

## INTRODUCTION

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# Why Theorize and Can You Learn to Do It?

Why is it important to know how to theorize in social science? And is it a skill you can learn—and perhaps also teach? Some interesting light was cast on these questions in the very strange way in which a crime was solved in the summer of 1879. The victim of the crime, and also the person who solved it, was philosopher and scientist Charles S. Peirce.

The crime took place on a steamship called *Bristol*, which was traveling between Boston and New York. At the time Peirce was thirty-nine years old and had just accepted a position as Lecturer in Logic at Johns Hopkins University. He was also working for the US government on the Coast and Geodetic Survey.

On Friday, June 20, 1879, Peirce boarded the boat in Boston. He would arrive the following day in New York, where he was going to attend a conference. When he woke up in his cabin the next morning he did not feel well. His mind was foggy, so he quickly dressed and took a cab from the harbor to the Brevoort House, a well-known hotel on Fifth Avenue where the conference was held.

After he arrived at the hotel, he discovered that he had forgotten his overcoat on the boat as well as an expensive Tiffany

watch, to which a gold chain was attached. Peirce was especially unhappy at the prospect of losing the watch, since he used it as an instrument; it also belonged to the government.

Peirce rushed back to the boat, went to his cabin, and looked around. But the watch and chain and the coat were nowhere to be found. Peirce thought that one of the stewards must have stolen his belongings, since they were the only persons who had had access to his cabin. With the help of the captain he soon had the stewards lined up for questioning.

What then happened is strange. Instead of questioning the suspects in traditional fashion, Peirce proceeded as follows:

I went from one end of the row to the other, and talked a little to each one, in as *dégagé* a manner as I could, about whatever he could talk about with interest, but would least expect me to bring forward, hoping that I might seem such a fool that I should be able to detect some symptom of his being the thief. (Peirce 1929: 271)

But this did not help, and Peirce had still no idea who the thief was. He decided to try something else:

When I had gone through the row I turned and walked from them, though not away, and said to myself. “Not the least scintilla of light 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. There was no self-criticism. All that was out of place. I went to the

fellow whom I had fixed upon as the thief, and told him to step into the stateroom with me. (Peirce 1929: 271)

When Peirce was alone with the man, he did not try to make him confess. Instead he made an attempt to persuade the man to give back the stolen items. Peirce had a fifty-dollar bill in his pocket, which he offered to the man in return for his watch with the chain and coat.

“Now,” I said, “that bill is yours, if you will earn it. I do not want to find out who stole my watch. . . . You go and bring me the watch, chain and overcoat, and I shall only be too glad to pay you this fifty dollars and get away.” (Peirce 1929: 271)

The man said that he did not know anything about the stolen goods, and Peirce let him go. He now decided he had to try something else and contacted Pinkertons, the famous detective agency. He explained what had happened to the head of the New York branch, a Mr. George Bangs.

Peirce told Bangs that he knew the name of the thief and wanted someone from Pinkertons to follow the thief when he got off the ship. “The man will go to a pawnbroker,” Peirce said, “where he will get fifty dollars for the watch. When he pawns it, arrest him.”

Bangs listened to Peirce and asked how he knew that this particular individual was the thief. Peirce answered, “Why, I have no reason whatever for thinking so; but I am entirely confident that it is so” (Peirce 1929: 273). Peirce added that if he was wrong, the man would not go to a pawnshop; and no harm would have been done by following him.

Bangs was not convinced. He told Peirce that his agency knew much more about thieves and criminals than Peirce did:

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I am sure you have no acquaintance with thieves and are entirely ignorant of the species. Now we do know them. It is our business to be acquainted with them. We know the ways of every kind and every gang, and we know the men themselves—the most of them. Let me suggest this: I will send down our very best man. He shall bear in mind and give full weight to your impression. Only let him not be hampered with positive orders. Let him act upon his own inferences, when he shall have sifted all the indications. (Peirce 1929: 273)

Peirce agreed, and a Pinkertons detective was sent to the boat the very same day, where he questioned all the stewards. The detective soon found out that one of the stewards had a criminal record, and he had the man followed.

