

Theorizing in sociology and social science: turning to the context of discovery

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Abstract Since World War II methods have advanced very quickly in sociology and social science, while this has not been the case with theory. In this article I suggest that one way of beginning to close the gap between the two is to focus on theorizing rather than on theory. The place where theorizing can be used in the most effective way, I suggest, is in the context of discovery. What needs to be discussed are especially ways for how to develop theory before hypotheses are formulated and tested. To be successful in this, we need to assign an independent place to theorizing and also to develop some basic rules for how to theorize. An attempt is made to formulate such rules; it is also argued that theorizing can only be successful if it is done in close unison with observation in what is called a prestudy. Theorizing has turned into a skill when it is iterative, draws on intuitive ways of thinking, and goes beyond the basic rules for theorizing.

Keywords Theorizing · Theory · Context of discovery · Context of justification · Abduction

Looking out my window this lovely spring morning I see an azalea in full bloom. No, no! I do not see that; though that is the only way I can describe what I see. That is a proposition, a sentence, a fact; but what I perceive is not proposition, sentence, fact, but only an image, which I make intelligible in part by means of a statement of fact. This statement is abstract; but what I see is concrete. I perform an abduction when I so much as express in a sentence anything I see. The truth is that the whole fabric of our knowledge is one matted felt of pure hypothesis confirmed and refined by induction. Not the smallest advance can be made in knowledge beyond the stage of vacant staring, without making an abduction at every step.

- Charles S. Peirce (1901; unpublished manuscript)¹

¹The quote comes from one of Peirce's unpublished manuscripts at the Houghton Library, Harvard University (MS 692; Brent 1993, p. 72).

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During the last half century sociology as well as the other social sciences have made great advances in the kind of methods that they use, while the situation is quite different in the area of theory.² The development since World War II has been uneven in this respect: sociologists and other social scientists are today very competent when it comes to methods, but considerably less skillful in the way that they handle theory. The major journals contain many solidly executed articles, while theoretically interesting articles are less common.

Why is this the case? And can the situation be changed? Can the theory part be brought up to par with the methods part in today's social science? In this article I argue that we may want to explore the option of placing more emphasis on *theorizing* rather than on *theory*; and in this way start to close the gap.

The expression "to theorize" roughly means what you do to produce a theory. While theorizing is primarily a process, theory is the end product. The two obviously belong together and complement each other. But to focus mainly on theory, which is what is done today, means that the ways in which a theory is actually produced are being neglected.

If I had chosen a different subtitle for this article, it might have been something like "a Peircean and personal perspective"; and there are several reasons for this. Charles Peirce has been an important source of inspiration in this enterprise and he deserves more of a presence in today's social science. As to the term "personal," I often draw on my own personal experience of theorizing and how to teach theorizing in this article. More importantly, however, the act of theorizing is deeply personal in the sense that you can only theorize well by doing it yourself and drawing on your own experiences and resources.

Emphasizing the role of theorizing also has important consequences for the way that theory is taught, something that is discussed in a separate section in this article. The way that theory is typically taught today, the student gets to know what Durkheim-Weber-Bourdieu and so on have said. This knowledge will supposedly come in handy once future research projects are undertaken. To teach theorizing is very different; and here the goal is for the student to learn to theorize on his or her own. The point is to learn to theorize one's own empirical work, not to use somebody else's ideas.

There exist many ways of theorizing, such as induction, deduction, generalizing, model-building, using analogies, and so on. Some of these, I argue, are especially useful for theorizing in sociology and social science. In doing so, I will often use the work of Peirce as my guide. The writings by Peirce, such as "How to Theorize,"

² For encouragement, help, and suggestions I first of all would like to thank Mabel Berezin. I am also grateful to two anonymous reviewers for *Theory and Society* and to Margareta Bertilsson, Angie Boyce, Mikael Carleheden, Nicolas Eilbaum, Laura Ford, Omar Lizardo, Darcy Pan, Roland Paulsen, Jennifer Platt, Eric Schwartz, and Hans Zetterberg. I have learned a lot from the students who have participated in my classes in theorizing at Cornell University, Copenhagen University, and Stockholm University. The key ideas in my approach to theorizing were first presented in 2009 and 2010 in *Perspectives*, the newsletter of the Theory Section at the American Sociological Association (Swedberg 2009a, 2010). For a fuller version of how I view theorizing, see my forthcoming book *Discovery: Learning the Art of Theorizing in the Social Sciences* (Princeton University Press).

“Training in Reasoning,” and many others, are extremely suggestive when it comes to theorizing (e.g., Peirce 1934, [1992a] 1998).

But there also exists a need to know more about theorizing, something that is very difficult today since there does not really exist a body of work on this topic. There do exist some relevant writings and also many interesting comments and asides, which are scattered throughout the enormous literature in social science.³

Finally, throughout this article, I emphasize the many obstacles that exist to creative theorizing. These epistemological obstacles, as I call them here (following Gaston Bachelard), are of many different kinds (e.g., Bachelard 1934 [1984]). Some of them make it hard to deal effectively with data in the process of theorizing. Others encourage the social scientist to rely far too much on existing theory, and thereby skip the element of theorizing and reduce it to a minimum.

Starting from the distinction between the context of discovery and the context of justification

In approaching the topic of theorizing in social science, it is convenient to take one's point of departure in the well-known distinction between the context of discovery and the context of justification. In doing so, it is possible to show that the current neglect of theorizing, and the related overemphasis on theory, has much to do with the tendency in today's social science to ignore the context of discovery for the most part and instead focus nearly all attention on the context of justification.

The distinction between the context of discovery and the context of justification received its most influential formulation in the 1930s through the work of Hans Reichenbach and Karl Popper. Today the distinction is still around, even if it has been much criticized over the years and is far from generally accepted (e.g., Hoyningen-Huene 1987, Schickore and Steinle 2006). The argument in this article does not rest on the notion that these two concepts are each others' opposites or somehow summarize the most relevant features of the research process. Nonetheless, it represents a useful point of departure for the discussion.

Both Reichenbach and Popper were working on ways to improve empiricism as a philosophy of science. Reichenbach coined the two terms “context of discovery” and “context of justification,” while Popper helped to diffuse them by giving them a central place in his seminal work *The Logic of Scientific Discovery* (Popper 1935, pp. 4–6; 1959, pp. 31–32, 315; Reichenbach 1938, pp. 6–7, 281; 1951, p. 231).

³ As a sign of how little attention has been paid to theorizing, compared to theory, it can be mentioned that while references to “theory” were made 120,502 times in sociological journals from the 1890 s to 2010, according to JSTOR, the equivalent number for “theorizing” and “theorize” is 16,087 (based on a search in JSTOR in April 2011). But even if there does not exist a distinct body of literature on theorizing, there do exist some writings that are very suggestive and helpful in this context. Among these I especially recommend the works by the following authors (all of whom are referred to in this article): Karl Weick, C. Wright Mills, Everett C. Hughes, Jim March, Andrew Abbott, and Howard Becker. There also exist a small number of very suggestive social scientists who write in what can be called a theorizing style, such as Thomas Schelling and Albert O. Hirschman. Philosopher Herbert Dreyfus has also much interesting to say on the topic of theorizing.

Reichenbach defined the context of discovery as “the form in which [thinking processes] are subjectively performed,” and the context of justification as “the form in which thinking processes are communicated to other persons” (Reichenbach 1938, p. 6). While science can address issues in the context of justification, this is not the case in the context of discovery. “The act of discovery escapes logical analysis” (Reichenbach 1951, p. 231).

Popper similarly argued that everything that precedes the testing of a theory is of no interest to science and logic; it belongs to “empirical psychology” (Popper 1935, pp. 4–5; 1959, pp. 31–32). This means in practice that what accounts for the emergence of new theories cannot be studied. In his influential work Popper kept hammering away at this message: it is impossible to study theoretical creativity; the only place for science is in the context of justification (e.g., Popper 1982, pp. 47–48).⁴

In terms of theorizing, what is important with Reichenbach and Popper’s distinction is that attention was now directed away from the context of discovery and toward the context of justification. A theory that cannot be verified (Reichenbach) or falsified (Popper) is not scientific; and it therefore becomes imperative to establish the link between theory and facts according to scientific logic. This was mainly done in social science through an emphasis on testable hypotheses: on creating a close link between theory and facts. An idea that could not be formulated as a testable hypothesis was not scientific.

Since the context of discovery was seen as impossible to study with scientific rigor, it fell to the side. If we for the moment view the scientific enterprise as consisting of three elements—you go from (1) *theorizing*, to (2) *theory*, to (3) *the testing of theory*—only the second and the third elements were properly attended to. The first element was largely ignored. Since there exist good reasons for believing that you draw on different ways of thinking when you theorize, and when you test and present your ideas to an audience, this neglect has had serious consequences for social scientists’ capacity to theorize.

The strong focus on verification and falsifiability after World War II can be illustrated by Robert K. Merton’s influential work in the 1950s and 1960s. Merton looked at theory mainly from the perspective of testability, as his well-known definition of theory illustrates: “The term *sociological theory* refers to logically interconnected sets of propositions from which empirical uniformities can be derived” (Merton 1967, pp. 39, 66, 70). These uniformities should be established via “empirically testable hypotheses” (Merton 1967, p. 66).

Hans Zetterberg, who together with Merton was the main theoretician in sociology at Columbia University during this period, developed a similar set of arguments in his aptly named *Theory and Verification* (1954, 1963, 1965). In Zetterberg’s formulation, “theories summarize and inspire, not descriptive studies, but *verificational studies*—studies construed to test specific hypotheses” (Zetterberg 1963, p. 9).

⁴ It should be mentioned at this point that there is an important difference between producing social science studies of theoretical creativity and developing rules for how an individual can theorize in a creative way. This difference is not clear from the statements of Reichenbach and Popper but is crucial to their argument.

To show how one can improve the situation today, I deal here mainly with the first of the three elements I have mentioned (*theorizing-theory-the testing of theory*). In doing so, I will have little to say about the other two. This should not be interpreted as an argument that they are not of crucial importance, only that theorizing is in need of extra attention today because it has been so neglected.

The general structure of the process of theorizing

The scientific worker has to take into his bargain the risk that enters into all scientific work: Does an ‘idea’ occur or does it not?

- Max Weber, “Science as a Vocation”⁵

Both Merton and Zetterberg were well aware that good theory was the result of inspiration and creativity, as well as rigorous and systematic work with data. Zetterberg noted, for example, the “painstaking triviality” of much sociology, and suggested that social scientists turn to Shakespeare, Dante, and Mark Twain for insight and inspiration (Zetterberg 1963, p. 36).⁶ Merton pointed out that method books are full of “tidy normative patterns,” but do not describe how sociologists actually “think, feel and act” (Merton 1967, p. 4). As a result of this neglect, Merton continued, their studies have “an immaculate appearance which reproduces nothing of the intuitive leaps, false starts, mistakes, loose ends and happy accidents that actually cluttered up the inquiry” (Merton 1967, p. 4).

But neither Merton nor Zetterberg, both of whom were first class theorists, seem to have felt that theory could be advanced very much by focusing directly on the context of discovery. Merton’s main contribution to an understanding of discovery underscores this very point: he singled out discoveries that happen by accident or “serendipity” (e.g., Merton 1967, pp. 158–162; Merton and Barber 2004).

A similar attitude was present among the sociologists who were engaged in what became known as “theory construction” in the mid-1960s to the mid-1970s. According to a historian of this approach, this type of work essentially continued the “verification approach” of Merton and Zetterberg (Zhao 1996, p. 307; see also Hage 1994; Willer 1996; Markovsky 2008). Studies that did not develop a satisfactory way of dealing with verification were labeled “verbal” or otherwise pushed to the side as pre-scientific and passé (e.g., Blalock 1969). The classics were sometimes mentioned as an example of a failure to properly “formalize” (e.g., Freese 1980, p. 63).

