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Exploratory research in social science can be defined in different ways, but its core, I believe, consists of an attempt to discover something new and interesting, by working your way through a research topic.<sup>1</sup> Doing this type of research is risky by definition, since it is not possible to know in advance if something novel will come out of the whole thing. And for an answer, you have to wait until you are well into the research process.

Looking at things from this perspective means that all good science is the result of exploratory research. The opposite is unfortunately not the case; all exploratory research, as most of us know from experience, does not result in something innovative. But again, this can only be found out at a point when you are deep into the research.

Exploratory research, as defined here, is the soul of good research. Without the ambition to say something new, research would come to a standstill. Non-exploratory research can by definition only result in repetition of what is already known. And apart from studies that aim at replication, this will not move science forward.

There does, however, exist a problem with defining exploratory research in this way: it becomes very broad and hard to handle. The notion that research should be conducted with the ambition to say something new is imperative, but it only carries you so far. When the term exploratory research is used in this sense, it also has a tendency to become synonymous with all that is regarded as good research – plus everything that has led to this result. This means a very huge literature, and one that already covers a host of different topics.

For this reason, the focus of this chapter will be narrowed down to one particular form of exploratory research, namely *the exploratory study*. It will be argued that there exists a neglected and mostly forgotten tradition in sociology

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to use exploratory research to produce what is known as “exploratory studies,” and that something can be learned from these studies also when it comes to exploratory research in general. In this type of literature, as will be shown, we find something that is very helpful, namely references to a number of concrete studies as well as to different ways of using exploratory studies that can all be inspected and scrutinized, for strengths and weaknesses.

As will be shown next in this chapter, exploratory studies have taken a number of different forms in sociology, depending on their goals and means. The two forms that have been the most common are the following: (1) a topic that has not been researched before, is given a first tentative analysis; and (2) an already existing topic is explored in order to produce new ideas and hypotheses, but without being able to properly verify these.

But exploratory studies, it will also be suggested, can take other forms as well, including *new forms*. You can, for example, make a first exploratory study of a topic yourself, in order to see if you want to devote a full study to it. Related to this, exploratory studies represent useful tools for students, especially when they plan their dissertation. Finally, there is also the case that if someone has a radically new idea that looks promising, it may be useful to test it provisionally, because if the idea were true the consequences would be huge (so-called high-risk ideas).

For the reasons just mentioned, exploratory studies deserve to be part of the general toolkit of the social scientist, something they are currently not. In fact, little is known today about the exploratory study, not only in sociology but also in the other social sciences. I have looked at around thirty textbooks in social science methods and found that none contains anything close to a full discussion and presentation of exploratory studies. A few mention the topic, but that is all (e.g., King, Keohane and Verba 1994; Lewis-Beck, Bryman and Liao 2004; Somekh and Lewin 2005; Gray et al. 2007; Box-Steffensmeier, Brady and Collier 2008; Della Porta and Keating 2008; Walters 2010; Gerring 2012a). The history of the exploratory study is similarly unknown (e.g., Platt 1996).

Just like the early, non-reflective form of a concept is known as a proto-concept, we may call today’s version of the exploratory study a proto-method (Merton 1984:267). This means, among other things, that the exploratory study is currently not as evolved as it could be. It also means that the exploratory study can be considerably improved – and some suggestions for how this can be done will be made as well.

By way of approaching the topic of exploratory studies, the next section of this chapter will look at the history of this type of study. This will be

followed by an argument for a new type of exploratory study that is especially helpful for theorizing empirical material at an early stage, and that has as a purpose to help the researcher to decide whether to conduct a full study or not. A typology of the different types of exploratory studies that are discussed in this chapter will also be introduced, centered around their goals and methods.<sup>2</sup>

## The History of Exploratory Studies

There currently exists no information on how often exploratory studies have been used, nor when they made their first appearance. To my knowledge, there only exists one single work in the social sciences that is exclusively and explicitly devoted to exploratory research, including exploratory studies. This is a slim volume called *Exploratory Research in the Social Sciences* by sociologist Robert Stebbins, which appeared in 2001 in a series by SAGE on qualitative research methods (Stebbins 2001). In its 60 pages the author describes what is meant by exploration, what an explorer is, how to write up the result of exploration and the like.

Stebbins, however, has next to nothing to say about the history of exploratory studies or how common they are. His suggestion that you can trace their origin to *The Discovery of Grounded Theory* (1967) by Barney Glaser and Anselm Strauss does not seem to be correct. The term “exploratory study” can be found in social science writings already in the late 1920s.<sup>3</sup> This goes for economics as well as for psychology, political science and sociology.

It would seem that the very first time that the phrase “exploratory study” appeared in a sociology journal in the United States was in 1929 (Hankins 1929:452). A few years later several sociological monographs had been published that described themselves as exploratory studies (e.g. Angell 1936:271; Blumer 1933; Dollard 1937; Stouffer and Lazarsfeld 1937).

<sup>2</sup> No attempt will be made in this chapter to discuss the method of so-called exploratory data analysis. Developed in the 1970s by mathematician John Wilder Tukey (1977), “exploratory data analysis ... consists of an approach to data analysis that allows the data themselves to reveal their underlying structure and that gives the researcher a ‘feel’ for the data. It relies heavily on graphs and displays to reach these goals” (Pampel 2004:359). For the use of exploratory data analysis, see also Healy and Moody (2014:113–117).

<sup>3</sup> An N-gram similarly shows that the terms “exploratory study” and “exploratory research” started to be used in books in English in the 1920s (N-gram for “English” from September 18, 2016). There exist no entries for “exploratory study” and “exploratory research” in *The Oxford English Dictionary*.

One of these early studies received quite a bit of attention, both from other sociologists and the general public. This was a volume called *Caste and Class in a Southern Town* (1937) by John Dollard. Drawing primarily on a number of life histories, the author analyzed the race relations in a small Southern town in a way that drew praise from such reviewers as W. E. B. Du Bois and Robert E. Park (Du Bois 1937; Park 1937).

Dollard described his work as an exploratory study and said that "the task of an exploratory study is to pick out the crude outline of the object later to be more exactly defined" (Dollard 1937:32). When his study was reissued in 1949, Dollard was careful to point out that an exploratory study is by definition not of very high scientific quality. He also presented a normative argument why it may be useful to conduct an exploratory study. When you analyze an urgent social problem, Dollard said, you cannot always wait till all the information on the topic is available.

