THE METHOD OF PROBLEMS VERSUS THE METHOD OF TOPICS

Fred Eidlin

The most common plea for help that I get from students writing term papers and theses takes something like the following form: "I've been in the Library reading and reading about my topic, but I don't know where I'm going."

Or, I ask a colleague what he or she is working on. They mention some exciting topic, like "ethnic conflict in the former Soviet Union," "anti-poverty policy," "Balkan nationalism," or the "Arab-Israeli conflict." "Yes, but what is the problem" I ask? What are you curious about? What puzzling questions need to be answered?" The response is often fumbling or an embarrassing silence.

Or, one goes to a lecture or picks up a book or article with an exciting title like one of those just mentioned. But it turns out to be disappointingly boring.

These are all examples of the malady of inquiry without problems, which I will call topicism. It is not just a malady of students who haven't learned how to research term papers and dissertations, it also affects professional scholars. It rests on views about knowledge that are deeply ingrained in commonsense knowledge as well as in most traditions of social scientific inquiry. These views take for granted that inquiry is a kind of a description. "Topic" comes from the ancient Greek *topos*, or place. To "cover a topic" suggests that there is some surface to cover, like a wall to be painted, or a blank slate, *tabula rasa*[1] to be written upon. One goes to the library to collect facts to cover a topic.

Karl Popper uses the metaphor of a bucket to describe this view of inquiry. Our minds are like empty buckets. Knowledge consists of the facts that have been poured through our senses into our empty bucket minds[2].

This view of scientific method is engrained in the standard view of scientific method, advanced by Francis Bacon in the early 17th century, and is still widely taught in social science methodology courses: We (1) strip ourselves of all pre-existing prejudices and preconceptions; (2) observe randomly; (3) note recurring regularities. (4) These regularities, or empirical generalizations, may then develop inductively into theories. In this Baconian view, a "discoverer merely observes facts diligently, collecting as many of them as he can. The rest is up to Mother Nature ..."[3]. "The proper and regular recording of observations will preserve us from all sorts of illusions and blind alleys. The deliberate, business-like nature of the whole undertaking will ensure that it is cumulative"[4]. In other words, scientific method is "a means of letting Nature directly dictate knowledge of herself to us". Theories are simply shorthand for regularities in the real world that repeat themselves. Thus, in this view of scientific method, even theory turns out to be a form of topic-covering description.

Topicism is rooted in an even older view of knowledge, which is still much alive both in commonsense knowledge and

[1] Locke, J. An Essay Concerning Human Understanding. Kenneth P. Winkler (ed.) // Indianapolis: Hackett Publishing Company. 1996. P. 33–36.

[2] Popper, Karl R. Conjectures and Refutations: The Growth of Scientific Knowledge. 2nd Edition // London: Routledge & Kegan Paul, 1965.

[3] Agassi, J. On Novelty // Science in Flux. Dordrecht: Riedel. 1975. P. 51–73.

[4] Bacon F. Quinton, Anthony // Oxford: University Press, 1980.

in much social science research. To research means to inquire into the nature or essence of things. This implies the pre-Kantian view that things contain their own interpretation, and that it is the aim of inquiry to uncover the true essences of things, and describe them faithfully. As, for example, Galileo saw the mathematical formulations of science faithfully replicating the underlying mathematical structure of nature[5]. As Aristotle's "basic premises" were statements describing the essences of things. And as Bacon viewed science as reading from The Book of Nature. If we want to know about dogs, we inquire into the nature (essence) of dogness. If we want to know about heat, we inquire into the nature (essence) of heat. If we want to know about justice or love or "The Good," we seek to lay bare their true nature (essences). In this view, to inquire means to strip away the accidental properties of a thing, laying bare those properties which are essential to it. Inquiry thus amounts to an effort to describe essences faithfully.

Try the following thought experiment: Follow scientific method as it is widely taught. Begin by stripping yourself of all your prejudices and preconceived notions. Then, observe randomly, as scientific method prescribes, and write down your observations.

I suspect these instructions will make you uncomfortable. You are supposed to observe randomly. Yet you probably wonder what it is that you are supposed to observe. This illustrates that observation never proceeds from a blank slate. It always has to be preceded by some question that might be decided by observation, or by pre-established categories that, for some reason, are considered relevant, for example, how many men, and how many women? What percentage of Caucasians, African American, Asians, and others?[6]

As a remedy for topicism, I propose the method of problems which, I will argue, is likely to be far more fruitful. This approach is standard in the natural sciences. In the social sciences, although the method of problems is not entirely foreign, topicism is endemic. In Popper's view, this is among the most important causes of the general poverty of the social sciences.