While the advocates of theory construction did look at the theorizing process, they were primarily interested in the context of justification, not the context of discovery. Their main concern was with the way you develop hypotheses and test these, not with what precedes these two stages. They focused on formal and cognitive elements, and had little to say on such topics as intuition, imagination, and abduction. This also goes for the best works in the genre, which are still interesting to read, such as *Scientific*

⁵ The quote comes from Weber 1946, p. 136.

⁶ For an example of Zetterberg’s imaginative take on social science, see his recent multi-volume work *The Many-Splendored Society* (2009).

Sociology by David Willer, *Constructing Social Theories* by Arthur Stinchcombe, and *An Introduction to Models in the Social Sciences* by Charles Lave and Jim March (Willer 1967; Stinchcombe 1968; Lave and March [1975] 1993).

How then is one to proceed in order to bring the context of discovery into the theorizing process in an effective way? Can one, for example, produce rules for how to theorize, and can these be developed into a solid skill in theorizing that can match the skill in methods that exists today? This is the main question that I address in the rest of this article. The first part of my answer, drawing on Peirce and others, is that some preliminary rules of this type can be devised. The second part of my answer is that one needs to proceed beyond knowing rules, to developing a skill in theorizing.

It deserves to be repeated that to succeed in this enterprise, we also need to get rid of some of the epistemological obstacles that currently exist when it comes to theorizing. One of these is the idea that to theorize one has to proceed in a scientific or logical manner. This is not the case. To theorize well, one needs inspiration, and to get inspiration one can proceed in whatever way that leads to something interesting—and that means *any way*. The reason why this is permissible is that the goal, at this stage of the process, is simply to produce something interesting and novel, and to theorize it. It is first at the stage when the theory is being tested, or otherwise confronted with data in a deliberate manner, that scientific and rigorous rules must be followed. To use a metaphor from the area of law: the context of discovery is where you have to figure out who the murderer is, while the context of justification is where you have to prove your case in court.

In brief, creativity is primarily what matters when a theory is devised; and scientific logic and rigor is primarily what matters in the context of justification. This, of course, is precisely what Reichenbach and Popper had argued. But what to them and their followers became a reason to ignore the context of discovery—it only takes you away from rigor, logic, and proof—can also be seen as an opportunity, an opportunity to make full use of one's imagination, intuition, and capacity for abduction (see also, e.g., Weick 1989; Luker 2008).

Another epistemological obstacle to theorizing is the view in sociology and many other social sciences that empirical data should enter the research process first in the context of justification. According to this view, the social scientist should start the study with a distinct problem or a distinct theoretical point in mind, then construct hypotheses, and finally confront these with data.

This approach can be found in middle-range sociology and to an even stronger extent in so-called theory-driven research. In the former, you typically start with a problem and then try to solve it (e.g., Merton 1959). In theory-driven research you begin with some theoretical point in mind, and then proceed to the empirical phase to confirm or to develop further the initial theory.

Just as middle-range theory, theory-driven research represents an attempt to steer free from “mindless empiricism” or the production of facts without any theory. In mindless empiricism you begin by collecting data, and then summarize the result without linking it to a theory; or you test hypotheses that are not directly related to some theoretical tradition. According to advocates of theory-driven research, social problem-driven research also proceeds in this manner (e.g., Hedström 2007).

The way in which theory has been overtaken by the rapid development of methods after World War II is also reflected in the fact that quite a bit of theorizing is

presented these days as being part of methods. This is, for example, the case with some qualitative methods, including participant observation. There is similarly a tendency among the proponents of theory construction to talk about “theoretical methods” (e.g., Willer 1967; Stinchcombe 1978; Freese 1980).

The problem with looking at things in this way is that it feeds into the current tendency to focus primarily on the role of methods in social science research rather than on creativity and originality. The result, especially when it comes to qualitative methods, is a failure to realize that theorizing represents an independent element in the research process and can best be developed if it is realized that theory is not the same as methods.

The types of research that so far have been discussed leave very little room for creative theorizing, except for those rare individuals who happen to have a natural talent for this. For the average social scientist the situation is very different. He or she will typically have been taught methods as a graduate student but not theorizing, since this is not a topic that is currently being taught (e.g., Markovsky 2008). As a result, all too often an awkward attempt is made to force the research findings into some existing theory or just stick some theoretical label on them.

The dilemma for much of contemporary social science is that you are damned if you do and damned if you don't. It is hard to produce good theory if you start from the facts; and it is hard to produce good theory if you start from theory. In the former case, there will be no theory; and in the latter case, the theory already exists.

How then to proceed? First, the general strategy I outline in this article is that empirical data should ultimately drive the theorizing process. This should not be seen as an advocacy of mindless empiricism; and on this point I refer to the sociological tradition. Weber, Durkheim, and many others who are part of what C. Wright Mills called “the classic tradition” all advocate *starting with the facts*. In *Rules of Sociological Method*, Durkheim says that the researcher should proceed “from things to ideas,” not “from ideas to things” (Durkheim [1895] 1964, p. 15). According to Weber, “theory must follow the facts, not vice versa” (Weber 2001, p. 36). In *Democracy in America*, Tocqueville writes, “I never gave in to the temptation to tailor facts to ideas rather than adapt ideas to facts” (Tocqueville [1835–1840] (2004, p. 15).⁷

None of the classics, however, has showed us how to go from facts to theory in the creative manner in which they excelled. I suggest that one way of doing this—and this is the move that firmly separates the approach I advocate from mindless empiricism, theory construction, and theory-driven research—is to let the data enter the research process *at two different stages*. One should start the research process by exploring data, and one should at a later stage formulate hypotheses (or their equivalents) and systematically confront these with data.

Just as some researchers advocate the use of a pilot study before the main study is carried out, I suggest that an early empirical phase is necessary. But its purpose is very different from that of a pilot study, namely to develop creative research ideas through theorizing. The first part of the research process may be called a *prestudy*;

⁷ The classical foothold of theory-driven research in the social sciences can be found in mainstream economics. During the last few years, however, an empirical type of economics has begun to emerge. As an example of this, see, e.g., the following comment by Paul Krugman: “The profession has shifted towards nitty-gritty empirical investigation using lots of data. Unless you have a brand-new insight, the best you can do is to find evidence that hasn't been exploited. Maybe that will suggest new theoretical insights, *but the starting point is the data*” (Busso 2010, p. 132; emphasis added).

and it is characterized by theorizing based on empirical material, with the aim of making a discovery.⁸

At the first stage of the research process (the prestudy), one should deal with the data in whatever way that is conducive to creativity—and *then* try to theorize with their help. Once some interesting theoretical idea has been formulated and worked through to a tentative full theory, one can proceed to the second stage, which is the context of justification or the main study. This is where the research design is drawn up and executed. From this point on, rigor and logic are crucial since the data to be used have to be collected in reliable ways and also presented in this way to the scholarly community.

Two points must immediately be added to this account of the two stages of the research process. First, this is a very general description of how new ideas may be developed and later tested. It is well known, for example, that when hypotheses are tested there may be unexpected findings that lead to the formulation of new theory. Many researchers also work for decades on some problem, hoping to solve it. In brief, while the beginner may want to carefully distinguish between the two stages in conducting research, for the skilled researcher they often become mixed and merge with one another. The process also tends to be iterative; and its beginning, middle, and end do not necessarily follow in this order.

The second point is that for successful theorizing in social science, you need to be thoroughly grounded in the core ideas of social science. This is a version of Pasteur's dictum that "chance only favors the prepared mind" or, to use a more recent version of the same idea, the 10,000-Hour Rule of Malcolm Gladwell (you need to do something for 10,000 h to become really good at it; Gladwell 2008, pp. 35–68).

This does not mean that, say, the sociologist has to master all the works of Weber-Durkheim-Simmel-Parsons-Merton-Goffman-Coleman-Bourdieu and everyone else who has made a substantial contribution to sociology. What it does mean is that the researcher should have penetrated to the very core and foundation of the social science enterprise. A sociologist should, for example, know intimately what constitutes a social fact (Durkheim), a social action (Weber), and a social form (Simmel).⁹

Those who put in the 10,000 h in sociology or some other social science often do this because they are obsessed with what they are doing. Weber speaks in "Science

⁸ A pilot study can be described as a small-scale try-out, executed before the main study. Its general task is to ensure that the research design is sound and to make changes in it before it is too late. It is also common that questions in a questionnaire are tried out in advance, again so they can be changed before the main study is carried out. This means that what primarily distinguishes a prestudy from a pilot study is that while a prestudy is focused on the context of discovery, a pilot study is not. Theorizing has no more of a place in a research design that includes a pilot study than it does in one that does not. The literature on pilot studies is meager, perhaps because they tend not to be reported (e.g., van Teijlingen and Hundley 2001). I am grateful to Jennifer Platt for her thoughts on the topic of pilot studies.

⁹ Is not old-fashioned "theory" smuggled in through the back door, so to speak, by referring in this manner to certain core ideas in social science? My answer is "no"; there is still a need for theorizing to complement theory. While acknowledging that more discussion deserves to be devoted to this question than is done in this article, I suggest that theorizing can either involve the core ideas of social science or one can accept these ideas as valid when engaging in research. Since the latter case is clearly the most common, this article is devoted to it. When theorizing in contrast is directed at the core ideas in social science, it is mainly done without reference to empirical facts, a bit like theorizing is traditionally done in philosophy. For a discussion of some of the theoretical presuppositions of social science, see, e.g., *Sociology as a Craft: Epistemological Preliminaries* by Bourdieu et al. (1991).

as a Vocation” of the “strange intoxication” that drives the serious scholar and how this way of acting is “ridiculed by every outsider” (Weber 1946, p. 135).

Weber elevates his point about the strange intoxication to a general rule and states that “nothing is worthy of man as man unless he can pursue it with passionate devotion.” There is an existential dimension to this statement; and one can find the same idea in the work of many scientists and philosophers. Kierkegaard, for example, argues that passion should be part of everything one does in life, including thinking and theorizing (e.g., Kierkegaard [1846] 1992).¹⁰

The research process, to summarize the argument so far, consists of two phases: an early and imaginative phase of theorizing and a later phase in which the major research task is carried out according to the rules of the profession. I call the former the theorizing or discovery phase (or the prestudy) and the latter the phase of major research and justification (or the major study; see Fig. 1). To develop a competence in the first phase or that of theorizing, one does well to follow initially some basic rules and then go from there. In the next two sections I suggest what some of these rules may look like.

The basic rules of theorizing, part I: observation

Dr. Watson: “This is indeed a mystery,” I remarked. “What do you imagine that it means?”

Sherlock Holmes: “I have no data yet. It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.”

—Sir Arthur Conan Doyle, “A Scandal in Bohemia” (1891)¹¹

Theorizing is often seen as an activity that is different from observation, but this is not the way that the term was originally understood. The word “theorize” comes from the Greek and means *to see*, *to observe* and *to contemplate*. It is a mixture, in other words, of several activities: observing something, penetrating something, and finding something out. A philosopher has suggested that theorizing according to the Greeks means that you concentrate on a phenomenon and stay with it, trying in this way to understand it (Heidegger 1977, p. 163).¹²

¹⁰ Kierkegaard writes, for example, in *Concluding Unscientific Postscript*: “It is impossible to exist without passion, unless existing means just any sort of so-called existence. For this reason every Greek thinker was essentially a passionate thinker. I have often wondered how one might bring a man to passion. So I have thought I might seat him on a horse and frighten the horse into a wild gallop, or still better, in order to bring out the passion properly, I might take a man who wants to go somewhere as quickly as possible (and so was already in a sort of passion) and seat him on a horse that can barely walk” (Kierkegaard [1846] 1941, p. 276).

