

## Educational Research and the Interests of the State: The Divisive Case of Generalizability

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The recent report of the National Research Council (NRC), *Scientific Research in Education*, entered the world of educational research on a note of surprise and terror. The report was created in an environment of political controversy surrounding the proper role of the state in funding educational research. In legislation to reauthorize the OERI (H.R. 4875, the “Castle bill”), conservative politicians had drafted controversial definitions stipulating what should count as “scientific” research.<sup>1</sup> In response, the NRC committee was asked to provide a more informed perspective on the nature of scientific practice. In the NRC report, the council offered a description of science that differed from the proposed legislation. Rather than identifying science by a particular method, the report suggested that science is best distinguished by several general characteristics. But the NRC’s description of science has also been hotly contested. Some say that science should not be normatively characterized at all; others take issue with specific aspects of the report’s description of science. The report’s fifth characterization of science, that it should be in the business of replication and generalization, has been particularly controversial.

In response to the NRC report, Elizabeth Adams St. Pierre warns that it “should scare us all to death.”<sup>2</sup> According to St. Pierre, the NRC report says that science “states testable hypotheses, is objective, without bias, randomized, replicable, generalizable, predictive, and capable of being synthesized,” a view of science which she claims “does not describe most qualitative research.”<sup>3</sup> She worries that this conception of scientific research would be exclusive, leaving out researchers who do not describe themselves as producing the unbiased, generalizable results the report suggests. Restricting alternative views of science is dangerous she says, quoting John Caputo, because “*dissensus* stirs the pots of democracy.”<sup>4</sup> It would thus be better for the democratic state to refrain from endorsing any one particular view of science.

While few would disagree that dissent should be encouraged in scientific research, it would be odd to think that the state should, in the name of promoting dissent, fund every proposal claiming to offer an alternative voice. Creation science may offer a dissenting voice — it may even offer valid criticisms of Darwinian evolutionary theory here and there — but surely the state has no obligation to support the enterprise monetarily. Tolerate, maybe even encourage somehow, but not fund. The state has interests and needs in addition to building a stimulating intellectual environment loaded with opposing opinions. Given the competing needs of the state, all those who think their views should be included for consideration in state funding decisions need to make a *positive* case that their views — and their ways of doing science — are of sufficient import to be taken up by the state. The state simply cannot fund everyone who makes a claim on its resources.

The question of whether the state should be neutral toward science presupposes that the state *can* be neutral toward science and epistemological issues. I doubt that it can be. When we involve institutions in scientific practices, our thinking about the nature of these practices often changes, at least in contexts where the institution is directly involved in sustaining the practice. My task here is to argue that the state exerts an influence, and I will attempt to describe what this influence is. The question I ask is this: What should research be in order for the democratic state to have a legitimate interest in funding it? To answer this question, I will consider the characteristics of a democratic state and explain what state involvement means for scientific practice. To make the project manageable, I will focus on one example: the problem of generalizability.

#### GENERALIZABILITY AND ITS CRITICS

The extent to which generalization should be a normative aim of research in the social sciences has been much debated. Some, like the authors of the NRC report, see it as an essential feature of the scientific enterprise. Others reject generalizability as a normative research aim, at least with regard to their own projects. Norman Denzin writes, for example, “The interpretivist rejects generalization as a goal and never attempts to draw randomly selected samples of human experience.”<sup>55</sup> The rhetoric of Yvonna Lincoln and Egon Guba mirrors these feelings: “If there is a ‘true’ generalization,” they write, “it is that there can be no generalization.”<sup>56</sup> Janet Schofield generalizes this lack of interest in generalization when she writes that many qualitative researchers give generalizability “very low priority or see it as essentially irrelevant to their goals.”<sup>57</sup> And, as I have already pointed out, St. Pierre mentions the generalization stipulation as one reason to reject the NRC report — it would simply be exclusive of too many researchers. Although it may seem from this summary that the opponents of generalizability all come from the “qualitative” side of educational research, it would be a mistake to think that this quarrel is simply between “qualitative” and “quantitative” researchers. As I will soon emphasize, many qualitative researchers have favorably discussed generalizability; indeed, there is much disagreement on this matter within the qualitative community itself. The debate, then, does not break down along qualitative/quantitative lines.