I would not have the reader think that I believe this book to be a good example of scientific work in its best and terminal form. I see it rather as an exploratory work of science, of the fumbling and fiddling out of which more authoritative descriptions of reality will emerge. I wish I could be certain that we would have the time for a final scientific description of our society before we shall be called to account for its disastrous imperfections. (Dollard 1937: xiv)

Everett C. Hughes, who by this time had replaced Robert E. Park as the leader of the Chicago School, reviewed the new edition of Dollard's book for *The American Journal of Sociology*. In his view Dollard was wrong in equating good science with good methods; Hughes also criticized Dollard for not discussing the issue of whether the main topic had been properly understood and conceptualized. In the view of Hughes, "primitiveness of method probably does less damage than overrefinement of techniques applied to problems that have not been sharply defined and conceptualized" (Hughes 1949:208).

A few years after Dollard's book appeared, the first journal article in sociology that declared itself to be an exploratory study was published (Hayes 1942). The author, who is forgotten today, suggested that an exploratory study is based on research that is not representative in nature. For a sample to be representative, you need to use statistics. "The study is regarded as preliminary or exploratory because the instrument by which the data were obtained has not been refined and perfected; nor has a statistically reliable sample been obtained" (Hayes 1942:165).

Even if exploratory studies have not attracted much commentary during their existence, they have nonetheless been an important part of US sociology. The methods that have been most popular among sociologists are (in this

Table 2.1 Mentions of methods in top sociology journals (1895–2016)

	Title	Abstract	Text	Text
Survey	100	1,117	6,922	42%
Network	214	505	2,592	16%
Case study	59	137	1,489	9%
Experiment	81	208	2,579	16%
Participant observation	6	25	283	2%
Ethnography	7	27	508	3%
Exploratory study	4	8	276	2%
Any method mentioned				90%

Note: The number of all articles in JSTOR has been established through a search of “the.”

Source: JSTOR October 15, 2016. The three journals are *American Journal of Sociology* (1895–2015), *American Sociological Review* (1936–2013) and *Social Forces* (1925–2012).

Table 2.2 Mentions of methods in all sociology journals (1895–2016)

	Title	Abstract	Text	Text
Survey	1,331	10,068	61,497	35%
Network	984	3,338	27,572	16%
Case study	806	1,761	15,130	9%
Experiment	464	1,545	20,216	12%
Participant observation	18	451	3,375	2%
Ethnography	141	374	6,373	4%
Exploratory study	131	159	2,648	2%
Any method mentioned				80%

Note: The number of all articles in JSTOR has been established through a search of “the.”

Source: JSTOR October 15, 2016.

order): surveys (by a broad margin); networks, experiments and case studies; and ethnography, participant observation and exploratory studies. This goes for the three top journals in US sociology as well as for sociological journals in general (see Tables 2.1 and 2.2). Judging from JSTOR, it would also seem that more exploratory studies have been carried out in sociology than in either political science, psychology or economics. While you can find exploratory studies in the main journals of the professional associations of sociology, psychology and political science, this is not the case with economics.<sup>4</sup>

<sup>4</sup> If you include all of the economics journals in JSTOR, a different picture emerges; economics now looks more like the other social sciences.

By analyzing the exploratory studies that have been published in sociological journals, one can learn quite a bit about the way that this type of study has been seen by sociologists and for what purpose it has been used. What an analysis of this type does not reveal, however, is that several of the best-known studies in US sociology are exploratory studies, and that the authors of works in this genre include such prominent sociologists as Herbert Blumer, James Coleman, Alvin Gouldner, Arlie Hochschild, Marie Jahoda, Paul Lazarsfeld, Seymour Martin Lipset, Robert K. Merton and Samuel Stouffer. As examples of articles and books that are exploratory studies (according to explicit statements by their authors), one can mention such well-known works in sociology as Merton's study of locals and cosmopolitans (1949); *Voting* (1954) by Berelson, Lazarsfeld and McPhee; *Patterns of Industrial Democracy* (1954) by Gouldner; *Union Democracy* (1956) by Lipset, Trow and Coleman, and *The Managed Heart* (1983) and *Strangers in Their Own Land* (2016) by Arlie Hochschild. Some methodological innovations also have their origin in exploratory studies, such as snowball sampling.<sup>5</sup>

Most of the sociologists just mentioned were associated with the Department of Sociology at Columbia University and its Bureau of Applied Social Research (1944–), led by Paul Lazarsfeld. In fact, more than 30 studies that were either exploratory studies or pilot studies were produced under the auspices of the Bureau by C. Wright Mills, Hans Zetterberg, Kingsley Davis and other well-known sociologists (Barton 1984).<sup>6</sup> According to the standard work on the history of survey research in the United States, much of what was produced at the Bureau during the height of its existence can be characterized as “exploratory forays in pursuit of interesting ideas in theory and method, often conceived as work to be tested later by broader inquiry” (Converse 1987:286).

Since Columbia University was the leading department in sociology after World War II for something like 20 years, it would be helpful to know how

<sup>5</sup> According to Herbert Hyman, “The study [by Merton on *Time* readership from 1943] also yielded a methodological by-product, the procedure later named snowball sampling” (Hyman 1991:204; see also Handcock and Gile 2011). Merton had asked the readers of *Time* to name people they considered influential. See also Barton (1979), Converse (1987:286 ff.).

<sup>6</sup> It is common in modern sociology to distinguish between pilot studies and exploratory studies, with the former meaning an early run to test if some survey question or the like works well. Many sociologists in the recent past, however, have used the terms pilot study and exploratory study interchangeably, and roughly in the sense of an early but incomplete study of a certain phenomenon (e.g., Merton 1949:181, 194; Lipset and Bendix 1952:503; Hughes 1960:viii). It can be added that just as there exists next to no knowledge today of the use of exploratory studies in sociology, this is also the case with pilot studies (e.g., Platt 2011; see, e.g., van Teijlingen and Hundley 2001).

its members viewed the exploratory study; what they saw as its advantages and disadvantages, when it should be used and so on. This is also what will be discussed in the next section.

### What, Exactly, is an Exploratory Study?

This report is wholly of an exploratory nature. Its purpose is to develop ideas and techniques. Any resemblance between the figures in this report and in a real survey will be pure coincidence.