¹¹ The quote comes from Doyle [1891] 2001, p. 14.

¹² Heidegger describes theorizing in the following way: “Thus it follows that *theōrein* is *thean horan*, to look attentively on the outward appearance wherein what presences becomes visible and, through such sight—seeing—to linger with it” (Heidegger 1977, p. 163). According to Lawrence Scaff, the Greek word *theōrein* is “a compound of *thea*, the view or look of something; *horan*, to see a thing attentively; and the name *theoros*, the attentive observer or the emissary sent to observe foreign practices and to ‘theorize’ about them—that is, to construct rational explanations of the strange and unexpected” (Scaff 2011, p. 11). The theorizer, in short, goes away to study and observe, and then thinks about it and explains it. For an attempt at a sociology of knowledge explanation of the Greek version of theorizing, see Sandywell (2000).

Phase # 1: The Prestudy or The Theorizing and Early Discovery Phase

- Observe - and Choose Something Interesting
- Name and Formulate the Central Concept
- Build Out the Theory
- Complete the Tentative Theory, including the Explanation

Phase # 2: The Main Study or The Phase of Major Research and Justification

- Draw up the Research Design
- Execute the Research Design
- Write up the Results

Comment: Theorizing constitutes an independent element of the research process; and it is mainly of importance in the prestudy. The purpose of constructing concepts, typologies, and so on is essentially heuristic at this stage. Theorizing plays a more formal role in the phase in which the major research is carried out and where the full force of methods comes into the picture. Concepts, typologies, and so on have now to be justified primarily on empirical grounds.

Depending on what form the major research takes—a survey, a historical study, an ethnographic case study—there will be changes and shifts in the scheme above, including the theorizing phase. For the skilled researcher, it should be emphasized very strongly, the two phases of research—the prestudy and the main study—tend to meld, be iterative, and take a deeply individual expression.

Fig. 1 The two parts of the research process in social science: the prestudy and the main study

Theorizing, it is also important to realize, is not conducted in the same way as someone who reasons according to logic. It draws on a very different way of thinking. This is an important point that I return to later in this article. For now, I focus on the element of observation in theorizing. How can observation be part of theorizing? The short answer is that you cannot theorize without having something to theorize about; and this something you have to acquire through observation if it is to be solid. Reasoning and observation are closely and organically related.

Peirce's discussion of this issue is instructive. Observation, as he said in a lecture course from 1898, is one of the three "mental operations" that make up "reasoning" (the others are "experimentation" and "habituation"; Peirce 1992b, 182). There is a logical part to the mental operation of making observations ("upper consciousness") as well as a more intuitive part ("subconscious"). The conscious part of observation is used to get a structural sense of a phenomenon; and one proceeds with this purpose in mind till one's idea corresponds to the phenomenon. This type of observation is described by Peirce as an act "moulding ... a more or less skeletonized idea until it is felt to respond to the object of observation" (Peirce 1992b, p. 182).

The less conscious part means to take off from some phenomenon, and in this way get a better grip on it. What matters here is "associational potency" or "a magnified tendency to call up ideas" rather than logical thought (Peirce 1992b, p. 182). As an illustration Peirce gives the example of himself looking very closely at an impressionist painting of the sea. "As I gaze upon it I detect myself sniffing the salt-air and holding up my

cheek to the sea breeze” (Peirce 1992b, p. 182). The two types of observation do not mix well, according to Peirce; and the theorizer has to be careful so that the conscious part does not suffocate the unconscious part.

Effective theorizing is closely linked to observation; and observation should in my view be interpreted in the very broad sense that it has been understood throughout the history of science (e.g., Daston and Lunbeck 2011). It should not only include, for example, Peirce’s conscious type of observation but also his subconscious version. It should include what we ordinarily mean by observation as well as experiments; it should include observations of others as well as observation of oneself (introspection). It should include meaning (thick description) and not exclude it (thin description). Since the main idea is to say something *new* when one theorizes, it is crucial to get as much and as varied information as possible.

Sources should be numerous and of all types: newspapers, archives, books, dreams, daydreams, illusions, speculations, interviews, details, statistical tables, anecdotes, conversations, what is on the web, what one has overheard and much, much more. All of one’s senses should ideally be used: sight, hearing, smell, touch, and taste (Simmel [1907] 1997). Anything that provides knowledge, information, associations, and ideas for what something is like is acceptable at this stage of the inquiry. The first rule for observation at the stage of discovery is: *Anything goes!*

Similarly, any objects that can be of help in making interesting observations should be used, from tape recorders and cameras to equipment for neuro-imaging and spectrum analyzers that measure the pitch of the human voice (e.g., Law 2004). There is, to repeat, no need to be overly scientific at this stage. The main point is to get to know some phenomenon in some novel way—and for this imagination is more important than logic.

Everett C. Hughes, who was very interested in the process of theorizing, touches on some of these issues in “The Place of Field Work in Social Science” (Hughes 1984, pp. 496–508). He refers, for example, to “the many arts of observation” and discusses not only the role of the observer, but also those of the participant and the reporter (Hughes 1984, p. 502).

Central to penetrating observation in social science, Hughes says, is what he calls “observation on the hoof” (Hughes 1984, pp. 504–505). By this expression he means the capacity to see what happens in society in terms of “going concerns” or institutional patterns. A good social scientist is deeply tuned in to the social dimension of things, in other words. According to dictionaries, doing something “on the hoof” also means to do it while one is doing something else, and doing something that one does not have the time to think about. In brief, the capacity for observation has to reach deep down into the personality of the researcher and bypass his or her more rational faculties, to be truly successful.

The best information is the one that one acquires oneself. Primary material is untheorized material and much to be preferred to what other social scientists have produced, even if it can be very hard to get. Tocqueville said that he would much rather create his own data than use that of others, even if it took him several times longer to do so. “I take incredible pains to find the facts for myself [and] I thus obtain, with immense labor, what I could have found easily by following another route” (Tocqueville 2003, p. 1200). Observation, as Hughes sums it up, is first of all about the importance “*to see for oneself*” (Hughes 1984, p. 497; emphasis added).

It is imperative to hold off on theorizing one's observations until one knows quite a bit about the topic to be theorized. Unless this is done, one will theorize on the basis of scant information or on the basis of the ideas that float around in society and have little grounding in what actually goes on. The second rule for observation is: "Don't think but look!" (Wittgenstein 1953, 66e).

The classical place where this attitude toward observation is explained is *The Rules of Sociological Method* by Durkheim. He calls the popular notions that we all have of what things are like "preconceptions" (*prénotions*); and he contrasts these to the "social facts" that the sociologist wants to map out and explain (Durkheim [1895] 1964, p. 17). According to one of Durkheim's most important rules for how to conduct research, "all preconceptions [*prénotions*] have to be eradicated" (Durkheim [1895] 1964, p. 31; emphasis in text). To do so, the researcher has to enter the research with an understanding of his or her "complete ignorance" of what the situation is really like (Durkheim [1895] 1982, p. 246).

To prevent the popular notions or preconceptions from taking the upper hand, when one engages in observation, one can draw on some of the ideas in Peirce's semiotics. A sign, according to Peirce, does not only stand for something else; it also has a relation to the interpretant or the actor (e.g., Peirce 1991). More precisely, a sign refers to some object, but it also *determines* the actor's perception of the object.¹³ The direction of causality, when it comes to the individual in his or her everyday life, is in other words the very opposite from what is claimed in much of social science. According to the latter perspective, a social object/sign is collectively created by a group or society as a whole. The causal arrow goes from the actors to the sign.

According to Peirce, the sign and the object also meld together in the mind of the interpretant; and this means that he or she does not distinguish between the two. An example may illustrate the point. If someone makes, say, the sign of thumbs up, other actors will not pay attention to the person's hand with the thumb pointing upwards, but just think that something has been given an okay or a positive evaluation.

Or to use the example from the quote with which this article begins: when we see an azalea, we do not see something green and something pink in a special configuration. We simply see an azalea—the concept of a specific flower with a specific history *and* the physical image of the flower itself, both simultaneously. How thumbs up and an azalea have turned into a concept, and the whole thing into a kind of mental *Gestalt*, is precisely what interests the theorizer.

To do science, according to Peirce, means among other things to challenge existing signs and concepts, and show how these have come into being; how some elements of reality have come to be cast as this particular concept rather than as some other concept. To be effective in undoing and picking apart existing signs, Peirce also argues, presupposes that the scientist experiences personal doubt. But as opposed to Descartes, he is emphatic that that the scientist cannot conjure up this

¹³ In a well-known letter to Lady Welby from December 23, 1908, Peirce wrote, "I define a Sign as anything which is so determined by anything else, called its Object, and so determines an effect upon a person, which effect I call its Interpretant, that the latter is thereby mediately determined by the former" (Peirce 1963, p. 29).

doubt at will. We grow up with certain notions, and these cannot simply be set aside through an act of will. “Let us not pretend to doubt in philosophy what we do not doubt in our heart” (Peirce 1955, p. 229).

But where there is doubt, Peirce continues, there will be thinking and theorizing. And this thinking will go on till a new stage of certainty (“belief”) has been established. “However the doubt may originate, it stimulates the mind to an activity which may be slight or energetic, calm or turbulent. Images pass rapidly through consciousness, one incessantly melting into another” (Peirce 1955, p. 27). The struggle to free ourselves from existing ideas and habits is central to science; and it takes place through a process that Peirce calls inquiry (e.g., Goudge 1969, pp. 13–18; Bertilsson 2009).

Durkheim states firmly that one should avoid introspection and only focus on outer signs or facts that can be observed in a reliable manner. This, I argue, mixes up what is appropriate in the context of discovery with what is appropriate in the context of justification. At the initial stage of the research—the theorizing and creative stage—one may want to do precisely the opposite of what Durkheim recommends, namely to penetrate as deeply as possible into the social facts. You do not only want to know what happens at the surface of some phenomenon, but also in its most fluid and intangible parts—and one way to do this, is for example through introspection. The reason for proceeding in this manner, to repeat, is to get as fine and close information as possible about some phenomenon, before one begins to theorize it.

The researcher should be aware that in observing something, you also pick up quite a bit that you are not conscious of. This means that one should not only try to train one’s cognitive skills of observation but also one’s general sensibility, and in this way pick up as much as possible of what is going on. By opening oneself up in this manner, one will become aware of some of the tacit knowledge and insignificant details that come with all observation (e.g., Collins 2010). C. Wright Mills, who was very interested in the process of theorizing, writes in *The Sociological Imagination* that “social observation requires high skill and acute sensibility” (Mills 1959, p. 70).

Michael Polanyi, who coined the notion of tacit knowledge, speaks in one of his works of something called “subception” (Polanyi 1966, pp. 7–8). Subception is contrasted to perception, which is an activity one is typically aware of. Polanyi gives the following example of subception. In an experiment, the subjects were given an electric shock each time they failed to recognize some random combination of syllables (“nonsense syllables”). They soon learned to avoid these combinations—but without being aware that they were doing this.

The key idea, once again, is to get as fine and close information as possible about some phenomenon before one starts to theorize. If not, one is likely to theorize on the basis of meager and faulty information, and produce an empty form of theory. When students once asked Everett C. Hughes to teach a course in theory, he is said to have muttered, “theory of what?” (Becker 1998, p. 1). The danger of producing an empty and premature kind of theory naturally also exists if one theorizes *after* having immersed oneself in the data. But when this is the case, we hope it will be corrected at the stage of justification or in the major study.

It can finally be noted that if one wants to be a creative observer, it may be useful to avoid reading too many secondary works early on. Most sociologists smile when they recall Auguste Comte’s doctrine of “mental hygiene” or his decision not to read

any works on the topic he was studying, on the ground that this would block his creativity. While this no doubt is the wrong strategy to follow, an argument can be made for trying to formulate one's own view, based on primary material, well ahead of reading what other social scientists have written on the topic.