Worries about the generalization of research findings are often quite valid, of course, and may correct those who would generalize too early, too widely, and without sufficient warrant. Moreover, few theorists would deny that the idea of generalizability presents some thorny theoretical issues like the problem of induction, the problem of how specific contexts wreak havoc on universalized statements, and the issue of freedom versus determinism in social science. The real debate begins when researchers decide how much these theoretical worries matter when choosing research goals and methods. Some seem to think that these worries should not prevent generalization from being a valid research aim; others take the opposite view. Does involving the state in this decision push us one way or the other?

Before I argue that the state cannot be silent, and endorse a vision of how generalizability plays out in the context of state funding, a clarification should be made. I will be using the term “generalizable” broadly. I do not only mean statistical

generalizability from experimental methodology and random selection. Although the term has come to have these connotations, such a linkage is largely baseless: As Firestone points out, compelling generalizations can be made by different methodologies in a variety of ways, including statistically (transferring results from samples to populations), analytically (transferring particular findings to a broader explanatory theory), and on a case-to-case basis (transferring the results from one case to another).<sup>8</sup> By generalizable findings, I will mean research findings or conclusions that point beyond themselves; they are things evident that point to (and have implications for) the non-evident. Standing opposed to generalizable research is research into what I will call “radical particularity.” This research claims to deal with only particular individuals at unique moments in time.

The tent of generalizability I have constructed is large enough that even many critics of the generalizability may find room within it. Certainly, Lincoln and Guba’s idea of “transferability” is a generalization in the way I describe it above. Their generalizations are called “working hypotheses,” which are simply generalizations that pay close attention to variable contexts before making assertions of transferability. If expanding the notion of generalizability beyond its statistical connotations and severing any necessary link to universal laws makes the concept any less divisive, then this is a development to be welcomed. It is one more unnecessary divide among educational researchers.

#### GENERALIZABILITY AND THE INTERESTS OF THE STATE

My first thesis is this: We should admit that the state has a legitimate interest in generalizable research. If I believe that the government should fund my research, I also must accept an expectation that my research findings must, in some way, be generalizable, or potentially generalizable, or part of a research program aimed at refining and critiquing generalized knowledge claims. State funding pushes researchers toward a normative research aim of generalizability, and away from research into the radically particular. My second thesis is that, while we should be aware of this stipulation, we should also admit that this stipulation *by itself* means little for methodological selection since generalizable results can be gathered in many ways. Generalizability should not be a divisive point that prevents a research community from endorsing moderate statements like the NRC report.

To explain why the state has a legitimate interest in a research aim of generalizability, I will turn to the idea of a state. When we are clear about what a state is, I argue, it becomes clear why the state would want to support generalizability in research. This is, of course, not the only way to approach this problem. Another way to think about what funded scientific research should look like would be to ask what it means to do research that is *scientific* — this was the strategy of the NRC report. Another strategy would be to ask what it means to do research in *education*. It could be argued that education is a practice (like first aid) and not an academic discipline (like art history), that because it is a practice it needs research that is useful, and that useful research produces results that are generalizable. After all, if past findings do not in any way generalize to future cases, then they are useless for predicting and organizing future action. Simply remembering that education is a practice takes us

a long way in understanding why educational research should aim to be generalizable.