– Robert K. Merton, "TIME-Readership and the Influence Structure of Dover, N.J." (1943), p. i

It is an interesting fact that even if several of the key members of the Department of Sociology at Columbia University used exploratory studies, these were not mentioned in the important reader in research methods that Paul Lazarsfeld and Morris Rosenberg published in 1955, *The Language of Social Research*. Whatever the reason for this may have been, it helps to explain the semi-obscurity that surrounds the method of exploratory studies.

Another fact that has operated in the same direction is that the sociologists at Columbia University who used exploratory studies often mentioned this fact somewhere deep in the text. In such well-known studies as *Union Democracy* and *Patterns of Industrial Bureaucracy*, for example, the reader is not told that these works constitute exploratory studies until the very end of the book, in an appendix (Lipset, Trow and Coleman 1956:430; Gouldner 1954:247; see also Angell 1936:271; Hochschild 2016:247).<sup>7</sup> It is true that Merton begins his article on locals and cosmopolitans with the statement that "this is an exploratory study," but as far as I can tell this is an exception (Merton 1949:180).

It is possible to argue that using the expression "exploratory study" is of less importance than using the approach that comes with the term.<sup>8</sup> and this brings us to the question of trying to describe what characterizes an

<sup>7</sup> For more recent examples of the tendency to "hide" the fact that a study is of an exploratory nature somewhere in the text, see, e.g., Skocpol (1980:156). In a discussion of neo-Marxist theories of the state, Skocpol here argues that an "exploratory essay" can be useful. The reason she gives is that this type of study helps you to replace an empty discussion of theory with an exploration of the interface between theories and a concrete historical trajectory (in this case the New Deal).

<sup>8</sup> It is, for example, possible to see the studies by Erving Goffman as a kind of exploratory study. In *The Presentation of Self in Everyday Life* Goffman says, for example, that his analysis in this study constitutes "a guide worth testing in case-studies" (Goffman 1959:xii).

exploratory study. The way that this will be done is not by citing some definition or analyzing sample of articles from JSTOR, but by taking a good look at some of the studies that were produced at Columbia University. There are several advantages to this way of proceeding. First, while the exploratory study was not invented by the sociologists at Columbia University, it was used here by a number of researchers who were all in contact with one another. In this way, the exploratory study acquired a certain collective or general form. Also, given the high caliber of the work by people such as Merton, Lazarsfeld, Gouldner and so on, we would expect to find solid arguments in their studies about the advantages and disadvantages of using exploratory studies.

What, then, does an exploratory study look like, if we use as our model the kind of studies that were produced at Columbia University? According to a couple of studies, it was the empirical situation that made it necessary to use an exploratory approach. In their joint study from 1937, Lazarsfeld and Stouffer state that it was difficult for them to get good data on the effect of the Depression on the family (Lazarsfeld and Stouffer 1937). The reason for this was that by this time the most dramatic downturn in the business cycle was over. In this situation, they noted, an exploratory study would be useful.

In his study of nationalism in Nigeria, James Coleman advanced a similar argument as to why his study was exploratory in nature (Coleman 1958). The level of passions involved, he said, made it hard to get solid facts. The existing facts were often fragmentary and contradictory in nature (Coleman 1958:vi).

A general lack of knowledge about some topic that was important to study constituted another reason for using an exploratory study. There was a need to know more about some topic; and since very little information existed, the study had to be exploratory in nature. Merton, for example, used this argument in his study of medical students as well as in a study of the role of age among scientists (Merton 1957, 1973a).

There also existed another reason for carrying out an exploratory study, according to Merton et al. While some social phenomenon may already have been studied quite a bit, there is always a need for new and interesting hypotheses. Also in this case the researcher was justified in moving ahead with less-than-stellar facts. But even if some new hypotheses were produced they could not be verified. Or, in Merton's succinct formulation, this type of exploratory study was designed "to raise questions rather than to answer them" (Merton 1973a:507).

The language in hypothesis-generating exploratory studies typically contains a number of qualified formulations, which signal to the reader that



the hypotheses are tentative in nature. Something "may" be true or "appear" to be the case; "there is some evidence that" something is true and so on (Merton 1949:193, 199, 206; see also, e.g., Merton 1973a:544, 556). According to one study, "words like 'few' or 'many' in this article refer, of course, only to frequencies within the interview material and must be understood within the limitations of our unrepresentative sample" (Jahoda and Cook 1952:301, n.6).

One might think that the hypothesis-generating exploratory study would lose in value once its creative hypotheses had been proved or disproved by other studies. But this is not necessarily what has happened, and studies like *Union Democracy* and *Patterns of Industrial Democracy* are still read and cited today. The reason for this is that they address substantive issues in powerful and inspiring ways. In the case of the study by Lipset, Trow and Coleman, one can find many interesting ideas about democracy and the social structure of trade unions; in the case of Gouldner's study, one finds several creative insights about the use of formal versus informal rules in a factory.

If we now switch from the topic of what to study and why to the question of how to carry out an exploratory study, it is clear that people had different opinions. At one end of the spectrum, there are Stouffer and Lazarsfeld, who in *Research Memorandum on the Family in the Depression* (1937) laid down fairly rigorous rules for how to proceed when you gather data in an exploratory study. At the other end, there are those who advocated a more flexible approach, such as Merton (1949, 1957) and Gouldner (1954).

In primarily focusing on "the methodological difficulties" that come with exploratory studies, Stouffer and Lazarsfeld state that this type of study should have three general goals (Stouffer and Lazarsfeld 1937:27). These are: to *nullify*, to *verify* and to *clarify*. For this to be possible, the hypotheses must also be properly operationalized.

The plan has been [in this study] to state a hypothesis in rather general terms, discuss its theoretical implications, and then to restate it in operational facts so that facts to be collected can either verify it, nullify it, or at the least, clarify it. (Lazarsfeld and Stouffer 1937:3)

Stouffer and Lazarsfeld did not approve of the tendency of some sociologists to use "broad concepts" and argued that these should be eliminated (Lazarsfeld and Stouffer 1937:3). When they spoke of verification, they meant using statistical tools. And when they referred to the need for clarification, they were especially thinking of case studies.

It is clear that statistics constituted the only way to truly verify something for Stouffer and Lazarsfeld. Still, they were careful to point out that statistics has its limits. They ended their study with the following statement.