One may view this approach as the intellectual equivalent of the infant industry-argument. Tocqueville, for example, took this stance when he worked on *Democracy in America*. He also devised a strategy for how both to avoid reading what others have written *and* to get the benefit of their analyses. He did this by asking his friend Gustave de Beaumont to read some literature on the United States that he thought might compete with his own views, and then tell him if they contained anything of importance (e.g., Swedberg 2009b, 101).

The rules of theorizing, part II: naming, conceptualizing, using analogies, metaphors, and types, developing a tentative theory, including an explanation

Theory cannot be improved until we improve the theorizing process, and we cannot improve the theorizing process until we describe it more explicitly, operate it more self-consciously, and de-couple it from validation more deliberately. A more explicit description [of the process of theorizing] is necessary so we can see more clearly where the process can be modified and what the consequences of these modifications are.

- Karl Weick, "Theory Construction as Disciplined Imagination" (1989)¹⁴

Before proceeding any further and outlining some of the other rules of theorizing, it may be useful to stop for a moment and define more closely two of the key terms in this article: *theory* and *theorizing*. The emphasis, to repeat, in today's social science is typically on theory, while theorizing is discussed very little, if at all. In this article, in contrast, the emphasis is on theorizing; and I suggest we may want to view theory as an instance of theorizing rather than the other way around. The reason for this is that theorizing contains the seed of theory, which can also be seen as the final instance of the theorizing process.

But even if we grant this, neither theorizing nor theory should be understood and defined exclusively in words. Both also include actions and interactions, with people as well as objects. In *Philosophical Investigations* Wittgenstein cites the "forming and testing a hypothesis" as an example of a language game; and we may want to do the same with theorizing (Wittgenstein 1953, 12e). Theorizing in social science means an attempt to understand and explain something that happens in society; and it includes everything that precedes the final formulation that is set down on paper or fixed in some other way ("theory"). This means interaction with people and texts such as books and articles, among other things. What is called theory is essentially the end product of the process of theorizing, the final formulation of an attempt to understand and to

¹⁴ The quote comes from Karl Weick 1989, p. 516. See also Weick's article "What Theory is *Not*, Theorizing *Is*" (Weick 1995).

explain something that happens. By final formulation is roughly meant its clothing in language (words or symbols) that is made public or made available publicly.

Theorizing includes what I have called observation as well as the activities to be discussed in this section, such as naming, conceptualizing, constructing typologies, providing an explanation, and so on. When these activities are carried out at the stage of discovery or in the prestudy, it should be emphasized, this is done first and foremost for heuristic reasons. This means that they are to be used primarily for purposes of discovery and not to summarize the result of systematic empirical research.¹⁵ And it is very much by becoming aware of precisely this dimension, I argue, that it becomes possible to produce successful theorizing. Intuition, imagination, and abduction are also all indispensable to successful theorizing; and they belong primarily to the stage of discovery.

And so does a certain playfulness or a capacity to let go of logic and rigor, and just let one's mind enjoy itself. Peirce described this as "Pure Play" and called it "Play of Musement" (e.g., Peirce 1935, pp. 458–459). One may begin by having some impression, he says, which will be followed by some observation; and then drift off into playfulness and reverie....

Peirce's thoughts on this topic were deeply inspired by Friedrich Schiller's idea that people are born with an instinct to play (*Spieltrieb*), not unlike Peirce's own view of abduction or the instinct to guess right (Schiller [1794] 2004, pp. 73–81, pp. 133–140; cf. Huizinga 1950). This instinct, according to the German poet and philosopher, was closely linked to aesthetics; and I suggest that we read Peirce's ideas on this topic as a plea for introducing not only play but also art into theorizing (see also March 1970). Art and theorizing belong closely together, even if the precise links between the two still remain to be better understood (for the deep affinity between theorizing and poetry, see, e.g., Heidegger 2011).

While theorizing, then, can be playful and full of movement, theory signifies the freezing of a set of thoughts. Theory is frozen into written language or a symbolic language such as mathematics. While theorizing never ends, theory is stuck forever in its formulation.

Theory is also qualitatively different to its originator and to those who use it but did not create it. For the originator, the link between theory and theorizing is very much alive and obvious. For those who are interested in a theory but did not produce it, things are very different. For them, the whole process that preceded the freezing into the end product is hidden. Theory appears as something that only exists as a text to be read, as mainly cognitive in nature, and as the result of a series of logical moves. The activity of reading an argument or working through a mathematical model, it can be added, is also a very special kind of cognitive activity. The argument and the way it is presented have been locked into place once and for all. If theorizing is fundamentally alive, theory is dead theorizing.

The fact that theory is typically someone else's theory also means that it is exterior and alien to one's own thinking or, to phrase it differently, that it lacks a

¹⁵ While the purpose of having concepts, typologies, explanations, and so on in the context of discovery or prestudy is essentially heuristic, in the context of justification or the main study they often need to be justified on empirical grounds.

certain organic quality. Incorporating someone else's theory into one's own set of thought is also a difficult process that can easily go wrong ("organ rejection").

C. Wright Mills speaks inspiringly in *The Sociological Imagination* about the craft of sociology consisting of two parts: method and theory (Mills 1959, p. 228). A sociologist, he says, should be his or her own theorist as well as methodologist. I am very sympathetic to Mills's idea of speaking about theorizing as a craft (or as a part of a craft), rather than, say, as a job or a profession. One reason for this has to do with the important role that tacit knowledge plays in a craft. It is well understood that the hand of the craftsman knows more than his or her mind; and being aware of this, helps the craftsman do a better job.

A craftsman needs to develop a special relationship to the material he or she works with. A carpenter, for example, must know how the different kinds of wood feel and act. Similarly a social scientist has to develop an intimate sense for what actors feel and think, well beyond what is recorded in standard interviews or surveys. Weber, for example, argues that the easiest way for a sociologist to enter into the mind of another person, to find out what meaning he or she has invested some action with, is if the person is using some rational method of thinking, such as adding 2+2 (Weber [1922] 1978, pp. 5–6). Empathy, according to Weber, represents another option for the sociologist to enter someone else's mind.

But Weber also says that there exists a specific artistic intuition that can be drawn on when we try to understand how others feel and think for sociological purposes (Weber [1922] 1978, p. 5). Authors seem to be able to read the way that people behave, and somehow guess what is behind their actions. That this intuitive capacity differs from logical reasoning is clear from a number of facts. Authors often say, for example, that the characters in their books do not obey them, but tend to behave as the characters want (for a similar "emergent" phenomenon when you improvise in jazz, see, e.g., Sudnow 2001).

While the expression "the craft of theorizing" is appealing, one should warn against the idea that theorizing can be reduced to a set of explicit rules, especially cognitive rules that should always be followed. Rules are typically helpful for the beginner, but they can also prevent a person's development once a certain stage of competence has been reached. The reason for this is that they exclude all that differentiates the mechanical and early following of a rule from what it means to have a skill or the capacity to handle nearly automatically a series of concrete situations in an independent and creative manner (e.g., Dreyfus and Dreyfus 1986). To try to unlock creativity through a set of handy rules that should always be followed, something that is not uncommon in the literature on heuristics, represents another of those epistemological obstacles that Bachelard talks about.

But rules that should be followed only until a skill has been developed is something very different. And the ones that I propose as basic to theorizing in social science are the following: naming, conceptualizing, broadening the concept into a theory, and completing the tentative theory through an explanation. I have roughly listed them in the order in which they are usually carried out, even if the actual process, to repeat, is typically iterative and more complex at a later stage (see Fig. 2).

One becomes good at theorizing through practice; to theorize is also a reflexive activity. One gradually teaches oneself how to theorize by repeatedly doing it, and thinking about what one does. One theorizes and reflects on what one does right and

Rule # 1 Observe - and Choose Something Interesting

You can only theorize on the basis of observation. Anything that can stimulate to a full view of the phenomenon should be used, from sturdy scientific facts to art in various forms. “*Don’t think but look!*” (Wittgenstein)

Rule # 2 Name and Formulate the Central Concept

Give a name to what you observe and try to formulate a central concept based on it. Here as elsewhere abduction (Peirce) is the key.

Rule # 3 Build Out the Theory

Give body to the central concept by outlining the structure, pattern or organization of the phenomenon. Use analogies, metaphors, comparisons—and all in a heuristic way to get a better grip on the phenomenon under study.

Rule # 4 Complete the Tentative Theory, including the Explanation

Formulate or model a full tentative theory of the phenomenon, with special emphasis on the explanation that constitutes the natural end of the theorizing process.

Comment: The most important part of theorizing takes place in the context of discovery or what is here called the prestudy, and that includes an early immersion in the empirical material. The way of thinking characteristic at this stage differs from the traditional and logical mode of thinking that is to be used when the result of the research is presented and that also infuses most methods. The rules of theorizing should only be followed initially and abandoned as soon as a skill in theorizing develops. This skill makes room for the iterative and often idiosyncratic way in which advanced and creative research is conducted. The skill in theorizing complements the mainly methodological skills that are in existence today. The different social sciences all have different traditions when it comes to methods and theory, something that means that one can expect many different strands of good theorizing.

Fig. 2 The basic rules of theorizing in social science

what one does wrong. Engaging in this type of auto-ethnographic analysis helps to increase one’s skill as a theorizer.

While the full cycle of theorizing goes from observation to explanation, it is not uncommon to a stop at some stage in the middle, use already existing concepts, categories, explanations, and so on. While it constitutes a contribution to establish a new and interesting phenomenon or a new and interesting concept, to provide an explanation for the phenomenon constitutes the natural end point of the theorizing process.

The general goal of theorizing is to come up with a new idea or what Peirce famously calls abduction, and a few words need to be said about this important but vague concept. “Abduction [means] observing a fact and then professing to say what idea it was that gave rise to that fact,” we read at one point (Peirce 1957, p. 244). Here is another central passage:

The first starting of a hypothesis and the entertaining of it, whether as a simple interrogation or with any degree of confidence, is an inferential step which I propose to call *abduction*. This will include a preference for any one hypothesis over others which would equally explain the facts, so long as this

preference is not based upon any previous knowledge bearing upon the truth of the hypotheses, nor on any testing of the hypotheses, after having admitted them on probabtion. I call all such inference by the peculiar name, *abduction*, because its legitimacy depends upon altogether different principles from those of other kinds of inference (Peirce 1957, pp. 236–237).

Abduction essentially comes about by “guessing right.” While Peirce disliked the term intuition, it is possible to describe abduction as a kind of scientific intuition, that is, as the kind of intuition that a scientist or scholar is partly born with and partly develops through hard work and the cultivation of one’s imagination.

To be good at abduction essentially means going into oneself and trying to locate, and possibly also train, something that is exceedingly fleeting and hard to get hold of, namely one’s capacity for scientific intuition. Most of us have at some point experienced creative moments of the type that Peirce describes and the euphoria that comes with them. Some of us also feel that whatever the reason may be, when this happens you have to put everything to the side and just go with the flow. To cite Weber, “when I ‘receive’ ideas or contemplatively allow them to form *inside* me, everything flows—no matter whether it is a lot or a little, valuable or valueless, it flows in abundance” (Radkau 2009, p. 98).

But can one also train one’s capacity for abduction? Weber, for example, notes in “Science as a Vocation” that “ideas occur to us when they please, not when it pleases us” (Weber 1946, p. 136). Many artists have, for example, tried to get their ideas going, using everything from alcohol and drugs to the company of friends and muses.

Peirce himself argued that abduction is a kind of biological quality that human beings as a species are born with. Just like chickens have the capacity of “guessing right,” when it picks something up from the ground and start to eat it, human beings have the mental capacity to select somehow the right hypothesis among a myriad of possible ones.