The fact that education is a practice, however, may only give us a reason for endorsing a narrow conception of generalizability. If I were a wealthy parent, for example, I could fund research into how my child learns. Such research may be practically useful for the education of one individual, and even generalizable from past to future, but it does not need to produce results that extend beyond my child. Thus, it seems necessary to look at the question of *who* is funding the educational research. For this reason, the idea of the state as the funding agent is my point of departure — what does it mean that the *state* is funding this research? By itself, state funding does not necessarily suggest that educational research be useful (the fact that such funding is involved in educational practice does that); rather, state funding suggests that educational research be useful on a broader scale rather than on a narrower one. I will present three arguments why the democratic state has a legitimate interest in seeking generalizable research.

#### THE ARGUMENT FROM THE BROAD CONCERNS OF THE STATE

The first argument revolves around the nature of the problems the state faces. For practical purposes, the state is usually concerned with issues of a *general* welfare. This is not to say that the state is unmoved by issues of individual welfare; rather, it is to say that a state is generally composed of many individuals and, due to practical limitations, the state often cannot act to solve the problems of only this or that individual. Suppose a single student is severely allergic to a paper product commonly used in schools. If this were the only person to have this problem, the state would probably not be justified in spending large amounts of research money into developing a new type of paper. But it would be justified if the problem were more widespread. The state must focus on problems that affect different individuals across distinct moments in time. Research in the state's interest must likewise aim at gathering information that extends to meet these broad problems, even if the information is necessarily gathered in smaller groups. Thus, the large-scale problems the state faces imply that research done in the state's interest must, in some way, be generalizable across specific cases.

#### THE ARGUMENT FROM THE ACTIVITY OF LAW MAKING

The second argument is a variant of the first, and it emphasizes the instruments the state uses to solve its problems. The state often attempts to solve its problems through creating and enforcing laws and policies. The crux of the argument is that these activities are intimately involved with generalization. In a legislative process, rules are formed to address future cases. This necessitates the construction of broad categories of action (e.g., "murder in the first degree") and people (for example, "white collar criminal"). Laws and policies are generalized guidelines for action; they sometimes range over entire populations. If the state acts through laws and policies, it would seem that research informing this framework of action would need to parallel the scope of these activities. The democratic state's legitimate interests need to be pursued through legislation that has general effects, and general effects can only be studied through research that generalizes.

Imagine that a state is considering a law stipulating that alcohol offenders should attend a rehabilitation program. To be helpful in this law making activity, research into the treatment program would need to say something beyond what is found for any one particular group of program participants. The law will have general effects, and policy makers need to know what these general effects might be. It is possible, of course, to do research that attempts to find exceptions to laws — cases when a civic law should not hold. But even in cases like these, the research needs to be able to say that law X should not hold in cases of Y. Exceptions to laws also need to be generalized across people and times. In sum, research that helps law-making activities is research that is generalizable.

#### THE ARGUMENT FROM THE ANTI-AUTHORITARIAN ETHOS OF THE DEMOCRATIC STATE

The third thing to remember about a democratic state is that, in such a society, knowledge claims are not legitimized through authoritative decree. As John Dewey says, democracy “repudiates the principle of external authority.”<sup>9</sup> The democratic ethos pushes us to knowledge claims that can be checked and verified; we demand public reasons for public knowledge claims. Since a democratic state is suspicious of claims based on authority as it pursues public knowledge, it is usually not content with the testimony of a single investigator. The knowledge claims of radical particularists, who report on ever fleeting unique situations, violate this democratic ethos. Their findings arise in particular situations, they say, that need never arise again. In the face of any challenge, the particularists could always say what is said in the face of failed humor: “I guess you had to be there.” This response, however, asks us to accept judgments on authority. Although sometimes this sort of unverifiable testimony of past events is the best we have (such as in cases of eyewitness testimony in legal proceedings), it cuts across the grain of democratic impulses. We prefer not to base decisions for future action on unverifiable truth claims.

