 172, 590)

Peirce's model of science translates into practice as follows. You first have to generate an explanatory idea through intense observation by the trained scientist (abduction). Testable hypotheses are then derived from this idea (deduction). These hypotheses are finally tested against data (induction). Peirce always insisted that an abduction or a suggested explanation is without value; it always has to be tested against data before you know whether it is good or bad.

According to Peirce, the human capacity to come up with explanations is biological in nature, an idea that has support in cognitive science (e.g., Gopnik 2012). Can you also train yourself to be good at this process? Peirce did not think so. He did, however, advocate some ways through which the scientist can get closer to her subconscious, which was the seat of creativity for Peirce. One example is to study the way artists work and, in this way, improve your sense of observation; another is to loosen up your mind by taking walks at dawn or dusk (Peirce 1929, 1992; Swedberg 2014a, pp. 242–46; cf. Corballis 2015). Some cognitive scientists argue against Peirce and state

that abduction can be learned. One proof of this is that experts are much more skillful in coming up with solutions than people who lack experience (e.g., Gentner 2003, Hogarth 2001).

CONCEPT-ANALOGY-METAPHOR

Concepts are extremely useful in carrying out an analysis and constitute "one of the great tools of all scientific knowledge" (Weber 1946, p. 141). Although no agreement exists on how to define a concept, it can roughly be said to consist of a mental representation that covers a number of items with similar or the same features (e.g., Margolis & Laurence 1999, 2015). As this definition shows, concepts and categories are closely related (e.g., Douglas & Hull 1992).

Sociological concepts often are relational in nature and focus on some form of social action, social structure, and the like (e.g., Becker 1998, pp. 132–38; cf. Gentner 2003, Gentner & Loewenstein 2002). The way you use concepts is, however, the same in sociology as in any other science: "as guidelines for establishing and ordering the facts" (Meyer, cited in Weber 2013, p. 150).

There exists little discussion in modern sociology of the nature of concepts and how these should be used in actual research. What is quite common, however, is the analysis of single concepts, with an emphasis on their origin and history (e.g., Somers 1995, Zuckerman 2010). The closest you come in modern social science to a general discussion of concepts that also provides advice for how to use them in empirical research is a work by political scientist Gary Goertz, *Social Science Concepts: A User's Guide* (Goertz 2006). He draws on the rich tradition of research on concepts in political science that started with the work of Giovanni Sartori in the 1970s. Goertz discusses, among other things, how you expand the reach of a concept or make it more narrow (by taking away or adding adjectives), how you deal with concepts that lack sharp boundaries (so-called family resemblance concepts), and how you operationalize concepts.

Together with James Mahoney, Goertz has also studied the way that concepts are used in modern sociology (Goertz & Mahoney 2012a,b). These researchers found that qualitative sociologists like to use sociological concepts and to discuss their meaning, whereas quantitative sociologists are more interested in how to operationalize and measure concepts, sometimes to the point of eliminating concepts from their analyses. According to one study, the predominance of quantitative methods after World War II has led to a decline of theoretical concepts in mainstream sociology (Swedberg 2017b).

Although Goertz & Mahoney have introduced many important ideas on concepts from political science into sociology, they have less to say about the accomplishments by sociologists on this topic (e.g., Collier & Gerring 2009, Collier & Mahon 1993, Sartori 1970). The key figure in sociology with regard to concepts is Weber, who, in addition to discussing the ideal type, discusses the general role of concepts in social science (e.g., Swedberg 2017a). A concept allows you to approach reality in an attempt to master it (Kant); it is also "a tool. . .never an end in itself" (Weber 2013, pp. 134–35, 176). Weber also emphasizes that concepts are helpful in making new discoveries. In addition, concepts bring order and clarity to the final presentation of a research project.

Herbert Blumer made the second major contribution to the sociological literature on concepts. There exist no "definitive concepts" in his view, and the main function of concepts is to help the sociologist to zoom in on what she wants to study ("sensitizing concepts"; Blumer 1954). Although Blumer was interested primarily in the theoretical aspects of concepts and had little to say about their operationalization, today his ideas on concepts are taught mainly as part of the literature on qualitative methods (e.g., Blumer 1931, 1969).