But does Peirce also think that one can train this capacity or, less strongly, to learn to activate it at will? As far as I know, he never addressed these issues in his work. It would seem clear, however, from looking at Peirce’s life, that he believed that this was possible. Why else would he train himself in such an austere fashion, in every conceivable science including economics and sociology (e.g., Swedberg 2011)?

It is also true that Peirce believed very strongly in the idea that one can train one’s general capacity to reason and to theorize—a position that I also take in this article. This subject is discussed in one of his most important articles when it comes to theorizing, “Training in Reasoning” from 1898. According to Peirce, it is self-evident that one should try to develop one’s capacity for reason. “I do not know why a man should not devote himself to the training of his reasoning powers with as much assiduity as to corporeal athletics” (Peirce 1992b, p. 181).

The way to go about this is to focus systematically on the three mental operations that make up reasoning: *observation*, *experimentation*, and *habituation* (Peirce 1992b, pp. 182–192). I have already mentioned how Peirce thought that observation consists of two parts, one that is conscious and logical, and another that is unconscious and creative. Experimentation means to intervene actively in what one studies; it involves will-power as well as “creative imagination” (Peirce 1992b, p.

188). Habituation has to do with one's capacity to break old mental habits and create new ones. Mental habits, according to Peirce, mainly have to do with the way that ideas are linked to each other.

Still, what Peirce discusses in "Training in Reasoning" is not abduction or at least not in its pure and characteristic form. And even if it is clear that there exists a distinction between the capacity to theorize and to theorize in a deeply creative manner, something should also be said about the possibility of training one's capacity for abduction.

As those who are familiar with Peirce know, there does exist one intriguing example of how Peirce put his capacity for abduction to an empirical test in a deliberate fashion. It is a peculiar story and I will retell it in some detail (see Sebeok and Umiker-Sebeok 1981 for the full version).

During a boat trip in 1879 Peirce had his coat and a valuable Tiffany watch stolen. He had reason to believe that one of the waiters on the boat was the thief, since only they had had access to his belongings. He therefore had them lined up so he could question them. The interrogation, however, did not result in anything; and Peirce later wrote:

When I had gone through the row [of waiters] I turned and walked from them, though not away, and said to myself, "Not the least scintilla of truth have I got to go upon." But thereupon my other self (for our communings are always in dialogues), said to me, "But you simply must put your finger on the man. No matter if you have no reason, you must say whom you will think to be the thief." I made a little loop in my walk, which had not taken a minute, and as I turned toward them, all shadow of doubt had vanished (Sebeok and Umiker-Sebeok 1981, pp. 11–12).

Peirce took the person he suspected to be the thief aside and interrogated him. The individual denied that he was guilty, and Peirce had to let him go. Peirce, however, was convinced that he was right and he had the man followed, to find out where he lived. He later entered the apartment of the suspect and guessed exactly where the watch had been hidden. He also guessed that his coat had been removed to a neighbor's apartment, and again he was right.

The story of how Peirce retrieved his stolen items illustrates, among other things, how eccentric and willful he was. He himself described the episode in a letter to William James as an instance of the "theory why it is so that people so often guess right" (Sebeok and Umiker-Sebeok 1981, p. 16). It is hard to disagree with this assessment—and that Peirce had somehow taught himself to become very good at this guessing game.

But even if human beings have guessed right throughout history more often than if only chance was involved, it should also be pointed out that according to Peirce, most scientific abductions are either impossible to test or turn out to be outright wrong, once they have been tested (e.g., Peirce 1957, pp. 242–243). The centrality of abduction to Peirce's theory of how an inquiry should be conducted does not mean that science should consist of fantasy and imagination. A theory, Peirce insisted, has its origin in an abduction but it must be testable as well. And it must be tested.

Naming, to leave abduction now and proceed to what comes after observation, represents a difficult philosophical concept (e.g., Kripke 1980). Here, in contrast, it will simply be used to refer to the following two related elements of theorizing:

locating a novel phenomenon and giving it a name. It is clear that one may also want to name new concepts, new models of explanation, and so on.¹⁶

Discovering a new phenomenon constitutes one of the most important tasks in social science, and finding the right word(s) to describe it, and in this way really capture it, often represents a frustrating task. But if this is not done, the phenomenon can slip between one's fingers. It can similarly be hard to find a new name that fits the new phenomenon and provides it with a distinct identity.

The prevalent view in any society is that most phenomena are well understood (Durkheim's "preconceptions"). To the sharp-eyed observer, however, phenomena are typically different from their common perception; things also constantly change in modern society. But to see something novel and to go beyond habitual categories is very difficult; it can also be unsettling.

It sometimes happens that one locates a totally new phenomenon, but this is not common. What one observes is typically often covered, but not completely so, by some existing concept. In this situation it is important not to dismiss the difference, and to squeeze one's observations into some existing category. Instead one should zoom in on the difference, magnify it, and explore if the phenomenon does not merit a new name or at least a new description or definition.

There exist different attitudes about what name is appropriate for a new phenomenon. One can, for example, use a term that already exists in everyday language, and just introduce it into the social science vocabulary. According to Durkheim, this is the best way to proceed. But he also mentions one exception; and this is when a lay term covers "a plurality of distinct ideas" (Durkheim [1895] 1964, p. 37, n. 12). In this case, he says, it is preferable to create "new and distinctive terms."

One can also select a totally new name and in this way draw attention to some phenomenon and symbolically mark it off from other phenomena. One way of doing this is to choose some forgotten or rarely used name, such as *anomie* (Durkheim), *habitus* (Bourdieu) or serendipity (Merton). One can also create a new name, such as *sociodicy* (Aron), *catnet* (Harrison White) or *gloriometer* (Tarde). And one can elaborate on some already existing name or concept, as exemplified by such terms as *status contradictions* (Hughes), *greedy institutions* (Cosser), and *role-set* (Merton).

Weber argues that it does not matter very much if one uses a new term or an already existing one, as long as its meaning is clear (Weber 2001, pp. 63, 77). He also notes that many academics get irritated when a new term is introduced, unless they have coined it themselves. His own preference, when no term already existed, was to use "the nearest and most descriptive words from traditional language" (Weber 2001, p. 63).

My own view is that one should avoid introducing too many names and also to give a new phenomenon some odd new name. It is rare to discover something really novel; and forcing the reader to remember new terms, without getting much for it, only creates irritation. The rule should be that if one has something major to say, a new name is warranted. And just as we think highly of "Marx" and "Weber," we have a high regard for such plain concepts as "capital" and "social action." In brief, in the end it is the idea and force behind the word that counts, not the term. The

¹⁶ Montesquieu writes in *The Spirit of the Laws*, "I have had new ideas; new words have had to be found or new meanings given to old ones" (Montesquieu [1748] 1989, p. xi).

audience one is writing for should also be kept in mind when a new term is chosen (e.g., Hughes and Hughes 1952).

In discussing naming I have a few times crossed the line between a name and a concept. There exist several differences between the two; a scientific concept is in particular more analytical and abstract than a name. Peirce defines a concept as “the rational purport of a word or a conception”; and the reference to rationality is important (Peirce 1998, p. 332). It is precisely this quality, one can argue, that has made the concept “one of the great tools of all scientific knowledge” (Weber 1946, p. 141).

One of the rational qualities of a scientific concept is that it makes it possible for some phenomena to be clearly identified as belonging to a general category. A second rational quality of the scientific concept has to do with its important role in the scientific enterprise as a whole. To cite Carl Hempel: “to be scientifically useful a concept must lend itself to the formulation of general laws or theoretical principles which reflect uniformities in the subject matter under study, and which thus provide a basis for explanation, prediction, and generally scientific understanding” (Hempel 1965, p. 146).

To link up the central concept in the prestudy to a classification, a typology, or an explanation is something I refer to as “building out the theory.” It can be described as going beyond the definition of a concept and outlining the full structure of the way that some phenomenon operates. What causes a phenomenon, and what consequences it has, also belong to this phase of theorizing.

One can either develop a new central concept or use an existing one. It is also possible to improve an existing concept by adding to it. In developing a new concept, one can either create a totally new concept or, more commonly, turn a rudimentary one into a full-fledged concept. The former is sometimes called a proto-concept, and the transition from a proto-concept to a full-fledged concept has been discussed in an illuminating way by Merton (1948; see also Fleck [1935] 1979).

“A proto-concept,” Merton says, “is an early, rudimentary, particularized and largely unexplicated idea” (Merton 1984, p. 267). “A concept,” in contrast, “is a general idea which, once having been tagged, substantially generalized, and explicated can effectively guide inquiry into seemingly diverse phenomena.” While proto-concepts “make for early discontinuities in scientific development,” fully developed concepts “make for continuities by directing our attention to similarities among substantively quite unconnected phenomena” (Merton 1984, p. 267).

One example of a proto-concept would be the notion of “theorizing,” as currently used in sociology. Ever since its first appearance in a sociological journal (in 1896), this term has been much less popular among sociologists than “theory” (Small 1896, p. 306). Through a search on JSTOR one can follow its sporadic appearance in sociological journals since the 1890s until today. Such a search also shows that while the term “theorizing” has been used now and then, it has never been properly defined, discussed, and expounded upon.¹⁷ As a result—and as Merton would predict—little progress has been made in understanding the process of theorizing.

¹⁷ See note 3. While JSTOR allows you to track whether a certain word appears in the title, the abstract, or the text of an article, it only covers certain journals and not books at all. I have been unable to find a full book on theorizing in sociology or any other social science. What literature there does exist typically focuses on a special and very cognitive version of theorizing, either bypassing the initial phase of empirical fact gathering or being primarily interested in constructing hypotheses and how these can be falsified.

It is also possible, as mentioned earlier, to take an existing concept and improve on it. This can be done in several ways. Weber, for example, sometimes took a concept and split it into two, in this way making it more useful for some particular purpose (interests became “ideal and material interests”; rationality became “formal and substantive rationality,” and so on). According to Weber, the value of a concept should be judged from the viewpoint of how useful it is for the concrete task at hand; in itself a concept cannot be said to be good or bad (e.g., Weber 1976, p. 47).

It is sometimes necessary to clarify an existing concept; and also this means that it is changed in some respect. Merton regarded conceptual clarification as a particularly important task in social science. “A good part of the work called ‘theorizing,’” he once wrote, “is taken up with the clarification of concepts—and rightly so” (Merton 1948, p. 513). It has also been suggested that the really important scientific concepts are not suddenly invented, but evolve over time (e.g., Nersessian 2008). In sociology one can perhaps use class as an example of an evolving concept of this type: from Marx over Weber to modern stratification experts.

As earlier mentioned, concepts should primarily be used as heuristic tools at the stage of theorizing, that is, to discover something new, and not to block the discovery process by forcing some interesting observation into some bland category. Insisting on exact operational definitions is usually not helpful at this stage. According to a well-known formulation, concepts should at this stage be seen as sensitizing and not as definitive (Blumer 1955).

Knowledge about the past of a concept can sometimes help and inspire the redefinition of a concept in some novel and interesting way (e.g., Somers 1995). While it is laborious to establish the history of a concept, one can minimally check its use over time in the Oxford English Dictionary. A social science dictionary that not only includes the current meaning of various concepts, but also their earlier ones, can be helpful as well.

A discussion of concepts would be incomplete without a mention of Wittgenstein’s work. It was Wittgenstein who first questioned the age-old notion that a concept can be clearly and unambiguously defined, and that the items it covers are all similar in some respect. He concluded that at the most there may exist a certain resemblance between some of the items that a concept covers (“family resemblance”; Wittgenstein 1953). This critique of the classical notion of a concept is today commonplace in cognitive psychology.