We could say, then, that our democratic sensibilities make us want to be able to replicate and verify claims to knowledge. For the idea of replication to make sense, however, there must already be a presupposition of generalizability. If I desire to replicate a study, I need to make the assumption that the results of the study at time  $t_1$  will be reproducible under similar conditions at  $t_2$ . To allow for verification, I need to make the assumption of generalizability that like causes will produce like effects. This is not to say that generalizability and replicability are the same thing. Rather, it is to say that the idea of replication only makes sense when we assume that findings of well-done research studies generalize across time. If generalizability is impossible, then so is replication, and in this there is a conflict with the democratic ethos. To avoid this conflict we must assume the possibility of generalizability. Generalizability is not just something that helps to predict and organize future experiences; rather, generalizability is an important aspect of research in free and open democratic states.

I have suggested that a democratic state has three important characteristics. First, it is an entity that faces broad problems. Second, it is largely concerned with the activities of law making and law maintaining. Third, it desires publicly verifiable reasons for public knowledge claims. Each of these descriptions pushes us toward

generalizability. If we accept that these are the proper (or unavoidable) characteristics of the state, then it seems that we also have arguments for adopting generalizability as a normative research aim in the context of state funding. While these arguments may perhaps fail to show that a state would *never* be interested in funding non-generalizable research, they do show that radical particularists will need to justify why the state has an interest in funding their research.

#### OBJECTIONS

One way to object to the conclusion of these arguments is to show that the state also has a strong interest in “local” knowledge. To build a bridge, engineers need to use generalizations about physics, to be sure, but they also need to know things specific to the place in which the bridge is to be built – for example, local climatic conditions. To improve educational practice, local knowledge of schools and classrooms likewise seems necessary. Thus, my critic argues, the state should not *only* be interested in funding generalizable projects since this local knowledge is also vital to improving educational practice.

It would indeed be tragic to apply generalized knowledge claims without an intimate knowledge of the particular context. We would also go wrong in assuming, however, that there is a deep divide between the concept of local knowledge and the concept of generalizability. Indeed, to describe the climatic conditions of a specific locality, we often need to make generalized statements. In saying, “In my hometown, it snows a lot during the winter,” I make a localized knowledge claim that operates in a bounded context, but it also involves generalized claims spanning across time, going from the evident to the non-evident. Indeed, in making this local claim, I am telling you what to expect if you go to that particular place, and you can then adjust your action accordingly. Even local knowledge must connect past experience to future expectations, and this is to generalize. We can grant the need for local knowledge, then, while still maintaining the normative character of generalizability — they are not mutually exclusive categories.

But what about disciplines like educational history and philosophy? Where does non-scientific research fit into my analysis of generalizability? I would like to say that my analysis is only meant to address “scientific” educational research. However, since my strategy is to argue from the idea of a state, and not from the idea of science, my analysis would seem to apply to any other type of stat-funded educational research including history and philosophy.

Historians and philosophers, however, need not be worried about a normative research aim of generalizability. First, history and philosophy can play an important role in refining and critiquing generalized scientific knowledge claims, and could certainly be funded as they participate in this activity. Second, these disciplines can themselves produce generalizable results. Dewey seems to make generalizability normative for historical studies when he writes, “Knowledge of the past is significant only as it deepens and extends our understanding of the present.”<sup>10</sup> It seems plausible to say that history can produce generalizable results, but what about philosophy? Is research into, say, the ends of education somehow generalizable? It is true that, when thinking about ends, one is not describing the world so much as

offering a vision of what could be: the “direction of fit,” to use philosophical jargon, is not mind-to-world (in which I want my mind to match the world), but world-to-mind (in which I want the world to match my mind). This does not mean, however, that the language of generalization is inappropriate for world-to-mind claims (and that state funding would therefore be inappropriate). Indeed, the idea of a “direction of fit” is helpful because it suggests a symmetry between descriptive and prescriptive mental states. As such, research into educational ends can come to mirror the form of research needed by the state. There is a sense of generalizability not only in the mind-to-world direction, but also in the world-to-mind direction. In the former, there is the possibility of descriptive generalization; in the latter, there is the possibility of *prescriptive generalization*. Even though a research project is arguing for what should be, rather than describing what is, its form can still be in line with the legitimate needs of the state and therefore be funded by the state.