Just as a concept helps you to get a first handle on some facts, so does an analogy. According to Durkheim, the analogy constitutes "a precious instrument" for the sociologist (Durkheim 1978, pp. 55–56), mainly because saying something totally new is impossible. According to Durkheim,

the analogy allows you to use something that is already known and, with its help, to produce something that is relatively new.

An analogy is used in the following way. You take the analysis of some phenomenon and apply it to the phenomenon you are interested in to get a better handle on it. A financial crisis may, for example, "be like" the Depression. In other words, you make use of a comparison, but not, as in an experiment or in an explanation, by focusing on what happens between stage 1 and stage 2. Here you use a comparison to establish what two phenomena have in common while ignoring their differences.

In contemporary sociology, Diane Vaughan, in particular, has explored the use of analogies for theorizing (Vaughan 2004, 2006, 2014; but see also, e.g., Abbott 2004, pp. 113–18; Becker 2014, pp. 40–60; Lizardo & Pirkey 2012). Vaughan's approach is inspired mainly by Simmel and his use of analogies to construct his social forms ("Simmelarities"; e.g., Vaughan 2004, pp. 316–21; Zerubavel 2007, p. 137; for a critique of Simmel's use of analogies, see Weber 2013, p. 419).

Vaughan does not draw on cognitive science, where analogies have been researched for several decades (e.g., Gentner 1983, 2010). When you use an analogy, in the terminology of cognitive science, you map one case (the source analog) onto another (the target analog) to better understand it (Gentner 1999). Evidence exists that people can learn how to use analogies in an effective manner, that it is easier to learn how to use analogies that focus on surface phenomena than analogies that focus on structures, and that the researcher's understanding of both the target and the source changes when an analogy is used (e.g., Gentner 2003).

Metaphors are similar to analogies in that two phenomena are compared in an attempt to better understand one of them. Although there has to exist some important similarity between two phenomena in an analogy, this is not the case with the metaphor. Both are also useful for heuristic purposes (e.g., Gentner & Wolff 2000).

Modern sociologists have shown little interest in metaphors, and for a sophisticated discussion, you need to turn to philosophy and literary theory (but see, e.g., Lizardo 2012a, 2014b; Swedberg 2014a, pp. 89–92; Turner 2010; Urry 2000; for philosophy and literary theory, see, e.g., Donoghue 2014, Richards 1936). Philosopher Max Black (1962, 1979) has developed the standard model for what happens when you use a metaphor. Using a metaphor, he argues, does not mean that you just transfer the meaning of one phenomenon to that of another (the substitution view) or that you simply compare the meaning of one to that of another (the comparative view). Using a metaphor means that you enrich the meaning of one phenomenon with that of another through a process in which the meaning of the metaphor not only interacts with, but also helps to organize, the meaning of the other phenomenon (the interaction view).

THE ROLE OF LANGUAGE IN THEORIZING

So far in this article I have discussed various mental tools or ways of thinking that are helpful when you theorize. The basic idea is that, if you learn to think in these ways and create a habit of it, you will be well prepared for the theory part when you engage in empirical research. In this section, however, the focus is on some topics that are of a different nature but are still crucial to theorizing in a skillful manner. The first is language, which plays a key role for the way that human beings act and think and which consequently also affects theorizing. Closely related to language, the notions of meaning and representation also raise important issues for how to theorize.

Much of the material in this section comes from work that has been done in cognitive science, reflecting the fact that language, meaning, and representation have been researched much more by cognitive psychologists and linguists than by sociologists. So far, cognitive science has not affected sociology very much (but see, e.g., Bergesen 2004; Cerulo 2014; DiMaggio 1997, 2002; Turner

2004, 2007). It has, however, been argued that theorizing can benefit very much from the insights of cognitive science (e.g., Knorr Cetina 2014; Lizardo 2014a,b; Swedberg 2014a).