Some of us are extremely interested in helping push research more in the direction of verification. But that cause will not be served by an insistence on an exclusive technique which too often may yield trivial results where valid, and pretentious nonsense where invalid. (Stouffer and Lazarsfeld 1937:201)

The main target of Stouffer and Lazarsfeld, however, was not so much the lack of statistics in exploratory studies as the ways in which case studies were used. They noted that data of very poor quality was sometimes used in this type of study, especially in community studies. It was imperative, in their view, to always try to use high-quality data. The situation may be such that case studies are needed, but this is no reason for accepting low-quality data.

It is true that many exploratory studies made use of case studies (or a single case study), and also that authors sometimes failed to live up to the expectations of Stouffer and Lazarsfeld. What is not so obvious in hindsight, however, is why Stouffer and Lazarsfeld only discussed statistics and case studies. Maybe this was due to the fact that they wrote their rules for how to conduct exploratory studies well before the wave of exploratory studies at Columbia University had begun.

However the circumstances, besides case studies another method that was often used in exploratory studies was the interview. As a distinct method, the interview had its breakthrough among sociologists in the late 1930s, and it soon existed in many different forms (Platt 2002). Open-ended interviews or "exploratory interviews," as they were sometimes also called, were quite popular (e.g., Jahoda and Cook 1952:296–297; Lipset, Trow and Coleman 1956:vi–vii; Zuckerman 1972:169). The focused interview, another novelty at the time, was also seen as suitable for exploratory studies (e.g., Merton and Kendall 1946; Merton, Fiske and Kendall 1956:12–15; Merton 1987a:557–558).

But interviews were not the only other method that was used, besides case studies and statistics. Merton, for example, did not only use surveys, case studies and (focused) interviews in his exploratory studies, but also sociometric procedures and so-called sociological diaries (e.g., Merton, Reader and Kendall 1957:42–53). According to Merton, it was important to use several different methods in exploratory studies.

One can find a detailed discussion of what methods to use in exploratory studies in one of the most popular methods textbooks in sociology of the

time – *Research Methods in Social Science* (1951, 1957) by Marie Jahoda and others. In order to carry out a study of this type, the reader is told, you may for example use the method of “the experience survey” (people with much experience of what is to be studied are interviewed) or the method of “‘insight-stimulating’ examples” (the focus is on selected and especially interesting instances of what you want to study; see Jahoda, Deutsch and Cook 1951, 1:32–47; Sellitz, Jahoda, Deutsch and Cook 1959:51–65). Marie Jahoda and one of her co-authors of this textbook also conducted an exploratory study of security clearance and related topics, in which such topics as jokes and “the social atmosphere” were probed for ideas and leads (Jahoda and Cook 1952:301, 312).

If Stouffer and Lazarsfeld could be found at one end of the spectrum, when it comes to rigor in handling methods in exploratory studies, Alvin Gouldner was at the other end. In his view, one of the great advantages of the exploratory study was precisely that it allowed you to ignore the demands for verification, and instead focus on developing new and interesting hypotheses.

In one of his exploratory studies, Gouldner and his co-author noted that “we have deliberately sought to devise and place ourselves within a ‘context of discovery’ rather than a ‘context of proof’” (Gouldner and Peterson 1962:63). The reason for this stance, they said, was that existing statistical methods were not suitable for discovering and developing new ideas.

All of us are aware that social scientists today often face the choice of using elegant methods on trivial problems or, putting down fastidious inclinations, of confronting basic problems with available methods, even if they have to trim their statistical sail to do so. We are under no illusion [that the main problem discussed in this study] has been definitely solved. We have not found the Northwest Passage. Yet the effort reported on here may have given others a clearer glimpse of where and how to look for it. (Gouldner and Petersen 1962:65–66)

Gouldner writes similarly in *Patterns of Industrial Bureaucracy* that,

the objective of this study, then, is to identify some of the variables relating to bureaucratization, hypothetically accounting for its growth or contraction. No effort has been made to specify metrically or quantify these variables or their interrelations. Measurement, it would seem, first requires some degree of clarity about what is to be measured. (Gouldner 1954:17).

In summing up what has been said so far in this chapter on what constitutes an exploratory study, we can tentatively say the following. An exploratory

study can essentially be carried out for two different purposes. The first is to increase the knowledge of a topic that is little known but needs to be better known. The second is to generate new and interesting hypotheses about a topic that is already known.

There also exists some variation when it comes to the means of how to carry out an exploratory study, as opposed to its goals. According to some sociologists, you must operationalize your concepts and use the facts to verify, nullify, clarify. You should use statistical evidence whenever possible; when this is not possible, you can use case studies but in a very careful way. Other sociologists, in contrast, were of the opinion that you can also use open-ended interviews, single case studies and many other methods, as long as these can help you to come up with new ideas and hypothesis.

It should be emphasized that studies with the purpose of generating new ideas were often very thorough, even if the data was not of the type that allowed for verification. When Merton, for example, carried out the exploratory study that resulted in the distinction between locals and cosmopolitans, he interviewed 116 people. *Patterns of Industrial Bureaucracy* by Gouldner was based on 174 interviews as well as a huge number of observations and documents.

It was not acceptable, in other words, to use just about any way to produce interesting results. A sociologist who wanted to carry out an exploratory study, in order to come up with some new hypotheses, should be able to justify why she used a certain method; she also had to gather quite a bit of material. A certain tension resulted from these two demands. On the one hand, the point of the exploratory research was to come up with new and exciting hypotheses. On the other hand, the only way you were allowed to do this was by following the rules of how to use a certain method, be it case studies, exploratory interviews and so on.

This tension was clearly present in the view of the single case study; it is still not clear what differentiates the (single) exploratory case study, on the one hand, from the explanatory or descriptive case study, on the other.<sup>9</sup> It was not this issue, however, that triggered the debate in the mid-1950s that led to the

<sup>9</sup> "The exploratory case study investigates distinct phenomena characterized by a lack of detailed preliminary research, especially formulated hypotheses that can be tested, and/or by a specific research environment that limits the choice of methodology" (Streb 2010). *Medical Innovation* by Coleman, Katz and Menzel fits this description. It was preceded by a pilot study but characterized as a non-representative "case study" (Coleman, Katz and Menzel 1966:17, 191). According to Streb, "the main reason for the controversy caused by exploratory case study is its intuitive approach, which is also its biggest advantage when phenomena are studied that are as yet unrecognized."

decline of exploratory studies at Columbia University. This was instead the use of significance tests (e.g., Selvin 1957:519–520).