In keeping with the method of problems, I will begin, not by defining problems, but by giving examples of problems. I hope this will give readers a sense for what problems are made of.

Alexander Fleming, the discoverer of penicillin, was trying to grow cultures of the bacterium *Staphylococcus Aureus*. He noticed that bacterial colonies would not grow in certain areas of the culture. Other scientists in Fleming's laboratory also knew that there were problems in growing bacterial cultures in their laboratory, but were unable to explain why. Fleming noticed patches of mold in the areas where bacteria would not grow, and hypothesized that it was this that prevented the culture from growing. He isolated the mold, grew it in a liquid medium, and found that it produced a substance that could kill many of the bacteria that infect human beings.

Wilhelm Roentgen, the discoverer of x-rays, found that his photographic paper was spoiled. Although not exposed to light, it had black blotches on it. How could this be if the film had not been exposed to light? Roentgen noted that the film had been stored next to a cathode ray tube. He hypothesized that invisible rays from the cathode ray tube had penetrated the film packaging and exposed it.

Isaak Newton found that, if white light is put through a prism, it would be broken into the colors of the spectrum. This had, of course, been known at least since Aristotle. The prevailing explanation was that the more glass the light had to pass through, the darker the color it produced. Howev-

[5] Burtt, E.A. The Metaphysical Foundations of Modern Science. Doubleday Anchor, 1954.

[6] Popper, Karl R. Conjectures and Refutations: The Growth of Scientific Knowledge, 2nd Edition // London: Routledge & Kegan Paul, 1965.

er, when Newton passed light of individual colors though another prism, its color remained unchanged. His explanation was that white light is a mixture of colors. So, once broken down into its component colors, it could not be further broken down by being refracted again[7].

By the time Thomas Hobbes wrote *Leviathan*, such notions as commonwealth, individual freedom, equality, and rational consent were already well-developed in European society. The fundamental problem Hobbes faced was to explain how a political order could exist that was based on the consent of free, equal, self-interested and rational individuals. Why would such individuals consent to be governed? Hobbes solves this problem with a powerful argument as to why free, rational individuals would voluntarily surrender their natural rights to an absolute sovereign. True to the spirit of science, Hobbes asks readers to "read Thyself," that is, he invites them to test his assertions on themselves.

Benjamin Barber writes about the history of freedom in the Swiss Canton of Graubünden. Here is a political order that violates almost all of the fundamental premises in the tradition of English liberal thought. Nevertheless, the fact that the people of this canton have lived in freedom is unquestionable[8]. How can this be? A problem confronted and (apparently) solved in the literature on revolution is why people who *should be* revolting *are not* revolting, and why people are revolting, who should *not* be revolting. Why are the drivers of revolution so often people who are well off, or whose condition is improving? And why do people remain quiescent, whose condition is so miserable that they should be revolting[9].

Robert Michels was puzzled by the fact that socialist parties, despite their democratic ideology and provisions for mass participation, seemed to be as dominated by their leaders as were traditional conservative parties. If democracy and mass participation really are central value for social democrats, why do their own organizations develop into oligarchies?

The Iron law of oligarchy is an example of what is perhaps the largest genre of social science problem-explaining the gap between intentions and results. People and governments, it seems reasonable to assume, intend to do the right thing. It also seems reasonable to assume that no one would want to waste money and effort on policies they do not expect to work. Yet many policies do not work. Why not?

I have presented this mix of examples from the natural sciences, social sciences, and political theory, in order to illustrate how they all evoke curiosity in a similar way. In each case, it is a problem that gives rise to curiosity, that is, to a feeling that explanation is needed. But what is it that generates such curiosity?

The word problem come from the ancient Greek *problema*, which means hurdle. In scientific inquiry it is intellectual problems that are the hurdles. I will argue, following J.N. Hattiangadi[10], that intellectual problems are logical contradictions. A solution solves a problem by resolving the logical contradiction.

As Popper argues, the search for knowledge "does not start from perceptions, or observations, or collection of data or facts, but from problems"[11]. In order to know

[7] Bronowski, J. The Majestic Clockwork // The Ascent of Man. Boston: Little-Brown, 1974.

[8] Barber, Benjamin R. The Death of Communal Liberty: A History of Freedom in a Swiss Mountain Canton. Princeton, Princeton University Press, 1974.

[9] Almond, M. Uprising: Ideological Shifts and Political Upheavals That Have Shaped the World. London. Mitchell Beazley, 2002; Brinton, C. The Anatomy of Revolution, revised and expanded edition. New York: Vintage, 1965.