Wittgenstein also warned that words and concepts in philosophy can lead you astray; and his ideas on this score can be extended to the social sciences. One solution when there exists a concept that blocks insight, Wittgenstein suggested, is simply to restate the phenomenon without using the concept. This is what Heinrich Hertz did, according to Wittgenstein, when he suggested that Newtonian physics should be recast without using “force” as the central concept (Monk 1990, p. 446).

Another example of how to proceed in this type of situation comes from World War II, when Wittgenstein worked as a volunteer at a hospital in London. Since World War I it had been known among medical doctors that soldiers and civilians who had suffered acute traumatic injuries would experience so-called “wound shock” (Monk 1990, pp. 445–47, 452–53). The doctors whom Wittgenstein worked with, however, were unable to establish clinically the symptoms associated with

wound shock. Finally, and to Wittgenstein's great satisfaction, they decided to simply abolish the concept, and instead focus on studying what happens when traumatic injuries take place. Wittgenstein suggested that the word "shock" should be printed upside down, to indicate how useless it was.

The element of generalizing plays an important role not only when concepts are formed but throughout the process of theorizing. According to Peirce, "the most important operation of the mind is that of generalization" (Peirce 1957, p. 211). He also notes that while the process of generalizing and making abstractions are closely related, they are not identical (Peirce 1957, pp. 211–212). Concepts can be more or less general, and it is crucial to know at what level they should be established. Very general concepts, for example, may be uninteresting and so may very specific concepts.

Once the central concept is in place, the next step (or rule) in theorizing is to try to build the theory out. This can be done in a variety of ways—through the help of metaphors and analogies, by constructing types and typologies, and more. Metaphors are related to concepts, and while they are important to sociology their role in theorizing has rarely been discussed. According to Ilana Silber, who has looked at the use of spatial metaphors in sociology, "little has been done to analyze the metaphorical dimension of sociological theorizing in general" (Silber 1995, p. 326). This is a pity, she notes, since a metaphor can be very useful "as a thinking tool" (Silber 1995, p. 335).

Metaphors, according to Silber, are useful as heuristic devices. The key idea is to compare what is being researched to something else; and in doing so, open up the topic to new perspectives. Well-known examples of master metaphors in social science include society as a contract (Rousseau), social life as a theater (Goffman), and the city as an ecology (Park-Burgess).

Exactly how metaphors operate is not clear; and, again, there exist a number of studies in cognitive science on this topic. Philosopher Max Black has also developed an influential theory of metaphors that is worth mentioning, the so-called interaction view of metaphors. According to Black,

A memorable metaphor has the power to bring two separate domains into cognitive and emotional relation by using language directly appropriate to the one as a lens for seeing the other; the implications, suggestions, and supporting values entwined with the literal use of the metaphorical expression enable us to see a new subject matter in a new way. The extended meaning that results, the relations between initially disparate realms created, can neither be antecedently predicted nor subsequently paraphrased in prose... . Metaphorical thought is a distinctive mode of achieving insight, not to be construed as an ornamental substitute for plain thought (Black 1962, pp. 236–237; cf. pp. 28–47).

An analogy is similar to a metaphor, but less radical. According to Peirce, "*analogy* is the inference that a not very large collection of objects which agree in various respects may very likely agree also in other respects" (Peirce 1957, p. 206). Some helpful attempts to explore the use of analogies in theorizing have been made by sociologists (see, e.g., Abbott 2004, pp. 113–118; Vaughan 2004). Analogies also play an important role in legal reasoning, especially in legal systems based on custom. The key idea is that you go from one particular case to another particular case, often

following the logic of syllogism (Weber [1922] 1978, pp. 407, 787; see also Levi 1949; Sunstein 1993).

The study of analogies has proceeded the furthest in cognitive science (e.g., Gentner 2003, Nercessian 2008). According to cognitive scientists, human beings use analogies in a variety of situations and especially when they need to understand something new. While reasoning by logic is traditionally seen in Western thought as the one and only way to advance to a solution, analogies represents another and many times superior way of dealing with a problem. Analogies, cognitive scientists also argue, are often used together with other non-traditional ways of reasoning, such as the use of images and simulation.

Research in cognitive science on the use of analogies, patterns, and other non-traditional ways of reasoning is of much interest to the project of theorizing in social science; and there are several reasons for this. For one thing, it is clear that analogies and similar non-logical ways of thinking play much more of a role in the context of discovery than in the context of justification.

There is also the case, according to various experiments in cognitive science, that one can train oneself in becoming better at these non-traditional ways of reasoning. So far cognitive science has mainly focused on the use of these types of reasoning in everyday life. But once the research on their use by scientists has become more common, there may be useful insights also for social science theorizing.

To create types and categories represents another way of building out a theory. Categories may be created for heuristic purposes and are essentially used to differentiate facts from each other and in this way order them. A taxonomy or a classification can be very useful, but should not be mistaken for an explanation or seen as the substitute for one. Ever since the heydays of Linnean botany, it has also been realized that a classification must not be constructed in such a way that it blocks further research. Ideally there should be a link between a classification and an explanation.

Particularly as a first attempt to order data, categories can nonetheless be very helpful. When I was a graduate student I worked as a research assistant for Everett C. Hughes, and the task he assigned to me was to locate and categorize studies of a certain type. As I did this, I slowly began to understand that creating categories also means making a number of theoretical assumptions that I had not been aware of.

Types may be further developed than categories, but are usually less comprehensive. A type may be part of a conceptual pair (such as *Gemeinschaft/Gesellschaft*) or of a full typology (such as Weber's three types of authority). Some argue that a typology can only be justified on empirical grounds (e.g., Lazarsfeld 1962; Bailey 1973). This, however, is only true at the stage of justification. At the stage of discovery a type can be used for heuristic purposes as a way of discovering something new.

Arguments in favor of using the type as a heuristic tool go far back in sociology. They can be found in what Weber says on the ideal type, and in what Durkheim says on typology in *Rules of Sociological Method*. Indeed, Weber uses precisely the word heuristic (*heuristisch*) to describe the reason why we may want to use ideal types in the first hand (e.g., Weber [1922] 1972, p. 10; 1988, p. 190; cf. Bruun 2007, pp. 225–231).

At a general level, Weber's ideal type can be described as a special type of concept, more precisely a concept that has been specifically adapted for social science purposes. It is created through an "analytical accentuation" of certain elements in a phenomenon and can be described as a "conceptual construct" (*Gedankenbild*; Weber 1949, p. 90,

p. 93). Weber also makes clear that an ideal type is not a hypothesis to be verified, but serves a different purpose. “It [the ideal type] is no ‘hypothesis’ but it offers guidance to the construction of hypotheses” (Weber 1949, p. 90).

An ideal type can be heuristic in several ways according to Weber. It may, for example, be helpful to start out the analysis by constructing an ideal type. The reason for this is that having an ideal type makes it easier to handle the bewildering amount of facts. In this case the ideal type “serves as a harbor before you have learned to navigate safely in the vast sea of empirical facts” (Weber 1949, p. 104).

An ideal type can also be of help in another way. You construct an ideal type and then compare it to the empirical situation. In this way you will find out that either you are on the right track or there is too much of a gap between the two—in which case you need to account for the difference (e.g., Weber [1922] 1978, p. 21).

A handy tool for theorizing, which is related to the idea of typology, is the 2×2 . By constructing a 2×2 one can sometimes go from an intuition to a more precise idea (e.g., Collier et al. 2008). Stinchcombe describes the fourfold table as “a standard tool of sociological theorizing”; and it is clear that quite a few sociologists use it to develop their ideas (Stinchcombe 1968, p. 46).

Thomas Schelling, another scholar who excels in theorizing, has pointed out that if one uses a 2×2 for two actors, one has the rudiments of a simple game of strategy. The example he uses to show this, is two persons who are travelling on a train and want to meet up in the dining car (or who alternatively want to avoid each other when it is time to eat). There are two dining cars, one that is first-class and another that is second-class; and this means that a choice has to be made. This choice can be depicted in 2×2 matrices, which are similar to the ones used in game theory (see also, e.g., Rapoport et al. 1976).

Schelling’s argument can be found in an article called “What Is Game Theory?” and his analysis is a far cry from the complex models that are common in today’s game theory. According to Schelling however, “what may be of most interest to a social scientist is these rudiments” (Schelling 1984, p. 221). “The rudiments can help him to make his own theory, and make it in relation to the particular problems that interest him.... Whether the theory that he builds with [these rudiments] is then called game theory, sociology, economics, conflict theory, strategy or anything else is a jurisdictional question of minor importance” (Schelling 1984, pp. 221–222).

The line between a fully built out theory and a model is not very clear. Nonetheless, a fully built out theory includes an explanation and often takes the form of a model. If Basic Rule Number 1 in theorizing is to observe; if Number 2 is to name the phenomenon and develop a central concept; if Number 3 is to build the theory out; then Number 4 is to complete the tentative theory, including an explanation (see Fig. 2 again).

The use of abduction is important throughout the process of theorizing, including the stage at which an explanation is produced. An explanation should ideally be analytically stringent and economical; and the theorizing process is not over till an explanation has been produced. There exist many different kinds of explanation that one can play around with for heuristic reasons: teleological explanations, functional explanations, explanations based on comparisons, counterfactuals, and so on.

Words are used for many explanations and mathematics for many models. Diagrams may be used at several stages in the discovery process and also as a heuristic tool for explanation (e.g., Peirce 1933; Larkin and Simon 1987; Podolny 2003; Edling 2004).

As an example of a heuristic use of a diagram, one can mention Thomas Schelling's model for residential segregation, which he developed while he was travelling on an airplane and later finished at his kitchen table (Schelling 1990, p. 191). Decision trees and network figures can be used to make ideas flow and to come up with explanations. In all of these cases, it deserves to be mentioned once more, that what is involved is a non-traditional kind of thinking, typically thinking in some form of patterns.

Can material objects be used for heuristic-explanatory purposes in social science, a bit like Linus Pauling's wooden model of a triple-strained DNA helped Cricks and Watson to discover the correct molecular structure of DNA? I do not know of any examples, even if the idea of using objects to construct an explanation in social science seems plausible enough. It was, for example, a miniature model of a car accident, used in a trial in Paris, that supposedly triggered Wittgenstein's so-called picture theory of meaning.

If one on the other hand takes a broad view of how an explanation comes into being, at the stage of discovery, one might cite many examples of how objects may be of help. One of these would be the paper files and index cards that were used by an earlier generation of social scientists for taking notes, and which today have been replaced by computer files and special programs for taking notes. Many readers of *The Sociological Imagination* will remember Mills's playful suggestion for how to discover some new connections in the material you have collected: "you simply dump out heretofore disconnected folders, mixing up their contents, and then re-sort them" (Mills 1959, p. 212).

Robert K. Merton and Niklas Luhmann both had enormous card files and their own ways of interacting with them. Both used indices and alphabetization, two indispensable means for keeping order among one's notes. Merton seems to have used his files mainly as an extended memory, while Luhmann said that his files helped him to enter into a dialogue with himself (Evans 1961, pp. 39–40; Luhmann 1981).

Also Peirce was an avid advocate of keeping records on slips of papers. His motto was that "everything worth notice is worth recording"; and he gave the advice that "records should be so made that they can readily be arranged, and particularly so that [they] can be *rearranged*" (Peirce 1992b, p. 188). Peirce was very particular about the kind of paper that should be used for note taking; he also had very firm ideas about how many of these one should write every day:

I recommend slips of stiff smooth paper of this exact size. By ordering 20000 at a time, you get them cheap; and 20000 will last an industrious student a year. For you won't average more than 60 a day and there will be, one way or another a month of idleness in the year. Upon these slips you will note every disconnected fact that you see or read that is worth recording.... After thirty years of systematic study, you have every fact at your fingers' ends. Think what a treasure you will have accumulated (Peirce 1992b, p.188).