The individual Peirce had singled out as the thief turned out to have been the personal valet of the captain for many years. When the theft took place he had also worked on a different deck than where Peirce's cabin was located.

The detective followed the man with the criminal record, but this did not lead anywhere. Peirce asked Bangs what could be done next in this situation. Offer a reward of \$150 to any pawnbroker who can give information about the watch was the answer.

Peirce followed the advice, and already the next day a pawnbroker reported that he had the watch. From the description that the pawnbroker gave of the man who had pawned the watch, Peirce immediately recognized the steward he had singled out as the thief.

Peirce now had his watch, but he still missed the coat and the gold chain that had been attached to the watch. To get back his remaining belongings he decided to go to the apartment of the thief, accompanied by a detective from Pinkertons.

When Peirce and the detective arrived at the place where the thief lived, Peirce asked the detective to enter the apartment and retrieve his gold chain and coat. The detective refused. “‘Oh,’ he said, ‘I could not think of it. I have no warrant, and they would certainly call in the police!’” (Peirce 1929: 275).

Peirce became annoyed and decided to do it himself. He climbed the stairs and knocked on the door of the apartment where the thief lived. A woman opened the door, and behind her was another woman. Peirce told the first woman that her husband had been arrested for the theft of the watch and that he had come to get his coat and his gold chain back. The women started to scream and said that he could not enter the apartment. If he did, they said, they would call the police. Peirce ignored them and stepped into the apartment.

At this point, the story takes another curious turn. Peirce describes what happened once he was inside the apartment in the following way:

I saw no place in that room where the chain was likely to be, and walked through into another room. Little furniture was there beyond a double bed and a wooden trunk on the further side of the bed. I said, “Now my chain is at the bottom of that trunk under the clothes; and I am going to take it. It has a gold binnacle with a compass attached; and you can see that I take that, which I know is there, and nothing else.” I knelt down and fortunately found the trunk unlocked. Having thrown out all the clothes—very good clothes—I came upon quite a stratum of trinkets of evident provenance, among which was my chain. (Peirce 1926: 276)

There was still the coat. When Peirce looked around for it, the woman said that he should feel free to look wherever he wanted.

But the way in which she said this made Peirce suspect that the coat was not in the apartment. He also noticed that the second woman had disappeared.

Peirce left the apartment and thought that the other woman might have been a neighbor. He knocked on the door opposite of the apartment where he had just been. Two young girls opened the door:

I looked over their shoulders and saw a quite respectable looking parlor with a nice piano. But upon the piano was a neat bundle of just the right size and shape to contain my overcoat. I said, "I have called because there is a bundle here belonging to me; oh, yes, I see it, and I will just take it." So I gently pushed beyond them, took the bundle, opened it, and found my overcoat, which I put on. (Peirce 1929: 277)

What has so far been told about the theft of Peirce's belongings, and how he recovered them, might seem like an odd tale, showing how eccentric and willful Peirce was, but also that he had a certain talent as an amateur detective.

Peirce himself, however, interpreted what had happened very differently. He assigned great importance to the story and wrote it up during the spring of 1907 in the form of an article, titled "Guessing."

The episode, he said, was very instructive for scientists and could be seen as "a chapter in the art of inquiry" (Peirce 1929: 282). In a letter to his friend William James, he described what had happened as an instance of the "theory why it is so that people so often guess right" (Sebeok and Umiker-Sebeok 1981: 16).

Guessing, in Peirce's view, plays a crucial role in scientific research. It is precisely through guessing that the most important part of the scientific analysis is produced—namely, the explanation. What explains a phenomenon constitutes the centerpiece

of scientific research, according to Peirce. It is correct that without facts to test the hypothesis or the idea, the guess is of little value. But without the hypothesis or idea, there will be nothing to test and no science at all.

The term that Peirce most often used in his work for the guess of a hypothesis is *abduction*. Human beings, as he saw it, are endowed by nature with a capacity to come up with explanations. They have a “faculty of guessing,” without which science would not be possible in the first place (Peirce 1929: 282).