[10] Hattiangadi, J.N. The Structure of Problems (Part I)// Philosophy of the Social Sciences, 1978. P. 345–365.

[11] Popper, Karl R. Objective Knowledge: An Evolutionary Approach // Oxford: University Press, 1972; Popper, Karl R. The Logic of the Social Sciences.

what to observe, we must have in mind some question which might be decided by observation[12]. "[E]very problem arises from the discovery that something amiss within our supposed knowledge; or, viewed logically, ... from the discovery of an apparent contradiction between our supposed knowledge and the supposed facts[13]. In a similar vein, Murray Davis notes that "a new theory will be noticed only when it denies an old truth (proverb, platitude, maxim, adage, saying, common-place, etc.)." What distinguishes an interesting theory from an uninteresting theory, Davis argues, is that an interesting theory "denies the truth of some part of their routinely held assumption-ground. If it does not challenge but merely confirms one of their taken-for-granted beliefs, they will respond to it by rejecting its value while affirming its truth. They will declare that the proposition need not be stated because it is already part of their theoretical scheme: `Of course'. `That's obvious'. `Everybody knows that'. `It goes without saying'"[14].

All knowledge is theory impregnated, including our observations. We always identify problems against a background of knowledge or dispositions which were there previously. This background knowledge includes language which always incorporates many theories in the very structure of its usages, as well as many other theoretical assumptions which are unchallenged, at least for the time being. Even our sense organs have theory-like expectations built into them, and are blind to stimuli they are not built to react to. Thus, an observation becomes the starting point of inquiry only if it reveals a problem with our pre-existing knowledge, expectations, and theories[15].

"What motivates research, Hattiangadi argues, the reason we search for a solution to a problem is that a problem is a logical inconsistency[16]. An intellectual problem means "a logical inconsistency in an explicitly or tacitly held belief or an hypothesis we are considering for adoption, or both together". It is important to keep in mind that beliefs need not be conscious in order to be constituent of a problem. We may have a vague *feeling* that something is not in order with existing knowledge, yet be unable to pin down just what makes it problematic. It may be difficult, sometimes even impossible, to articulate all the beliefs which, taken together, are logically inconsistent. In fact, beliefs that are held unconsciously are particularly important since they are often so difficult to pin down and articulate.

Just what is it about a logical inconsistency that drives one to inquire? As Hattiangadi puts it, a "logical inconsistency has *a systemic effect*. It destroys the effectiveness of our system of beliefs, in that from a logically inconsistent set of statements *any statement follows*. A logical inconsistency, therefore, *forces us to seek an explanation*. For if we allow it to remain unexplained, it *undermines our entire system of beliefs*[17].

"Problems appear," Popper writes, "when our expectations are disappointed, or when our theories run into difficulties. They may arise within a theory or be-

The Positivist Dispute in German Sociology // London: Heinemann, 1976.

12 Popper, Karl R. Objective Knowledge: An Evolutionary Approach // Oxford: University Press, 1972.

13 Popper, Karl R. The Logic of the Social Sciences. The Positivist Dispute in German Sociology // London: Heinemann, 1976.

14 Davis, Murray S. That's Interesting! Towards a Phenomenology of Sociology and a Sociology of Phenomenology // Philosophy of the Social Sciences. V. 1: 1971. P. 309–344.

15 Popper, Karl R. Conjectures and refutations: The Growth of Scientific Knowledge. 2nd Edition // (London: Routledge & Kegan Paul), 1965; Popper, Karl R. Objective Knowledge: An Evolutionary Approach // Oxford: University Press, 1972; Popper, Karl R. The Logic of the Social Sciences. The Positivist Dispute in German Sociology // London: Heinemann, 1976.

16 Hattiangadi, J.N. The Structure of Problems (Part I) // Philosophy of the Social Sciences. 1978. P. 345–365.

17 Ibid.

tween two theories. They may result from a clash between our theories and our observations. Moreover, it is only through a problem that we become conscious of holding a theory. It is the problem which challenges us to learn, to advance our knowledge, to experiment, and to observe. An observation or fact or piece of data becomes the starting point of inquiry only if it reveals a problem with our pre-existing knowledge, expectations, and theories"[18].

If, for example, one believes that selfish behavior must have negative consequences for society, one will find this belief inconsistent with evidence to the effect that selfish behavior in market situations often results in public good. If one believes that a socialist party, because of its ideology, must be democratic and must strive for mass participation in its affairs, this will be found to be inconsistent with the facts noted by Michels. If one believes that English liberal theory contains the necessary prerequisites for a free society, this will be found to be inconsistent with the fact that, as Barber shows, freedom nevertheless exists in the canton of Graubuenden.