Cognitive science was born out of a critique of behavioral psychology, which looked primarily at behavior, and not at what is happening in the mind of the actor. In focusing on behavior, however, behavioral psychologists made many implicit and untested assumptions about the human mind. The reason for mentioning this is that sociologists often behave similarly to behavioral psychologists but have not yet had their confrontation with the behavioristic approach. Although sociologists often refer to attitudes, ideas, and so on, they see these as the result of interaction and do not address the issue of the mental makeup of the actors.

Sociologists have had more to say about the role of meaning and representation than about language. The classics in sociology—Weber, Durkheim, and so on—have practically nothing to say on language. There exists some interesting literature from later on, but on the whole the so-called linguistic turn has had little impact on sociology beyond what can be found in cultural sociology (e.g., Paget 1995, Reed 2004).

So far, however, cultural sociologists have shown little interest in what is happening in cognitive science, including some research that is highly relevant for sociology (but see, e.g., Cerulo 2014, DiMaggio 1997). This statement can be illustrated with a brief account of some current work on the birth of human language and the significance of this truly momentous event for the analysis of human behavior. According to one important stream of research in paleoanthropology, only one type of hominins—*Homo sapiens*—developed human language, and this development took place some 50,000–100,000 years ago in Africa (e.g., Berwick & Chomsky 2015; Tattersall 2013, 2015). The evidence for language consists primarily of artifacts with symbolic features, such as paintings, decorated tools, and the like (e.g., Henshilwood & d'Errico 2011, Henshilwood & Marean 2003, Henshilwood et al. 2002). The central assumption behind this argument is that with language it is possible to distance yourself from reality and to represent it in a different medium.

It has also been speculated that a mutation in the biological makeup of *Homo sapiens*—perhaps a slight change in the wiring of the brain—occurred, resulting in the birth of language (e.g., Chomsky 2016, p. 23; Tattersall 2015). Given the small population, this mutation could then have spread and quickly become dominant.

One important implication of this research for sociology is that societies have existed among hominins or humanlike people who lacked language. These people, however, were able to create and use certain tools; they also mastered the art of fire. How these societies compare to societies of *Homo sapiens* are of much interest with regard to an understanding of the role of human language in social action.

With the emergence of language, it became possible for *Homo sapiens* to think, to plan, and to distance themselves from reality through imagination and representation. The language capacity was also linked to the different senses, allowing these individuals to assign meaning to objects of perception, hearing, taste, and so on. As language was exteriorized, the capacity to communicate was enormously expanded. More complexity was added through the inventions of writing and the number system.

One aspect of human language that from the very beginning has interested some sociologists is meaning. The element of meaning is what makes language different from an artificial language such as information, in which the key problem is to reproduce a message from one point to another point with a certain statistical probability (Shannon 1948; see, e.g., Gleick 2011, pp. 233–69). In human language, in contrast, communication always includes an element of meaning or understanding, for the sender as well as for the receiver.

In modern sociology, the analysis of meaning has three main origins. There is the interpretive sociology of Weber, the idea of definition of the situation, and the idea of culture in cultural

sociology. According to each of these three approaches, the element of meaning must be taken into account in the analysis. None of them, however, raises the question of how meaning is related to the biological structure of the mind, along the lines of today's cognitive science. On this point the standard sociological approach is reminiscent of behavioral psychology: It operates with the implicit assumption that the internal structure of the mind has no significant effect on the way that meaning is produced and perceived.

This assumption may well be wrong, so it is important for the development of sociological theory that the insights of cognitive science not be ignored. Given the enormous complexity of systems such as the systems of perception and hearing, the processes that produce meaning in the human mind are likely much more complex than they are currently thought to be in sociology.

The term representation addresses a different set of issues than meaning and language, and these issues are also helpful for sociologists to be aware of when they theorize. The capacity to represent something to yourself and to others is central to language, and it can take many different forms, including the kind of symbolic artifacts that signal the appearance of human language. In epistemology, the idea that representations are central to the workings of the human mind had its breakthrough with the work of Immanuel Kant.