In a similarly extended manner as files, one can perhaps say that objects are used for explanation also in experiments. Besides the idea of the concept, Weber considered the experiment to be "the second great tool of scientific work" (Weber 1946, p. 141). The type of experiments that social scientists do, are very different from the ones that are common in the natural sciences (e.g., Knorr Cetina 2002). They also exist in a bewildering amount of variation (e.g., Morton and Williams

2008). Still, objects of different kinds are often part of what produces the explanation; and this also goes for so-called thought experiments.

Explanation is one of the most difficult topics in the philosophy of science; and I limit myself here to some elementary remarks on its role at the stage of discovery. Counterfactuals can, for example, be useful as a heuristic device to construct an explanation. Weber's description of how the strategy of counterfactuals can be used to determine the importance of the Battle of Marathon for Western culture is an early illustration of this ("objective possibility"; Weber 1949, pp. 164–188; [1922] 1978, p. 10–11).

One may argue that the very notion of explanation is closely linked to the idea of counterfactuals, since there can be no explanation without the existence of a change to some initial stage, be it actual or theoretical (e.g., Lewis 1973; Morgan and Winship 2007). One version of this approach to causality is known as the manipulationist or interventionist account of causality. The key idea is that causal relations can potentially be manipulated and controlled (Woodward 2003).

That explanations at the stage of the discovery process are to be used for heuristic purposes is of special relevance for functionalist explanations. These are currently not considered legitimate in social science, but can nonetheless be useful in generating new ideas. Weber makes precisely this point in *Economy and Society*. While emphasizing that a functionalist analysis can be "highly dangerous," he also says that it is not only helpful but "indispensable" at an early stage of the analysis (Weber [1922] 1978, p. 15).

It deserves to be repeated that the link between explanation and facts is crucial at the stage of discovery. To theorize, as illustrated by the following example, means essentially to produce an explanation of something you have observed. In an interview from some years ago Albert O. Hirschman explained what he meant by theorizing, precisely by linking the explanation to an artful observation. Like Schelling, Hirschman has developed a kind of theorizing style that is very instructive:

It was when I looked at Colombian economic development—how certain functions are carried out or are not carried out or poorly carried out—that I made one of my first or most basic observations. It concerned the difference in performance of the airlines and the highways. Airlines perform better than highways for the reason I explained in *The Strategy of Economic Development* (1958), that the penalty for not maintaining planes is far more serious than that for not maintaining highways. It was a very simple observation, but I think that the talent I have is not just to come up with an interesting observation, it is more a question of going to the bottom of such an observation and then generalize to much broader categories. I suppose that this is the nature of theorizing (Hirschman 1990, p. 156)

Before leaving the Hirschman example it should be noted that the capacity to generalize plays an important role in Hirschman's view of "the nature of theorizing." This also seems to have been the case with Everett C. Hughes, who encouraged his students to move up and down the ladder of generalization. According to one of his colleagues, "I do not recall a single doctoral examination in which Hughes did not close by asking the candidate: 'under what other conditions and in what other

situations would you expect phenomena similar to those that you have written about to occur” (Coser 1994, p. 13).

Models are crucial to certain types of explanations, be it at the stage of discovery or justification; and they are often formulated in mathematical language (e.g., Rapaport 1959; Schelling 1978; Simon 1991; Varian 1998). Models are more intuitive and less worked out at the stage of discovery than at the stage of justification. Still, one advantage of using a model when you theorize is that all assumptions are made explicit. Another is that models are economical; and a third that they show all the consequences of making certain assumptions—including novel and unexpected ones.

Models essentially reconstruct something *as if* it had happened in a specific way (cf. Vaihinger [1911] 2009). According to one philosopher, they are “speculative instruments” (Black 1962, p. 237). As does a wedding, they bring together “disparate subjects.” They also “reveal new relationships” and, “as with other weddings, their outcomes are unpredictable” (Black 1962, p. 237).

Stephen Toulmin, another philosopher, describes the virtues of a model as follows: “it is in fact a great virtue of a good model that it does suggest further questions, taking us beyond the phenomenon from which we began, and tempts us to formulate hypotheses which turn out to be experimentally fertile... Certainly it is this suggestiveness, and systematic deployability, that makes a good model something more than a simple metaphor” (Black 1962, p. 239).

Recently the metaphor of social mechanisms has become popular in sociology (e.g., Hedström and Swedberg 1998). While it is hard to explain exactly what a social mechanism is, one does not have to be overly concerned with this issue at the stage of discovery. What is more important is to try to figure out new social mechanisms, that is, ways of explaining what happens in a highly transparent manner. With the help of a mechanism you practically can see how C leads to D leads to E (e.g., Elster 2007, pp. 32–51). The general goal in science of creating *clarity* is closely related to the idea of social mechanisms (e.g., Peirce 1992, pp. 124–141; Weber 1946, p. 151).

Teaching theorizing: exercises in theorizing

theorizer n. one who theorizes
- *Oxford English Dictionary*¹⁸

The project of theorizing includes ideas about the way that theorizing can be taught. These ideas, in the version of theorizing that is presented in this article, constitute a crucial part of the project of theorizing. In teaching theory the teacher is essentially an enlightened and knowledgeable guide. The students read important works by important sociologists, and learn to critically comment on these and explicate them (e.g., Markovsky 2008). Exactly how the ideas in these works are later to be used in the students’ own research is not very clear (e.g., Rueschemeyer 2009).

¹⁸ *Oxford English Dictionary* Second edition, 1989; online version November 2010. <http://www.oed.com:80/Entry/200430>; accessed on February 13, 2011.

In theorizing, in contrast, the students learn to theorize themselves. The goal here is for each student to become a skillful and imaginative theorizer. This is to be accomplished by getting the students to learn for themselves how to observe phenomena, how to create concepts, how to build out the theory, and so on. They do so by drawing on their knowledge of sociology and by learning to locate the capacity to theorize within themselves. The role of the teacher, when it comes to theorizing, is truly Socratic, namely to help the students give birth to their own children/theories.

Theorizing is deeply democratic in that it is built on the assumption that everyone can theorize. “To think at all is to theorize,” as Coleridge put it (Coleridge 1812, p. 132). To think about the way that something takes place is to theorize. To learn how to theorize efficiently is to raise this capacity to a conscious level through exercises. The way to do this is to learn how to locate the theorist within oneself. The goal is for every social scientist to be his or her own theorist (Mills 1959, p. 324).

While traditional lecturing, in combination with classroom discussion, is the way that theory is usually taught, something different is needed when theorizing is on the agenda. Learning to theorize is similar to learning methods: you do not do this by reading about them but by using them. Similarly, theorizing demands learning by doing.

There exists no agreement on how to teach students how to theorize on their own. The most natural way, perhaps, would be to let each student develop a research topic during the course of a term and, as part of this, to theorize. This is similar to the way that field work, participant observation, and qualitative methods are often taught; and this means that there exists plenty of experience to draw from.

There also exists another way of teaching theorizing, as advocated by Charles Lave and Jim March in *An Introduction to Models in the Social Sciences*. In this textbook, students are presented with problems to theorize and solve. Hints are given, interspersed with statements in bold, such as the following:

STOP AND THINK. Devote a moment’s time to thinking of a possible process that might produce the observed result (Lave and March [1975] 1993, p. 11).

Here is one example that Lave and March use: why are football players considered dumb in college? One possible explanation, they suggest, is that football players spend so much time on practice that they have little time to study. Another is that students who are successful in one area of life are satisfied with this and do not care to exert themselves in a second area. A third is that students are jealous of those who are successful, and therefore call them dumb. Lave and March then encourage the reader to try to figure out a way to discriminate among the various explanations.

The book by Lave and March can be described as an attempt to teach students to theorize primarily by developing their capacity to invent a number of different explanations, each of which could explain some phenomenon. In doing so their general approach is similar to that of Stinchcombe in *Constructing Social Theories*, where one can read that “a student who has difficulty thinking of at least three sensible explanations for any correlation that he is really interested in should probably choose another profession” (Stinchcombe 1968, p. 13).

I have taught a few classes in theorizing, but I have proceeded in a different way from what so far has been discussed: letting the students conduct empirical research during the course of a term, and letting them do exercises that aim at developing

their capacity to invent explanations for some existing phenomenon. I have so far resisted the former approach because I think that the students need to theorize repeatedly, not just once, in order to get the hang of it.

The idea of having the students confront problems and invent explanations for these, along the lines of Lave and March, strikes me as being a bit too cognitive in nature. The fact that the problems are prepackaged or predefined, in the sense that the students have not created them themselves, may also make it hard for them to feel inspired to theorize on their own (for the type of problems that inspire scientists, see, e.g., Merton 1959; Kuhn 1970, pp. 35–42; Simon 1991).

The way I myself proceed when I try to teach theorizing is as follows. For each class the students are told to read a social science article that is full of ideas and imaginative. Here is a sample of articles I have used and that work well: “Sociology of the Senses” by Georg Simmel; “Body Techniques” by Marcel Mauss; and “Lyrical Sociology” by Andy Abbott (Simmel [1907] 1997; Mauss [1934] 1973; Abbott 2007). I have also used philosophical texts and poetry, to make the students aware of the central role that language plays in theorizing (excerpts from *Philosophical Investigations* by Wittgenstein and poems by Emily Dickinson).

The students are told that in reading these texts they should be on the outlook for something they find truly *interesting*; and that once they have finished the article, they should try to theorize, using whatever they found interesting as their point of departure. The idea is not to deepen further the thought of the author of the text or to comment on the text, but to theorize on your own with the help of something in the text.

To move along and to set free their theoretical imagination, the students are then encouraged to make free associations from whatever they found interesting in the article until they find a topic they want to work with. They should also try to assign a new name to whatever they end up with, develop new concepts, build out the theory, and finally produce a full tentative theory with an explanation. This is of course a tall order, and more of a goal to strive for than a description of what is usually accomplished. To counter this to some extent, one can let the students work twice or three times on the same topic.

Let me give an example. A student studying negotiations at IMF may, in reading Simmel on the senses, find some remark about the role of the senses in initiating or breaking off social relations that is especially interesting—and then take off on his or her own. The student may develop some ideas about, say, the role of the senses in important negotiations. Negotiators who are able to read honest signals (say, involuntary smell or the movement of certain facial muscles) might do better than those who are not. One can try to name this capacity to read signals, and explain what role it plays in negotiations and perhaps also in other activities.

Here is another example. A student doing no particular research at the time may find something else that is interesting in Simmel’s text on the senses. Thinking about smell, he or she may reflect on the fact that air fresheners do not actually eliminate bad smell; they simply stop you from smelling it. This is similar to the way that quarrels often end: the issue remains unresolved, but people decide to agree for the moment. Perhaps this is also typical for behavior in other areas of society?

The two central elements in the type of exercises that I use have to do with (1) locating something *interesting*; and (2) using this to get somewhere else, with the help of *free associations*. Both of these elements need some explication. What is interesting

or fascinating is what catches your attention; and this means that it is *you* who decide what is interesting (e.g., Davis 1971). The decision is intuitive, which also means that it goes quicker than you can think and draws on something else than formal reasoning.

That X is seen as interesting—that it awakens someone’s interest—also means that the person will want to go further and penetrate things until his or her interest or curiosity is satisfied. According to *The Oxford English Dictionary*, “being in interesting circumstances” means to be pregnant; and the whole process of theorizing can perhaps be described in Socratic terms as going from getting pregnant to giving birth.