Consider the following thought experiment: You arrive at a lecture and a see a cannonball suspended in midair above the lectern. Would you not feel uncomfortable? What would you do? Would you just sit down and say something to yourself like: "Oh, well, I guess such things happen," and dismiss the suspended cannonball from your thoughts?

This thought experiment drives home why intellectual problems cry out for solutions. It also illustrates the common difficulty of identifying contradictory premises that one is not consciously aware of holding. Often, one or more of the assumptions that give rise to a problem will be so obvious and trivial that we do not even think about it. In this case:

I believe in the law of gravity.

I believe that my eyes give me true information.

I believe that I see a steel object hanging in midair.

One could, of course, "solve" the problem by giving up any one of these assumptions. We could give up belief in the Law of gravity. Maybe gravity isn't a universal regularity, as we had previously thought. This would resolve the contradiction. Or, we could give up the belief that our eyes give us true information. Yes, occasionally my eyes deceive me. Yet not many people would be satisfied with such solutions. Why not?

Unless we can specify the conditions under which the Law of gravity will or will not work, we can have no idea as to when it will or will not work in the future. The cannonball hanging in midair may be a unique occurrence — the only exception to the Law of gravity in the history of the Universe. Or, we may begin to find heavy things suspended in midair 4, 5, 10, maybe 1000 times or more every day from now on. Without specification of the conditions under which the Law of Gravity will be suspended, we have no way of knowing when or how often it will be suspended. The same holds for the belief that our eyes give us true information. In experiencing an optical illusion, such as a stick appearing bent in a glass of water, we may be amused at how our eyes are deceiving us. But any unexplained instance of our eyes deceiving us raises the possibility that they may deceive us at any time-perhaps when we are driving or crossing the street.

Problems and Problem Situations:

What is considered problematic therefore depends on preexisting knowledge. Poverty in the United States may be puzzling for someone who believes that (1) no one wants to be poor and that (2) everyone in America has the possibility of overcoming poverty. But it will not be puzzling for a Marxist. In fact, it is precisely what the

[18] Popper, Karl R. The Logic of the Social Sciences. The Positivist Dispute in German Sociology. London: Heinemann, 1976.

Marxist would expect. On the other hand, when World War I broke out, the support of all European Socialist parties for the war efforts of their respective countries represented a serious theoretical problem for Marxists. It flew in the face of the almost universally-held belief among Marxists, that the proletarians of different countries had more in common with each other than they did with the exploiting classes of their own countries. They would never consent to go to war against their proletarian brothers and sisters. But Socialist support for the War would not have been surprising at all to nationalists, for example. Similarly, the failure of the socialist revolution in Germany in 1918, a country seeming to have all the prerequisites for such a revolution, was surprising to Marxists. Yet its failure was just what many who did not hold Marxist premises expected. What is problematic for an elite theorist may not be problematic for a pluralist, and vice versa. What is problematic for a functionalist may not be problematic for a conflict theorist and vice versa.

This may appear to be a relativist line of argument, but it is not. The questions people ask always depend on their background knowledge and beliefs, and on what they happen to be interested in. Different people, including different scientists, have different cognitive interests. For instance, an ornithologist, an entomologist, a horticulturalist, and a real estate agent may all gather facts about the same piece of land, yet give completely different accounts of it. Yet all of these accounts may be true. A veterinarian, a microbiologist, and a molecular biologist may examine the same animal, yet they will all go at their examination in different ways, and give entirely different accounts of it. Marxists, liberals, and conservatives, holding differing theoretical assumptions, may give differing accounts of the same society, all of which may be true[19]. This is why it is so central to the method of problems to strive to discover and articulate the background assumptions that give rise to problems. This is why, in following the method of problems, it is crucial to struggle to keep in mind that there are always assumptions of which we are unaware.

The method of problems retains the aim of finding true explanations. The accounts of the veterinarian, the microbiologist, and the molecular biologist of "the same the same animal" may all be true, and entirely consistent with each other. As long as their assertions about reality are not contradictory, there will be no problem. On the other hand, it is entirely possible for hypotheses formulated in very different frameworks to contradict each other. Statements about a reality presumed, by all parties to a debate, to exist outside all frameworks may contradict each other. Such contradictions will call for explanation. And the reality which all believe to exist outside of all frameworks can serve as the touchstone of truth. In other words, hypotheses cast in all any of these frameworks can be tested against reality, and critically discussed in light of such tests.