Science could never have developed as fast as it had in the West, according to Peirce, if people had just come up with ideas at random and tested these. Somehow scientists have succeeded in guessing right many times.

In the article titled “Guessing,” Peirce also gives an account of a series of experiments that he and a student had carried out at Johns Hopkins on the topic of guessing. According to the article that resulted, which today is seen as a minor classic in experimental psychology, people have a capacity to guess right much more often than if only chance was involved (Peirce and Jastrow 1885).

The reason for this, the authors show, is that people pick up cues subconsciously, and then process these in ways in which science does not yet understand. They also established that people are better at guessing correctly under certain circumstances than others.

Is this also a skill that can be learned and taught? Peirce definitely thought so. It is also clear from his behavior in the episode with the theft that he had trained himself to observe and trust his own capacity to guess and come up with correct explanations. In fact, throughout his life, Peirce was deeply concerned with the issue of how to improve the capacity for abduction. He was especially interested in the practical ways in which people can train themselves to become better at coming up with solutions to problems and new ideas. With this in mind he also constructed a number of practical exercises.

This brings us back to this book, which is primarily aimed at those who want to learn the art of theorizing in social science. In fact, the one author who has inspired the main ideas of this book more than anyone else is Peirce, who was very concerned with this issue. It is, for example, his notion of science that underlies what follows—namely, that science is about observing a phenomenon, coming up with an idea or a theory why something happens, and then testing the theory against facts.

Most importantly, and again inspired by Peirce, I see abduction, or coming up with an idea, as the most precious part of the whole research process and the one that it is the most important to somehow get a grip on. It truly constitutes the heart of the theorizing process. Following Peirce, I also argue that an idea or a hypothesis is of little value until it has been carefully tested against data according to the rules of science.

What I have aimed for in writing this book is first to produce a practical guide. The book essentially contains tips on how to proceed for those who want to learn how to theorize in a creative way in social science. It also attempts to show how you can teach theorizing, or at least how you should approach this topic.

This is a tall order, and the book is by design as well as by necessity an experimental book. As a result, it contains more suggestions than prescriptions. Still, the hope is that the book will help to put theorizing—how to do it and how to teach it—on the agenda of today's social science.

The book has two parts, each of which consists of five chapters. The first part deals with the issue of what you do when you theorize in practical terms; the second with how to prepare and train yourself for theorizing.

In chapter 1, the project of creative theorizing in social science is presented. Here as elsewhere I will use the term *creative theorizing*, or an *abductive-oriented* type of theorizing, to distinguish the type of theorizing I advocate from that of others. I also dis-

cuss the need for a decisive break with some of the ways in which theory is currently understood in social science. This is followed by four chapters that describe how to theorize in a practical way.

Chapter 2 argues that creative theorizing in social science has to begin with observation. Chapters 3 through 5 describe how you proceed from the stage of observation to the formulation of a tentative theory. This part of the process I call *building out the theory*, and it can be described as giving body and structure to the theory.

First is the problem of naming the phenomenon you want to study and of developing concepts that can help you to nail it down and analyze it (chapter 3). In the attempt to produce a theory, you may also need to use analogies and metaphors, construct a typology, and more (chapter 4). No theory is complete without an explanation, and there are many different ways of coming up with one (chapter 5).

The second part of this book is devoted to the ways in which you prepare yourself for theorizing, and also how you teach students how to theorize. Heuristics are helpful in this and so are various practical exercises (chapters 6 and 7). It is imperative to know some theory to be good at theorizing, and how to accomplish this in a practical way is discussed in chapter 8.

There is also the question of the role of imagination and the arts in helping social scientists to theorize well (chapter 9). The general approach to theorizing in this book is summarized in the last chapter, which also contains a discussion of what I see as the inherently democratic nature of theorizing (chapter 10).

The book ends as it starts, with Peirce. I have included an appendix titled “How to Theorize according to Charles S. Peirce.” The reason for this is that the work of Peirce is not as well known in social science as it perhaps deserves to be. This is especially true for the practical side of his work on abduction, which deals with *learning the art of theorizing*.