The idea of using free association in theorizing was, as we know, mentioned by Peirce when he spoke of observation (“associational potency”). In sociology it has been advocated primarily by Everett C. Hughes, who writes as follows in *The Sociological Eye*:

In my work I have relied a great deal on free association, sometimes on a freedom of association that could seem outrageous to the defenders of some established interest or cherished sentiment. Wright Mills must be given credit for the phrase *the sociological imagination*. The essence of the social imagination is free association, guided but not hampered by a frame of reference internalized not quite into the unconscious. It must work even in one’s dreams but be where it can be called up at will. When people say of my work, as they often do, that it shows insight, I cannot think what they could mean other than whatever quality may have been produced by intensity of observation and the turning of the wheels to find a new combination of the old concepts, or even a new concept. I think I even do my reading by free association: “Didn’t Simmel, or Durkheim, Weber, Mead, Marshall, or someone say something on that point?” I do a good deal of my reading by starting with the index” (Hughes 1984, xvi).

While most people associate the expression of free association with Freud, it should be clear from the quote by Hughes that it covers considerably more than verbal associations. The same, it turns out, is perhaps also true for Freud himself. “Free association” is a term used by Freud’s English translators, not only for “*freier Assoziation*” but also for “*freier Einfall*”; and these latter can be described as ideas that just pop up in one’s mind (Macmillan 2001, p. 115). In brief, the category of free associations also covers a bit of what Peirce calls abduction.

What made Freud choose the technique of free association was that it allowed him to get closer to what actually upset his patients. What in contrast made me decide on using this technique in teaching theorizing was simply that it mirrored the way I sometimes thought. When I tried to explain to students how I go about theorizing from a text, I came to realize that I engaged in a way of thinking that was very close to what is called free association.

It can be added that it is also important to point out to the students that to fail in theorizing exercises is very common and an important part of learning how to do it right. One has to fail in order to become confident and conquer once fear of being stupid; and this means that one has to learn to be comfortable with failing or, to phrase it differently, learn to fail in the right way. There exist many different types of failure; and to fail in theorizing is much more useful when it is reflexive and done in private (for attempts to theorize failure, see, e.g., Gladwell 2009; Schulz 2010).

To leave the students plenty of room to fail, and to be able to do so in private, I tell them to write up their theorizing exercises, and that I will not read them. This makes things easier for the teacher—but also, and more to the point, it both softens the fall and to some extent removes the teacher from inside the mind of the student. Writing exclusively for oneself, and not for the teacher, makes the effort to theorize as natural and personal as possible. To find your own theoretical voice is closely linked to the way that you write; and one should in my view also refrain from telling the students how to write up their exercises. Creative theorizing is a personal enterprise and everybody needs to find his or her own way of doing it.

As the exercises proceed, the students will, one hopes, begin to think about what is interesting, not only from their own perspective but also from other perspectives. What is interesting from the perspective of social science and what is interesting from the viewpoint of oneself may be two different things; and it is important to try to move the two closer together.

What one finds interesting from a social science view also depends on what one knows in social science, which means that learning to theorize needs to be combined with learning theory. Whether one can teach both of these in the very same class or if it should be done in two separate classes, one may discuss. I have done both but prefer at the moment to separate the two.

It is my experience that one cannot have more than something like fifteen students in the class, when doing exercises of the type that I recommend. This way of teaching theorizing also presupposes that the students already know quite a bit of social science, which is true for graduate students but less so for undergraduates. I especially see the teaching of large undergraduate classes as a big challenge; and I have not been able to figure out how this can be done (for a suggestion that involves group exercises, see Rinehart 1999).

Something should also be said about the use of heuristics (e.g., Pólya 1945; Abbott 2004; see also Becker 1998). As already mentioned, heuristics tends to focus on teaching short-cuts and rules for solving problems and not on the general skill of theorizing, as in this article. Heuristic devices have in my view a tendency to become mechanical; and one can easily end up running through a number of tricks in the hope of stumbling on something interesting. This is usually not very helpful; and it reminds me of going through name after name, in a desperate effort to remember somebody's name. It is much easier, in my view, to theorize directly from the facts, and to use such ways of thinking as free association, using analogies, and so on.

Having said this, I have a few heuristic tricks that I myself have used many times and that I tell the students about. One of these comes from Everett C. Hughes and is as useful as it is common. In social science, Hughes said, you may want to look for "*likeness inside the shell of variety*" (Hughes 1984, p. 503; emphasis added). This means that phenomena that may seem different nonetheless are similar in some important analytical or structural respect. One can also turn Hughes's advice around, and look for "*variety inside the shell of likeness.*"

My other heuristic tricks are the following: pluralize; transform nouns into verbs; and transform nouns into social relationships. Instead of analyzing a certain phenomenon (say capitalism), one pluralizes (and gets, say, different kinds of capitalism). One can also transform a noun into a verb in order to make it more dynamic, along the lines of

Max Weber. The state, for example, becomes the coming together as a state or, more precisely, the probability of this happening. And one can transform the phenomenon from an entity into a social relationship. According to Marx, capital is not an object but a social relationship; and according to Simmel, the stranger is not a person who is different from other people but someone who is in a very special relationship to them.

Concluding remarks

Above all seek to develop and to use the sociological imagination... 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 a craft. Stand for the primacy of the individual scholar.

- C. Wright Mill, *The Sociological Imagination* (1959), 224

Work on philosophy—like work in architecture in many respects—is really more work on oneself. On one's own conception. On how one sees things. (And what one expects of them).

- Wittgenstein, *Culture and Value*, 24e

The main message of this article is that given the current lopsided development in sociology and the other social sciences, with methods being highly developed and theory highly underdeveloped, we may want to focus our energy on theorizing rather than on theory. The way to do this, I also suggest, is to turn to the context of discovery—and then proceed to the context of justification. What needs to be devised, to be more precise, are ways for how to navigate in the context of discovery, not rush to the testing of hypotheses. Theorizing is a form of practical knowledge and not to be equated with social science studies of discoveries and creativity. It is a kind of knowledge that is aimed at helping the individual to act competently and creatively in theory; studies of creativity, on the other hand, tend to explain why some individuals and social structures tend to be more creative than others.

To work exclusively with theories, rather than to think in terms of theorizing, often translates into an awkward struggle of trying to get theory and facts together. When you theorize, in contrast, these two come together in a natural way. You begin with the facts, and an organic link between theory and facts is established from the very beginning.

If carried through with consistency, the enterprise of theorizing might help to usher in a new period of interesting and creative theory in social science. One reason for hoping this is that there is no reason to believe that only a small number of gifted scholars can produce theory. Everyone who can think, can ultimately also theorize; and the project of theorizing is therefore inherently democratic (Kant [1784] 1970). The goal of developing the project of theorizing would be to create a culture of theorizing in the social sciences.

In exploring theorizing, I also argue, social scientists can learn much from Peirce whose ideas on this topic are very helpful and suggestive. Theorizing also necessitates a personal exploration or a personalist exploration, to invent a word

that is too ugly to kidnap, as Peirce happily noted about his term “pragmatism.”¹⁹ To theorize well you need to open yourself up, to observe yourself, and to listen carefully to yourself. One’s imagination, intuition, and capacity for abduction all need to be observed, reflected upon, and developed by each individual, in his or her own unique and personal way.

We may also want to consult some other scholars than those we rely on when theory is discussed. Besides Peirce, I especially recommend Bachelard, Kierkegaard, Heidegger, and Wittgenstein as very suggestive and helpful when it comes to theorizing. All of these have also proposed ideas that so far have not been incorporated into mainstream social science. In sociology and social science, I have found Everett C. Hughes, Jim March, C. Wright Mills, and Karl Weick to be very instructive when it comes to theorizing. There also exist a number of social scientists who have developed a theorizing style, as exemplified by Thomas Schelling and Albert O. Hirschman.

To this can be added that it is possible to do research from a theorizing perspective on the major social scientists and see what can be learned from approaching them from this angle. This would constitute a kind of reverse engineering, applied to theory. How did the classics come up with the ideas in *The Prince*, *The General Theory of Employment, Interest and Money*, and so on?

To make the project of theorizing into a coherent whole, much more is needed than what can be found in this article. Imagination, intuition, and improvisation are three important topics that all deserve a long and thorough discussion. One would also want to get a better understanding of how one goes from the context of discovery (the prestudy) to the context of justification (the major study). The notion that one can just introduce the former and then hook it up to the latter, hoping that the two will neatly fit together, may well be illusory. Changes in the one presumably entail changes in the other; and so far all attention has been directed towards the main study, something that has led to distortions. There may also exist a gray zone between the the prestudy and the major study that needs to be better understood.

One should also be aware that before a theory has been properly tested, the data gathered at the stage of observation in the prestudy may lead one wrong. While it is possible to speak positively of “theoretical sampling” and “the testing of ideas” at the stage of discovery, it is also clear that there exists a good chance of making errors at this stage (e.g., Glaser and Strauss 1967; Coslor 2011). Some of these errors have been discussed by behavioral scientists, such as anchoring error, availability error, and attribution error (e.g., Tversky and Kahneman 1982; Groopman 2007; see also Peirce 1992b, pp. 193–196). There may be other errors as well, which are specific to the process of theorizing.

Throughout this article, I often refer to social science, while most of my examples come from sociology. This reflects the fact that I am a sociologist, but it is clear that good theorizing is something that all of the social sciences are in need of. Economics, political science, psychology, anthropology, and history also have their own ways of theorizing. This means that all of them could benefit from a dialogue

¹⁹ Peirce 1998, p. 335. The term “personalism” was popularized by Emanuel Mounier during the interwar period in France and became part of the Catholic Worker movement. For the manifesto of the personalist movement, in which the dignity and responsibility of the individual person is at the center, see, e.g., Mounier’s *Be Not Afraid: Studies in Personalist Sociology* (Mounier 1954).

across disciplinary boundaries on how to theorize—how to construct concepts, use analogies, build models, and so on. Social scientists would also do well to follow what philosophers have said on these topics; it is their ideas that still form the foundation for most of what is happening in this area.

Another topic that needs to be discussed has to do with the way that theorizing is presented. So far in social science, theory is typically presented in a way that hides the way in which it has come into being. But the value of proceeding in this way may well be limited in the long run, since we not only want a good analysis but also to learn how to make a good analysis. The good theorizer wants a verdict of the type that John Stuart Mill gave to Tocqueville's *Democracy in America*: “the value of his work is less in the conclusions, than in the mode of arriving at them” (Mill 1977, p. 168).

What we come back to, time and time again, is that theorizing means something different from theory, both in terms of content and style. Theorizing is never finished once and for all. It is truly impermanent, imperfect, and incomplete. It is also part of what Peirce calls fallibilism or “the doctrine that our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and indeterminism” (Peirce 1931, p. 171).

Does it not make sense that the notion of fallibilism should also come through in the presentation of a work that draws in a conscious way on theorizing? Currently social scientists have only two options when they want to publish and present their work: the standard article and the standard monograph. Both of these forms are difficult to work with since they are surrounded by fairly rigid norms for how to write and how to present the data and the argument.

New alternatives are needed; and some suggestions for what these may look like already exist. One can, for example, choose to use an emotionally rich style (Abbott). One can experiment with inserts of various types in the text (e.g., Bourdieu in *Actes de la recherche*). One can also use a more fragmented way of writing (e.g., Wittgenstein) or in some other way try to express the playfulness and free associations that the mind goes through when you theorize (e.g., Simmel, Bachelard).

When theorizers read a piece of theorizing, they do not only want to learn; they also want to participate in the work. In the arts there is today a tendency that those who perform a piece of music, read a poem, and the like, can do so in a way that allows for them to express their own creativity. This is known as an “open work,” and it stands for an approach that might also suit those in social science who are interested in theorizing (Eco 1989).

And last, the project of theorizing can truly flourish only if theorizing becomes a communal and co-operative enterprise among all kinds of social scientists, linked to each other as well as to people around the world. Peirce liked to point out that scientific inquiry is profoundly communal in nature, and that new ways of theorizing and analyzing will only succeed if they are deeply rooted in a universal community of scholars. Inquiry and community, he said, must come together in a true community of inquiry—or into a *general culture of theorizing*, as one could also put it.

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