Lazarsfeld and others at the Bureau of Applied Social Research took the position that you do not need to use significance tests in exploratory studies (e.g., Katz 1955; Kendall 1957:301 ff; Converse 1987:285–286). For a good example of the type of arguments that were advanced, the reader is referred to the methodological appendix that Coleman wrote for *Union Democracy*, in which he contrasts “exploratory studies” to “confirmatory studies” (Lipset, Trow and Coleman 1956:419–438; cf. Selvin 1957:519 n.3). This appendix is thoughtful and well worth reading today. Coleman notes, for example, that when you are interested in getting to understand the way that a social system works, it may be enough to study one case intensely, in contrast to when you want to describe and generalize from a population. “Statistical tests of hypotheses,” he wrote, “seem to be of quite limited aid in building theoretical social science” (Lipset, Trow and Coleman 1956:432).

There also existed another argument why you could dispense with significance tests. According to Patricia Kendall, also associated with the Bureau of Applied Social Research, “at [an] early stage of thinking about [some problem] it would seem desirable to assemble a wide array of evidence, even if some of it is not conclusive” (Kendall 1957:302).

But Coleman and the other Columbia sociologists were sharply criticized for their views, and they can be said to have lost the debate, in the sense that their arguments for ignoring tests of significance were not heard after this time. Jim Davis, also a rigorous methodologist, argued that he was well aware that not using tests of significance was “the trademark” of people working at the Bureau of Applied Social Research (Davis 1958:445). In the view of Davis, however, this view was “dangerous”; “the net result is ‘art’, not ‘science’” (Davis 1958:446). To what extent the disappearance of exploratory studies among the avant-garde of US sociology from around 1960 and onwards was caused by critique of this type is not clear. It would nonetheless seem that arguments of Davis’ type helped to create the impression that exploratory studies are “unscientific” and therefore should be avoided.

While the discussion of significance tests among quantitatively oriented sociologists involved a number of sociologists and eventually resulted in a book (Morrison and Henkel 1970), the discussion of exploratory studies among qualitative sociologists was not very vigorous. They were basically uninterested in the method of the exploratory study, which they felt was a way of ignoring field work in sociology. Field work, in their view, was only seen

as legitimate by quantitative sociologists if it was used in exploratory studies, while statistics had to be used in the main and definitive study.

As an example of this type of one can mention a critique from 1960 made by Everett C. Hughes.

Some place is given to less formal field observation [in survey research], but it is called "pilot study" or "exploratory study", and is considered preparatory to the main business of getting a questionnaire on the road. Its aim is to learn how to standardize the questions one wants to ask, not generally to learn what questions to ask. Great ingenuity is sometimes shown in such exploration and pretesting, but it is usually done with a certain impatience, since it delays the real work of 'administering' the questionnaire. Once the questionnaire is settled upon, any doubts about the questions must be explained away, since it is too expensive and disturbing to change anything at this point. (Hughes 1960:viii)

Herbert Blumer, another leading figure in qualitative sociology, was similarly critical of exploratory studies of the Columbia type (see also Glaser and Strauss 1967:259-262). Like Hughes, he felt that they were part of a trend to ignore fieldwork in sociology and replace it with statistics. Blumer also pointed out that it was impossible to get money for an exploratory study, since you would invariably be asked when you applied what your hypotheses were, what data you intended to use, and so on - all questions that could only be answered *after* the exploratory study (Blumer 1969:37).

In Blumer's view this led to a situation in which sociologists who used survey research and other statistically based methods ended up doing research without having much knowledge of what they were studying.

The scholar who lacks firsthand familiarity [with his topic] is highly unlikely to recognize that he is missing something. Not being aware of the knowledge that would come from firsthand acquaintance, he does not know that he is missing that knowledge. Since the sanctioned scheme of scientific inquiry is taken for granted as the correct means of treatment and analysis, he feels no need to be concerned with firsthand familiarity with that sphere of life. In this way, the established protocol of scientific inquiry becomes the unwitting substitute for a direct examination of the social world. (Blumer 1969:37-38)

While Blumer did not advocate the use of the Columbia version of exploratory studies, he did suggest that sociologists should engage in what he called "exploration" as part of their research. When you carry out a study, he said,

described this part of the study as being broad and flexible, something that was very important at the outset of the research.

The phase of exploration should be followed by what Blumer called “inspection,” which can be described as the analytical part of the inquiry. You now try to transform the result of the exploratory phase into something that is more general and conceptual in nature. The end result is a form of theory, which is firmly based on empirical material.

Blumer played a central role during the last decades of his life at the Department of Sociology at Berkeley; one of his students in exploratory studies was Arlie Hochschild, who recalls:

I learned “exploratory analysis” from Blumer whose course on social interaction I audited but didn’t take. Interview “around” a subject he told us, in order to locate it. Blumer was carrying to Berkeley the “Chicago” tradition of ethnography. (Hochschild 2017)

Hochschild’s first exploratory study appeared in the late 1960s, and today she is the best-known proponent of this type of work in contemporary sociology (Hochschild 1969). According to Hochschild, all of her most important studies are exploratory studies (Hochschild 2016:247), from *The Managed Heart* (1983) over *The Second Shift* (1989) and *Time-Bound* (1997) to *Strangers in Their Own Land* (2016).

In *Strangers in Their Own Land*, Hochschild describes her method in the following way.

This book is based on a kind of research sociologists describe as “exploratory” and “hypothesis generating.” The goal of it is not to see how common or rare something is, or where one does and doesn’t find it, or to study how the something comes and goes through time – although I draw on the research of others who address such questions. My goal has been to discover what that something actually is. (Hochschild 2016:247)

Hochschild’s approach to exploratory studies in *Strangers in Their Own Land* differs on one interesting point from the way that exploratory studies were conducted at Columbia University. People like Coleman, Gouldner et al. were of the opinion that you can only generate hypotheses with the help of exploratory studies, but not test them, and that this should be clearly stated. The test would presumably be made in another study. In *Strangers in their Own Land* Hochschild both develops some ideas and tests these statistically (with the help of Rebecca Elliott and Mike Hout).