Durkheim then took the idea of representation and turned it into a sociological phenomenon through the concept of collective representation. According to Durkheim, collective representations are social symbols that keep society together. His idea that representations are social and not biological is still dominant in sociology.

A very different approach to the idea of representation can be found in linguistics, with language being conceptualized as a formal system with different representations or words that refer to different objects. According to Tavory & Timmermans (2014, pp. 21–34), Peirce's decision to include a third element, the interpretant (roughly the actor), means that a bridge can be built from language to society.

The view that a representation refers to an object or phenomenon that is external to the speaker is referred to in linguistics as semantic externalism (e.g., Speaks 2016). Its opposite is semantic internalism, according to which the meaning of some phenomenon derives primarily from its place within a general meaning structure (e.g., Chomsky 2000, Lau & Deutsch 2014). How exactly the internalist view would affect sociology, whose position can be characterized as strongly externalist, is not clear. Regardless of how this issue is resolved, sociologists who are interested in the basic issues of theorizing will want to follow current developments in cognitive science on this topic.

CONCLUDING REMARKS

> Abduction must cover all the operations through which theories and conceptions are engendered.
>
> —Charles Sanders Peirce, "How to Theorize" (Peirce 1934, p. 590)

By putting together and further developing the ideas that can be found in some recent works on theorizing, I try in this article to give coherence to ideas that sometimes go in different directions and that have not been fully worked out. What happens during the next few years will show whether these ideas will come together, along the lines that are envisioned above, or whether they will develop in some other direction.

The three core ideas discussed in this article are the following: (*a*) the most useful type of knowledge with regard to theorizing is of a practical nature (knowing-how); (*b*) theorizing draws not only on existing theory but also, more importantly, on a number of theorizing tools or ways of thinking; and (*c*) the area of theorizing is considerably larger than that of conventional theory.

The main reason why the type of knowledge that is needed to theorize well is of a practical kind is that such knowledge is what you need when you carry out your research. Although it is always useful to know what a Weber or Coleman has said about some social phenomenon, it is more important for the individual sociologist to have knowledge of a type that allows her to theorize and to solve theoretical problems as these emerge during the process of research.

This type of knowledge consists of a number of mental tools, such as induction, deduction, generalization, and so on, all adapted to the special requirements of sociology. The researcher will try to use these tools or ways of thinking and to turn them into mental habits (see, e.g., Dewey 1922; Peirce 1992, pp. 189–92).

The best way to both develop and test these habits is through actual research. By facing and trying to solve practical problems, the researcher gets to know the value of her knowledge; this is also true for sociology. Many studies of the way in which sociologists use methods have been carried out (Leahey 2008). However, there are few studies about the way in which sociologists theorize, and these therefore deserve to be high on the agenda for sociology today.

An important question to be addressed in this context has to do with the fact that, before a sociologist can do research and successfully theorize, she has to be trained. The answer, I suggest, is to introduce practical exercises in classes on theory and, in this way, follow the way in which courses in methods are taught. The main way to learn theory would then be through practical use, as opposed to through mere reading. Students will naturally have to read some of the usual works on theory. But such reading will be done in combination with practical exercises, something that will also change the way theory is understood.

There exists a small but growing literature on what exercises in theory may look like, both at the graduate level and at the undergraduate level (e.g., McDuff 2012; Rinehart 1999; Swedberg 2014a, pp. 169–87). According to this literature, the students will first have to learn some theory as well as some theorizing tools, such as sociological concepts and how to generalize. You then create exercises for the students in which these tools are used but in which the methodological requirements are relaxed so that the main focus is on theory (see especially McDuff 2012). Through discussion in class of how various theoretical problems have been addressed in the research exercises, the students will also get a chance to learn from each other.

The second core idea of theorizing, as presented in this article, is that you need to use a number of basic theorizing tools when you confront empirical reality. Through the use of these tools, new theories are constructed, and existing ones can be improved.