To be sure, the liberal and the Marxist inhabit different conceptual frameworks and thus, in an important sense, they live in different worlds. For this reason, discourse between them may be difficult and frustrating. Yet both share belief in an autonomous reality, existing independently of their differing accounts of it. The Marxist, and the liberal are both capable of understanding that, according to the theory held by the liberal, poverty should not exist in America. And they can both observe that poverty, nevertheless, does exist. The Marxist and the liberal are both capable of comprehending that, according to Marxist theory, the socialist revolution should have already occurred. And both can observe that it has not yet occurred. Although their values and styles of thinking may differ, both share at least some capacity for rational thought and discussion. These shared assumptions make it possible for each to iden-

[19] Wisdom, J.O. Schemata in Social Science. Part One: Structural and Operational // Schemata in Social Science: Part I. Inquiry 23. 1980. P. 445–464.

tify difficulties in the other's account of reality. What gives science its unity is its assumption of a reality outside of all frameworks, existing independently of what anyone thinks about it. This is not inconsistent with recognition that all statements about reality involve interpretation, and are biased by background knowledge, including the frameworks in which they are cast. However, under certain circumstances, as Popper notes, observations can "destroy even the frame itself, if they clash with certain of the expectations. In such a case, they can have an effect upon our horizon of expectations like a bombshell. This bombshell may force us to reconstruct, or rebuild our whole horizon of expectations..."[20]

Experience of reality, and beliefs about it may differ greatly from one individual to another. And perception, interpretation, and reason are, of course, all subject to bias. This implies that not only verifications, but even falsifications, will always remain inconclusive. Any falsification will be only an apparent falsification since, like all observations, every observation of a falsifying event involves interpretation. Nevertheless, despite all this, there is an important lesson to be learned from the advanced natural sciences. It is that knowledge may sometimes progress through the invention and criticism (including tests) of hypotheses that are put forward as attempts to solve problems.

This is why the philosopher-anthropologist Ernest Gellner was so hostile to the idea of a feminist epistemology, that is, of some sort of feminist truth as opposed to truth. It is why Popper was so hostile to the idea of truth being different for different social classes. To be sure, feminists have made valuable contributions in showing how women experience the world differently from men, and why such differences can be very important. And Marx shows convincingly how the reality of liberalism looked different to a factory worker than it did to a factory owner. As Anatole France so nicely put it, "... the majestic quality of the law ... prohibits the wealthy as well as the poor from sleeping under the bridges, from begging in the streets, and from stealing bread.[21]"

There is thus an important sense in which men and women actually do inhabit different worlds, as do bourgeois and proletarians. Marxist and feminist theories incorporate experience peculiar to the proletariat and to women, respectively. Nevertheless, who can deny that men are sometimes able to comprehend (admittedly, sometimes with great difficulty) the experience of women, and vice-versa? Countless writers who successfully create characters of the opposite sex illustrate this very well. And bourgeois are sometimes able to comprehend the experience of proletarians very well. Marx and Engels themselves serve as good examples of this. And consequences derived from Marxist and feminist theories may contradict established theories or observations. Such contradictions may thus become the drivers of efforts to find out the truth of the matter. In the process, either the established theory, or the Marxist or feminist theory may be modified. Or, a new theory may emerge that encompasses both contending theories.

Most background assumptions, both in science and in common sense, come from language, culture, tradition, and other taken-for-granted sources. Where, for example, do we pick up such beliefs as the Law of Gravity, or the theory that the Earth is round and revolves around the Sun. Where do we get our notions of what counts as a fact, or as a valid claim to know? We assimilate them, largely unconsciously, and are not even aware of holding many such beliefs. It is only when some newly-encountered theory or observation clashes with unconscious background assumptions that we sometimes become aware of them. This helps explain why people so of-

[20] Popper, Karl R. Objective Knowledge: An Evolutionary Approach. Oxford: University Press, 1972.

[21] France, A. The Red Lily. Project Gutenberg EBook, 2004. Ch. 7.

ten talk by each other. Background assumptions are taken as obvious, as self-evident. Misunderstandings are often due to clashes among differing self-evident truths of different people. We can even be aware in principle that others may be right when they see things differently from the way we do. Yet it is exceedingly difficult actually to grasp and apply this insight in practice. It is exceedingly difficult to imagine how our own self-evident truths might be mistaken, and how what we think is absurd may turn out to be right. Yet everyone has had the experience of finding out, on more than one occasion, that they were mistaken about something of which they had been absolutely certain.