Whether this strategy of both suggesting and testing ideas in the very same study will be followed by other social scientists who are interested in exploratory studies remains to be seen. It does, however, represent a new and interesting way to carry out an exploratory study, and is from this perspective an innovation of sorts in the history of exploratory study. It will hopefully also help to obliterate the false impression that exploratory studies are qualitative in nature, while real studies are based on statistics.

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### **The Informal Exploratory Study (Pre-Study)**

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The types of exploratory study that flourished after World War II still exist, even if they do not seem to be regarded as a very attractive option by modern social scientists. As already mentioned, current textbooks on methods do not discuss exploratory studies; students are not being taught how to carry them out. Still – and this is the theme of this section of the chapter – a case can be made for also using exploratory studies today.

Since the modern world is in a state of constant change, it happens quite often that a new topic needs to be understood and tentatively explored by social scientists. Among recent examples one can mention globalization, climate change and the intersection of biology and sociology. It is also clear that topics that are already well established are often in need of new and creative hypotheses. Without these, social science research will become lifeless and dull. Exploratory studies represent one antidote to this.

It should also be noted that the situation when it comes to methods is somewhat different today than what it was in the years after World War II. Many new methods have been introduced into sociology after the demise of the Columbia School, and old methods have been improved. The attitude toward what methods should be used has also changed in sociology. Mixed methods are, for example, becoming popular today, and ethnographic studies are increasingly being accepted. All of these changes make it imperative to raise the question of whether you do not also need to update the exploratory study.

With this purpose in mind, I would like to make an argument for a new type of exploratory study. Its main purpose is to unleash the full potential of exploratory studies to produce new ideas and hypotheses. Just as free will exists, so does free thinking, and what I shall call the informal exploratory study attempts to exploit precisely this feature to its fullest.

An important characteristic of this type of exploratory study is that it is not intended to be published. This may seem like a trivial statement. It is,



however, precisely this feature that allows it to be more creative than the old type of exploratory study. The reason for this is that it allows the researcher to use any kind of method, as long as it has a positive result in terms of ideas.

The old type of exploratory study lost much of its appeal, as we have seen, by being attacked from two sides. On the one hand, statistically minded sociologists argued that significance tests must always be used or the result of the study must be discounted (e.g., Morrison and Henkel 1970). On the other hand, qualitative sociologists saw little use for exploratory studies (e.g., Everett C. Hughes, Herbert Blumer). They argued that more field work and less statistics were needed, and that exploratory studies filled no useful role.

Both of these critiques, however, lose much of their force if the exploratory study is not published. The reason for this is that both the demand to be more systematic and scientific, on the one hand, and that field work should hold a privileged position vis-à-vis statistics, on the other, now become irrelevant. What matters is not the method and how well it is used, but to come up with new ideas, however this is done.

But if an exploratory study is not going to be published, why should you conduct it in the first place? and, if you decide to do so, when should this be done? The purpose of this type of study, to repeat, is to maximize the chances of coming up with something new. And the time to use this type of study is *before* a full study has been decided on. This is the reason why it has also been called a *prestudy* (Swedberg 2014).

An informal exploratory study has primarily two purposes. One of these is to make the researcher know something about her topic before the design for the main study has been drawn up. The second is for the researcher to come up with new ideas. This can be accomplished in several ways. If a standard method is used, for example, a small sample is enough since the point is to get some knowledge and come up with new ideas, not to amass evidence. More importantly, any kind of "method" that may throw light on the topic can be used – be it in the form of guesses, dreams, sleeping on the matter, poetry or whatever else will trigger some new idea or insight about the topic.

By proceeding in this way, the researcher will have a chance to get to know the topic in a non-systematic but novel manner. She will also be in a better position to judge if she is on the trace of something really new and interesting than if she had not carried out the informal exploratory study. If this does seem to be the case, carrying out a full study may lead to some important results. The researcher now has some good reasons to investigate the topic for full force and according to the rules for verification. But if this is *not* the

case – if nothing in the early study points to some novel ideas or insights being possible – it might be a good idea to cancel the project.

When you conduct research there is never a guarantee that the results will be worthwhile. This is the situation that all serious researchers face. To cite Max Weber in “Science as a Vocation”: “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?” (Weber 1946:136). By carrying out an informal exploratory study, however, it is possible to decide at an early stage if it might be worthwhile or not to engage in a full-scale study of some topic.

A few reservations are in place. First, note that while an informal exploratory study may maximize the chances of being creative, it only has the power to suggest ideas, never to prove them. For the latter, the use of solid methods is necessary, and this means that a full study according to the rules must be conducted.

There is also the fact that innovative ideas may develop during the course of a full study, whether it is preceded by an exploratory study or not. This is especially the case if the researcher has worked for a long time on a certain type of problem. The same is true if a study has been very long in gestation, such as *Union Democracy*, which Lipset worked on for several years before he was joined by Martin Trow and James Coleman (Lipset 1967). But again, and as Weber says, you never know when you will get an idea, and working hard is unfortunately no guarantee. “Ideas occur when they please, not when it pleases us” (Weber 1946:136).

Exactly how does the informal type of exploratory study maximize creativity in research? In addressing this question, which is central to the argument that is being made here, it may be helpful to briefly refer to the concept of *abduction* that was introduced by philosopher Charles Sanders Peirce (e.g., Chomsky 2009:35–38; Swedberg 2014:236–246). While this concept is well known in philosophy, it is less commonly used in the social sciences.

By abduction, Peirce means the invention of a scientific explanation. To come up with an explanation means adding something that is new to the factual situation. This cannot be accomplished either through induction or deduction but only through abduction. The abduction addresses an empirical issue but is not based on empirical facts. It is also not worth anything, according to Peirce, before it has been tested against facts, according to current scientific practice.

“Abduction is the process of forming an explanatory hypothesis” (Peirce 1934:171). Note that Peirce uses the word “process” in this well-known quote. Even if it may feel like a “flash” when you have an idea for an explanation

A[bduction] is that process in which the mind goes over all the fact of the case, absorbs them, digests them, sleeps over them, assimilates them, dreams of them, and finally is prompted to deliver them in a form, which, if it adds something to them, does so only because the addition serves to render intelligible what without it, is unintelligible. (Peirce 1906:4–5; 1934:181)

Drawing on Peirce's ideas, I suggest that a social scientist who wants to carry out an exploratory study can use just about anything to come up with an explanation. The main point is to develop a new idea. But how this is done, and if the method is reliable or not, or if result is verifiable or not, is irrelevant. In the passage just cited, Peirce mentions dreaming as one of the methods that can be used. Elsewhere he also says that scientists have much to learn from artists when it comes to making sharp observations (Peirce 1992:182).