The theorizing tools discussed in this article represent only a sample, and not a complete set. Much more can also be said about the nature of each of these tools and their use in sociology. This is also true for the research by cognitive sociologists on these tools.

The third core idea of theorizing discussed above is that the territory covered by theorizing is considerably larger than that in conventional theory. Studies judged to be important are what are typically taught in theory courses. Thus, the students are exposed only to the end product of the theorizing process, and not to the process through which these studies were produced. The education of the students takes place primarily through reading and by listening to lectures, often in combination with some class discussion.

In classes that focus on theorizing, in contrast, the students are taught how to use and how to construct a theory themselves, primarily by doing light forms of empirical research. In this way, the students will be exposed to a number of topics that are currently not taught in theory classes, such as abstraction, induction, abduction, and so on. The students are encouraged to use these tools in their practical exercises and, in this way, to develop their own approach to theorizing. This approach is radically different from the theory-fitting type of behavior that a mere reading of theory often leads to.

Some of the tools used to theorize are discussed mainly in methodology courses and very little in theory courses. This tendency reflects, in my view, the fact that the teaching of methods (through exercises) is much more successful than the teaching of theory (through reading). But it also means that methodologists have come to enlarge their area to also include some topics that belong to theory. The tendency of methodologists to deal with issues that are primarily theoretical in nature represents a form of methodologism and needs to be corrected (e.g., Bourdieu & Wacquant 1992, pp. 26–35; cf. Sutton & Staw 1995). Without special training in theoretical issues, methodologists often go wrong when they venture into theory (e.g., Abbott 2001, pp. 97–125).

When this situation has been changed and a more natural division of labor has been established between methodologists and theorists, both will be in a better position to benefit from the insights of the other. This will especially be the case with issues that fall in the gray area between methods and theory and that belong to both of them.

If you take a practical approach to theory and also enlarge the area of theory, theory classes will have to change, and so will the role of the theorist in sociology. The old ideal of every department having its own expert on the classics and contemporary theory is long since gone. Today it is often argued that you do not need to be an expert in theory to teach classes in theory. If you are a good researcher, then you know how to use theory, and you are also qualified to teach it. In the top sociology departments, theory is currently taught in this way at the graduate level (e.g., Lamont 2004, Lizardo 2012b). Advocates of this way denounce the old system, with its "theory experts," and argue that ordinary researchers can do a better job (Lamont 2004, p. 10).

But there are several problems with the idea that if you can do solid research, you can also teach theory. People typically do research in one subarea of sociology, and given the pluralism of the discipline, they are often knowledgeable only in one type of theory. Being curious about theory and being interested in theoretical questions are not the same as being trained in theory, especially in the topics that are discussed in this article. Theory of the theorizing kind is in many respects too demanding to be handled as a second and minor specialty. A better solution to my mind would be to reverse the order of specialties and to have sociologists with theory as their main specialty and a specific area as their second specialty.

If I were to compress the main message of this article into a few final sentences, it would be as follows. The social world is extremely complex, and to better understand what is going on, you need a different approach to theory than the one that can currently be found in sociology. The way that theory is practiced today is holding sociology back, rather than helping it to better understand and explain what is going on. The approach of theorizing, through its square and direct focus on the practical ways in which theory is being used in confrontation with empirical reality, may constitute one way out of this dilemma and may therefore be worth exploring.

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The *Annual Review of Criminology* provides comprehensive reviews of significant developments in the multidisciplinary field of criminology, defined as the study of both the nature of criminal behavior and societal reactions to crime. International in scope, the journal examines variations in crime and punishment across time (e.g., why crime increases or decreases) and among individuals, communities, and societies (e.g., why certain individuals, groups, or nations are more likely than others to have high crime or victimization rates). The societal effects of crime and crime control, and why certain individuals or groups are more likely to be arrested, convicted, and sentenced to prison, will also be covered via topics relating to criminal justice agencies (e.g., police, courts, and corrections) and criminal law.

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