The problem situation in any science is always shaped by prevailing theories, methods, and metaphysical views. Even in the natural sciences, many background assumptions are provided by paradigms[22] or scientific[23] or metaphysical[24] research programs. Michael Polanyi has drawn attention to the crucial role of what he calls tacit knowledge in giving meaning to raw sense experience. Much background knowledge in science is tacit, that is, acquired through practice, and cannot be fully articulated. Tacit knowledge includes standards that determine which views are taken seriously and which are not[25]. Often, tacit knowledge is carried only in professional gossip and, and this may be an important factor blocking growth of knowledge.

Ethical, practical, and political problems:

While all problems may be hurdles, not all hurdles need be intellectual hurdles, that is, logical contradictions. There are other kinds of problems, among them ethical, practical, and political problems. Such problems are not in themselves intellectual problems, though they usually can be intellectually problematized. A problem may be intellectualized as part of an effort to find a solution, out of curiosity, or as part of some more general theoretical enterprise. An American President may, for example, want to increase aid to Third World countries. But Congress refuses to appropriate funds. Such a political dilemma would clearly be a hurdle for the President. Yet there is nothing logically contradictory about the President *wanting* to give more foreign aid and not having enough support in Congress.

Nevertheless, some observers might see a variety of intellectual problems in such a situation. Someone might, for example, see the behavior of Congress as puzzling, and seek explanation. Someone might be puzzled that a President with a strong track record for getting bills through Congress had failed in this case. Such puzzles *would be* logical inconsistencies, which might make some observers curious, and lead them to seek explanation. An explanation might also solve the political problem, but not necessarily. The puzzle may be fully explained without solving the political problem. It may do no more than satisfy the curiosity of the inquirer. Sometimes, policy makers really agonize, trying first to intellectualize problems they face, and then to find solutions to them. Sometimes their solutions involve innovative discoveries, that is, breakthroughs in thought. Yet more often than not, the solutions to political problems are intellectually trivial. The President

[22] Kuhn, Thomas S. The Structure of Scientific Revolutions. Chicago: University of Chicago Press, 1962.

[23] Lakatos, I. "Methodology of Scientific Research Programmes," in Imre Lakatos and Alan Musgrave, eds., Criticism and the Growth of Knowledge. Cambridge: University Press, 1970. P. 91–196.

[24] Popper, Karl R. A Metaphysical Epilogue. Quantum Theory and the Schism in Physics. Totowa, N.J. : Rowman and Littlefield, 1982; Agassi, J. The Nature of Scientific Problems and Their Roots in Metaphysics // Science in Flux. Dordrecht: Riedel, 1975. P. 208–239; Agassi, J. Questions of Science and Metaphysics // Science in Flux. Dordrecht, Riedel, 1975. P. 240–269; Agassi, J. The Confusion between Physics and Metaphysics in the Standard Histories of Science // Science in Flux. Dordrecht, Riedel, 1975. P. 270–281.

[25] Polanyi, M. The Tacit Dimension. New York : Doubleday Anchor Books, 1967. Ch. 1.

may just twist arms or do favors to get his bill through. Or, he may find an ally in some powerful or charismatic individual who persuades or bullies enough members to vote for the increased foreign aid.

Many political problems belong to a subset of the broader set of practical problems. For example, a Member of Congress may be faced with the problem of reconciling conflicting interests of different constituents. Solving practical problems need not necessarily involve solving intellectual problems-*although it may involve solving them*. I may want to buy a new car, but not have sufficient funds. I might solve this practical problem in various ways. I could work overtime, borrow the money, or steal it. Or, alternatively, I could intellectualize the problem, and invent a solution that gets me the car without incurring debt, risking imprisonment, or spending all my time working.

Ethical problems are also hurdles and, like practical problems, the hurdles are not in themselves logical contradictions. I may believe it wrong to tell a lie and also believe it wrong to let people die if I can prevent it. In a given situation, however, I may be confronted with the choice of either lying, or letting 1000 people die as a result of not lying. This is an example of the kind of conflict of values that people face all the time. However, conflicting values are not *logically contradictory*. We may simply make a choice that violates or compromises one or more of the conflicting values. This need not entail an intellectual problem. It may involve no more than a weighing of the ethical options against conscience and opting for the one that is least troubling. Many political problems are ethical problems, or at least have an ethical component.

Like practical problems, ethical problems may also be intellectually problematized. I may search for a way out of the ethical dilemma that avoids violating either of the conflicting values. Sometimes, an ingenious solution may be invented in thought, which make it possible to skirt difficult ethical dilemmas.