By way of elaborating a bit on Peirce's last idea, let us for a moment imagine what may be called art-based exploratory research. Take, for example, the interview technique that has been developed by Svetlana Alexievich, who received the Nobel Prize in literature in 2015 (e.g., Knowles and Cole 2008; Barone and Eisner 2011). According to Alexievich, when you interview a person you should try to avoid the official version of things ("the script"). What is important is instead to help the person to find her own voice ("their own personal story"; e.g., Palattella 2016). By proceeding in this way, you may get a fresh and more accurate empirical account of what has happened.

There exist many other ways to increase the chances of perhaps making a discovery when you investigate something empirically. In trying to nail down the meaning of a phenomenon it may, for example, be useful to try to come up with associations or work with different metaphors and analogies. There also exist some other useful suggestions for how to develop new ideas in the appendix to *The Sociological Imagination* by C. Wright Mills, entitled "On Intellectual Craftmanship" (Mills 1959:195–226).

By proceeding in these and similar ways, what Merton calls serendipity may be triggered (Merton 1968b:158–162; Merton and Barber 2006). While the notion of serendipity is well known, Merton has also developed some other ways that facilitate the discovery of new things. One of these is to look for new problems, rather than for solutions to old ones ("problem-finding"). "It is often more difficult to find and to formulate a problem than to solve it" (Merton 1959:ix).

Another of Merton's suggestions for how to proceed is to specify exactly what you do not know. "Specified ignorance" is defined as "the express recognition of what is not yet known but needs to be known in order to lay the foundation for still more knowledge" (Merton 1987b:1). Furthermore, once you know what you are looking for, you will also want to locate the right type of material to study it. "Strategic research materials" consist of "strategic research sites, objects, or events that exhibit the phenomena to be explained or interpreted to such advantage, and in such accessible form that they enable the fruitful investigation of previously stubborn problems and the discovery of new problems for further inquiry" (Merton 1987b:1-2).

Peirce worked for many decades on his theory of abduction and broadened it well beyond its original meaning (e.g., Fann 1970; Douven 2011). Abduction eventually came to mean more or less anything novel that is part of a scientific theory. "Abduction," as Peirce put it, "must cover all the stages by which theories and concepts are engendered" (Peirce 1934:590).

This expanded notion of abduction also fits the informal exploratory study well. When you want to say something new, you may try to come up with a new explanation. But you can also innovate in many other ways (e.g., Gutzkow, Lamont and Mallard 2004). You can, for example, discover some new type of method or a new type of fact. Description can be of help here, also the ambition to find puzzles.

Peirce was of the opinion that the human mind has been formed through evolution in such a way that human beings have a good chance of figuring out the correct solution to certain scientific problems but not to others. Human beings, as he put it, have a tendency to guess right in certain cases. This capacity, he argued, is similar to the instinct of animals to build nests and to solve some other problems they face. Peirce ended his famous essay "Guessing" (1907) in the following way.

Our faculty of guessing corresponds to a bird's musical and aeronautic powers; that is, it is to us, as those are to them, the loftiest of our merely instinctive powers. I suppose that if one were sure of being able to discriminate between the intimations of this instinct and the self-flatteries of personal desire, one would always trust to the former. For I should not rate high either the wisdom or the courage of a fledgling bird, if, when the proper time had come, the little agnostic should hesitate long to take his leap from the nest on account of doubts about the theory of aerodynamics. (Peirce 1929:282)

Whether the capacity of human beings to invent new theories and ideas is biologically based or socially based is a much debated question. The main

point to be made here, however, is a different one, namely that the way the human mind works is something that the social scientist needs to know more about, in order to be in a position to learn how to theorize better. Most of this type of knowledge, it should also be noted, comes today from cognitive science and not from social science.

Peirce's notion that human beings have some kind of instinct that allows them to think creatively is also interesting for other reasons. Some of these amount to an argument in favor of the informal exploratory study. This instinct may come easier into play, for example, if the social scientist is released from the demand to carry out a study according to the methodological rules. Her mind will then be allowed to wander more freely, while still dealing with facts.

Topics such as intuition, guessing, speculation, having hunches and so on now become important to know more about; this brings us back to cognitive science. Sometimes the results of studies in this field can be translated into practical knowledge and advice for how to do research in social science. It is, for example, clear that the social scientist – like the bird in Peirce's example – needs to develop confidence in his or her capacity to solve certain problems, even when she is not following the rules of existing methodologies. Weber said something similar when he pointed out that we do not need anatomical knowledge in order to know how to walk (Weber 2012:140).

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## Afterthoughts on Exploratory Research

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An exploratory paper like this one has no place for "conclusions", but it does call for a few afterthoughts.

– Robert K. Merton, "Age, Aging, and Age Structure in Science" (1973), p. 559

It is clear that the old type of exploratory study, as used by Merton et al., did produce good results and therefore deserves to be seen as a valuable method in social science. The case is somewhat different with the informal exploratory study. This is a method that has still to prove its value. My own view is that it is promising and worth trying. Taking risks is necessary in science as elsewhere. But before saying anything more on this topic, I first want to make an argument for institutionalizing a minor version of the informal study already today.

This would be a kind of informal exploratory study for graduate students to conduct before they present their proposal for a doctoral dissertation.

Instead of graduate students pinning their hope on the lucky chance that their search for data on some topic will result in something interesting, a first informal exploration of their topic would augment their chances to produce an important dissertation. Exploration of this type, it can be added, could also include the use of many different models, to see if the initial ideas seem robust (Young and Holsteen 2015). By conducting a study of this type, they would also have a better empirical knowledge of their topic when they write their proposals.

It is also possible to use the informal exploratory study in courses in theorizing at the graduate level. I have done this myself for several years in graduate seminars. The basic idea is to teach students how to theorize by letting them work with empirical material in specially designed exercises, and the informal exploratory study allows them to do this. It is important that when the students carry out these exercises they do not need to follow the methods they use according to the rules. The reason for this is that in order to learn how to develop some theoretical ideas in confrontation with empirical data, the students need to focus most of their attention on the theoretical task. By being released from the task of putting together and/or analyzing a good data set according to the rules, the students can instead focus all of their energy on theorizing the material. In my view, this method works relatively well (for an account of how to teach such a course as well as for a course description, see Swedberg 2016).

So far in this chapter five different types of exploratory studies have been discussed: (1) a version of what may be called the standard exploratory study, which has as its goal to make a first inroad into an area that is currently little known; (2) a second version of the standard exploratory study, which has as its goal the development of new hypotheses for a topic that is already known; (3) the informal exploratory study that aims at maximizing the development of new ideas; (4) the informal exploratory study/pilot study for dissertations; and (5) exploratory studies used in student exercises, to learn theorizing.

This, however, does not exhaust the usefulness of the exploratory study, which is very flexible in nature and can take a number of different forms. There also exists, for example, an interesting type of exploratory study that has been developed by state agencies in various countries, including the United States. For a few decades the National Science Foundation, the Department of Defense and some other federal agencies have, for example, funded what they call high-risk exploratory research. The basic idea is to fund research that is potentially very innovative but where the chance of

failure is high. This type of “transformative research” is defined by the NSF as follows.

Transformative research involves ideas, discoveries, or tools that radically change our understanding of an important existing scientific or engineering concept or educational practice or leads to the creation of a new paradigm or field of science, engineering, or education. Such research challenges current understanding or provides pathways to new frontiers. (NSF 2016a).

It was early realized at the NSF that the peer review process was not suitable for this kind of proposal, since it is inherently conservative in nature. Instead it was decided to assign the right to accept or reject this type of proposal to foundation officers (Rothenberg 2013; Wagner and Alexander 2013). An alternative would have been to assign the grants by chance, something that NSF chose not to do but which is the practice elsewhere.<sup>10</sup>

The first major program to fund transformative research at NSF was created in 1990, called Small Grants for Exploratory Research (SGER). In 2007 it was replaced by several different programs, most importantly by one called the Early-concept Grant for Exploratory Research (EAGER). A reward from the EAGER program can be up to a few hundred thousand dollars. It typically lasts for two years, and it does not require external review. According to the current instructions on the web page of NSF:

The EAGER funding mechanism can be used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. This work could be considered especially “high risk-high payoff” in the sense that it involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives. Exploratory proposals may also be submitted directly to an NSF program ... The EAGER mechanism should not be used for projects that are appropriate for submission as “regular” (i.e., non-EAGER) NSF proposals. (NSF 2016b)

To what extent have NSF’s programs for high-risk exploratory research been successful? According to the one evaluation I have been able to locate, NSF’s Small Grants for Exploratory Research (SGER) was very successful during the 16 years of its existence (Wagner and Alexander 2013). Based on a

<sup>10</sup> In New Zealand, so-called Explorer Grants (for health-related research) are allocated at random. To be chosen a proposal will have to fulfill certain conditions, but from that point on it is chance that decides if the proposal will be funded or not (HRC 2016). I thank Lambros Roubanis for telling me about this type of grant.

**Table 2.3** The goals and methods of different types of exploratory studies

<b>1. The standard exploratory study (Type 1)</b>	The goal is to explore a topic that is little known, and to produce a publishable work. A multi-method approach is helpful.
<b>2. The standard exploratory study (Type 2)</b>	The goal is to develop new hypotheses and ideas about a topic, and to produce a publishable work. Standard methods should be used. The sample size should be substantive, even if statistically rigorous procedures are not possible.
<b>3. The informal exploratory study (Prestudy)</b>	The goal is to develop new ideas, and any means whatsoever can be used. The size of the sample can be small to fair.
<b>4. The high risk exploratory study</b>	The goal is to develop highly innovative ideas in cases where the risk of failure is also high. To be proven valuable the innovative idea should be evaluated with the help of standard methods.
<b>5. The pilot study or exploratory study used for a thesis proposal</b>	The goal is to research a topic informally so that the general design for a dissertation will be more likely to result in important findings. Standard methods as well as unconventional methods can be used, and there is no requirement for a representative sample.
<b>6. The exploratory study used in student exercises</b>	The goal is to allow students to theorize empirical problems without getting sidetracked by strict methodological requirements. Any method can be used, standard as well as non-conventional ones, and there is no requirement for a representative sample.

citation analysis, interviews with experts and a survey, it was concluded that more than 10 percent of the projects had resulted in transformative results.

To the earlier types of exploratory studies that have been discussed so far in this chapter, I therefore suggest that we add one more: *the high-risk exploratory study*. For this type of exploratory study to come into being, you need support from some institution that gives grants for social science research. The main idea, to repeat, is to look for very powerful ideas that may turn out to be very fruitful, but that may also lead nowhere. This is clearly going a step beyond the standard exploratory study as well as the informal exploratory study. Still, it seems that it would be a good idea to introduce this type of exploratory study in social science, since it would encourage social scientists to think big and to speculate (e.g., Lave and March 1993).

All in all, in this chapter six different types of exploratory studies have been distinguished. A brief summary of what these look like can be found in Table 2.3, in which an attempt has also been made to distinguish between the goals and methods that are used in each case.



Two final points need to be made before ending this chapter. The first is that as long as the social sciences continue to ignore the possibility of making exploratory studies, they will limit their capacity to produce new ideas and innovative research. The technique and knowledge for how to proceed in carrying out this type of studies is here, ready to be used.

In his chapter to this volume, Evan Lieberman (Chapter 3) makes a related point. He notes that in biomedical science there exists more of an interest in the early stages in the research cycle, and that this is also reflected in what is being published. In political science, in contrast, it is more common to focus squarely on the causal claim, and to disregard the processes of description, initial forms of explorations and the like. This means that the early stages of the research cycle tend to be ignored and devalued.

The second point that needs to be made before ending this chapter is that exploratory research should not be seen exclusively as a method. It is also very close to theory, especially to theorizing. As has been shown, one type of exploratory study has precisely as its purpose the generation of new ideas, another the testing of high-risk ideas and so on.

The ambition to carry out exploratory research, in the sense of trying to say something new through research, and not just repeat what is already known, also needs to be made explicit and discussed in the education of social scientists. Similarly, exploratory studies should be part of what is being taught and discussed in theory courses as well as methods courses in the social sciences.

# The Production of Knowledge

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Enhancing Progress in Social Science

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