Conclusions: Implications for Teaching and Research

Of course, some readers will recognize what they already practice in the method I am advocating. They try to help lost students formulate problematic questions. In their own research, they strive to identify and grapple with live, important problems. Many are convinced that the best way to help students learn is by teaching them how to formulate and solve problems. Much classical and much of celebrated contemporary social science is unmistakably problem-driven. One need only think of the work of Marx, Durkheim, Weber, Freud, Pareto, Mosca, Michels, Keynes, Nisbet, Schelling, Milgram, Barber, Dahl, and Key, to name just a few. The work of many classical and contemporary political thinkers is also unmistakably problem-driven — Plato, Hobbes, Machiavelli, Rousseau, Constant, and Rawls, again to name just a few. Problem-driven research is by no means a monopoly of the advanced natural sciences.

However, even a cursory glance at social science literature will reveal rampant topicism. And it is not only students who lack problems to focus and drive their research. Many of their teachers, that is professional social scientists, are also topicists, whether they know it or not. Just as there are countless boring, student term papers, theses, and dissertations that are devoid of problems, so are there also countless academic lectures, books and articles that are also boring because they are devoid of problems.

The distinction between problem-driven research and problem-devoid research does not run between description and theory. Problem-driven research need not be directly theory-driven. Even in the advanced sciences, a substantial part of the scientific enterprise amounts to description, which

includes much of the measurement, classification, mapping, modeling, comparison, and analysis that natural scientists do. As Nobel Physics Laureate Ernest Rutherford put it: "All science is either physics or stamp collecting." By physics I take Rutherford to mean the theoretical heart of science, that is, the quest for generality. But stamp collecting is also crucial to the scientific enterprise. It is intimately bound up with the broader enterprise of theorizing, and much of it involves problem-solving. Fleming's hypothesis that it was the mold that prevented bacteria from growing is an example of a problem solved by description. Discovery of a thin, previously unseen wire holding up the cannonball floating in midair would also solve this problem by description. More generally, structural explanations in both the natural and the social sciences solve problems by description rather than by subsuming facts under law-like generalizations. In the advanced natural sciences, description is ordinarily subservient to problems, and is thus not topicist in character. In the social sciences, description all too often is not subservient to problems.

More often than not, the lost student, rather than being helped to formulate a problem, is provided with some template, that is, with some framework or set of procedures or steps to follow. Such templates often enable students to cover their topics without addressing problems. Even theory or, more accurately, what is *called* theory, often fulfills such a template function. A topic may be "covered" by channeling data into the framework and terminology of some so-called theory without encountering any problems. Many students, not to mention many of their teachers, prefer following templates to struggling with problems. In fact, a template is often just the kind of assistance students expect from their professors.

What is sometimes called method-driven research is a species of what I am calling topic-oriented or template-steered, as opposed to problem-driven research. Most social science methodology textbooks, qualitative as well as quantitative, provide students with just such templates. The procedures prescribed by the textbooks steer them towards topic-oriented, rather than problem — driven research.

It is striking how little attention is paid in the social science methodology textbook literature to notions as central to science as "problem" and "explanation." Even when these words are used, it is rarely in the sense of the curiosity-driven kind of research at the heart of the present discussion. In many widely-used methods textbooks, the words problem and explanation do not even appear in the index (See, for example, Shively, 2002; Kolb, 1978; Reason, 1988). In others, while the words problem and explanation do appear (one or the other or both), discussion of them is cursory. And they are not used in the sense of curiosity-driven research (See, for example, King, Keohane, and Verba, 1994; Babbie, 1999; Selltiz, Wrightsman, and Cook, 1976; Manheim, Rich, and Willnat, 2002; Carlson and Hyde, 2003; Kolb, 1978). Sometimes, even textbooks that stress the importance of problems end up using the word problem as a synonym for topic (See, for example, Del Balso and Lewis, 2001: 38–39; Cole, 1980: 11–17; Sullivan, 2001: 88–94). Or they give examples of problems that are obviously important, but which turn out to be practical, ethical, or political problems that have not been intellectualized. That is, it is unclear which puzzling questions, if any, might underlie them (See, for example, Sullivan, 2001: 85–87). Generally, rather than teaching students to formulate and grapple with intellectually-challenging problems, the methods textbooks teach them how to "collect" or "gather" data, and look for correlations and empirical generalizations. As Popper puts it, "they try to copy the method of natural science, *not as it actually* is but as it is wrongly alleged

to be"[26]. And, as Davis writes, students "who follow to the letter all of the injunctions of current text-books on `theory-construction', but take into account no other criterion in the construction of their theories, will turn out work which will be found dull indeed"[27].

It is all too easy to confuse problems with topics. These greatly differing approaches are commonly confused, both in ordinary language and in sophisticated scholarly inquiry. The word problem often used in the sense of topic, but word topic is often used in the sense of problem. The confusion derives from widespread and deeply-rooted, albeit problematic, views about knowledge and inquiry, as discussed above. Aristotle wrote that problems are questions. Although this sounds plausible, it begs the question. For what distinguishes an idle question from a problematic question?[28] Similarly, many scholars, even distinguished ones, describe research, not as problem-driven, but as data-gathering, seeking support for hypotheses, or clarifying concepts. They see growth of knowledge as taking place, not by problem formulation, invention of hypotheses, and criticism (including, among other things, empirical tests), but through the accumulation and systematization of facts.

It is one thing to agree that problems are important, as even many topicists enthusiastically do. It is another matter actually to conduct problem-driven research. The human psyche is naturally uncomfortable with open problems, and routinely ignores or closes them without solving them. The desire to follow a formula or template is all too understandable. But templates tend to freeze their own order into research. As Marx Wartofsky writes, "ontology recapitulates methodology"[29]. That is to say, the picture of reality resulting from research is shaped and colored by the method used to investigate it. As Albert Einstein writes: "Concepts which have proved useful for ordering things easily assume so great an authority over us, that we forget their terrestrial origin and accept them as unalterable facts. They then become labeled as 'conceptual necessities,' etc. The road of scientific progress is frequently blocked for long periods by such errors." Templates tend to lead to topic-oriented research that fosters such blockage.

To be sure, following a template need not necessarily lead to topicism. Paradigms, scientific research programs, metaphysical research programs, and scientific theories are all templates of sorts that serve as rough roadmaps for scientific research. In the advanced sciences, research does not usually begin for as long as the roadmap is working smoothly and is successfully anticipating the expected. Research begins when the roadmap runs into trouble, or when it points towards the counterintuitive, or the unknown. Sensitivity to flies in the ointment, that is to problems, is the hallmark of the good scientist.

It can be difficult to formulate problems and hold them at the center of research. Formulating genuine research problems often requires much imagination and struggle. And problems often dissolve as researchers discover the naïvety or falsity of assumptions underlying them. As Einstein once put it, "If we knew what

[26] Popper, Karl R. Objective Knowledge: An Evolutionary Approach // Oxford: University Press, 1972; Popper, Karl R. A Metaphysical Epilogue. Quantum Theory and the Schism in Physics // Totowa, N.J. : Rowman and Littlefield, 1982.

[27] Davis, Murray S. That's Interesting! Towards a Phenomenology of Sociology and a Sociology of Phenomenology // Philosophy of the Social Sciences. V. 1: 1971. P. 309–344.

[28] Hattiangadi, J.N. The Structure of Problems (Part I) // Philosophy of the Social Sciences. 1978. P. 345–365.

[29] Wartofsky, M. How to Begin Again: Medical Therapies for the Philosophy of Science, in Frederick Suppe & Peter Asquith, eds. 1976; PSA 1976: Proceedings of the 1976 Biennial Meeting of the Philosophy of Science Association, Volume 2 (East Lansing, MI: Philosophy of Science Association). P. 109–122.

we were looking for, it wouldn't be research, would it?" Grappling with open problems requires a high level of tolerance of ambiguity. And there is never a guarantee that a scientist will succeed, even in formulating a real problem, let alone in finding a solution.

There is no cookbook for the method of problems.

Метод проблем против метода тем

Фред Эйдлин, профессор Факультета гуманитарных исследований Карлова университета в Праге

Аннотация. *В процессе формулировки и работы над той или иной темой в рамках научного исследования многие научные деятели сталкиваются с определенными сложностями, пытаясь сформулировать проблему и основной вопрос их исследования. Автор статьи предлагает несколько методов, призванных помочь исследователям в работе над архитектурой их исследовательского проекта.*
Ключевые слова: *наука, научная работа, исследование, исследовательский вопрос, исследовательская проблема.*

The Method of Problems versus the Method of Topics

Fred Eidlin, professor at Charles University in Prague, the faculty of Humanities

Abstract: *Many scholars face a difficulty in formulating a research problem and research question while working on the research. The author introduces several methods that would help researchers to be more precise while working on the architecture of their research topic.*
Key Words: *science, research, research problem, research question.*