Clearly, the state would be interested only in normative research that offers at least some degree of prescriptive generalization. It would not be interested in funding research into the ends of education for Jones or Smith taken as individuals; it would need to make broader statements about larger categories of people. The state should not usually fund research into the aims of only one particular student. Thus, philosophy, or any other discipline that makes normative claims, would certainly be fundable under this view, since the form of research can come to parallel the form of research the state needs.

#### WHAT THESE ARGUMENTS DO AND DO NOT SHOW

The above arguments show that the state has a legitimate interest in funding research that is, in some way, generalizable. These arguments, however, say nothing about many other problems. First, the state may be interested in making generalizations, but it does not then follow that all research that is generalizable is then in the interest of the state. For example, I may do generalizable research to destroy the state, or I may do research that is so generalizable that it is useless. Generalizability is a necessary condition for state funded research, but it is not a sufficient condition. Second, these arguments do not show that non-generalizable research is inappropriate in contexts outside of the state funding – it may or may not be appropriate in other contexts.

Third, and more importantly, these arguments say nothing to the epistemic difficulties that lead people to reject generalizability. Generalizability may still leave us with questions about induction, of the relative power of specific contexts, and of determinism. If a certain normative research aim proves epistemologically incoherent, the stamp of state approval does not somehow make it any less so. There is, however, one important implication: if it indeed turns out that all generalization is impossible, if all knowledge really is of the radically particular, it would be a mistake to conclude that the state should then fund non-generalizable research. Rather, it would imply that the state should not fund any research at all. Once we presuppose that the state should fund research, the question changes. We cease to ask whether the state should prefer generalizable research since that is already a given. Instead, we begin to ask what sort of generalizable research the state should fund given certain contexts and conditions.

Fourth, these arguments do not imply that only experimental methodology is fundable. As some have pointed out, randomized experimental methodology may present problems for external validity — the researcher must often trade experimental control for external applicability.<sup>11</sup> Generalizability is more about sound judgment and plausible inference than it is about statistics and sampling procedures. Under some circumstances, a singular, illustrative example can be just as compelling as a study with randomized samples. If Robespierre finds that one person dies when beheaded by the guillotine, doing a study with randomized samples would not add much. As already mentioned, many theorists have advanced plausible arguments showing that qualitative research, when its descriptions are of sufficient “thickness,” its examples are illustrative, and its participants similar to a larger groups, has its own sense of generalizability.<sup>12</sup> I see no reason why these sorts of qualitative generalizations would not also fall into the scope of state interest — they also are of use in broader practical action, policy making, legal activity, and governance, as well as being open, in some ways, to the democratic ideal of replication. Certain types of research may make more compelling claims to generalizability than others, depending on the context, but the state should not rule out any form of research that can produce convincing generalizations.

Some will say that I have made the notion of generalizability so broad that it meaningless. But I would argue that generalizability *is* a broad concept. Generalizability can be achieved in many ways, through many different methodologies. If my conception of generalizability appears overly broad, it is only because we have been deceived into thinking that generalizability comes from a singular method, or set of methods, rather than from sound judgment and plausible inference.

In summary, I have argued that it is naive to think that the state can be neutral with respect to funding educational research and have given three arguments why the state legitimately aims at generalizability. Until further arguments are given, it does not make much sense to say that the state should fund my research, and also to say that my research has no bearing on generalizable claims. However, I have also argued that the idea of state funding does not seem to presuppose any one methodology. Thus, the idea of the state promoting a normative research aim of generalizability is something most educational researchers should be able to agree to. This is a one more divide among educational researchers that should not exist.<sup>13</sup>

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1. National Research Council, *Scientific Research in Education*, ed. R.J. Shavelson and L. Towne (Washington, DC: National Academy Press, 2002).

2. Elizabeth Adams St. Pierre, “‘Science’ Rejects Postmodernism,” *Educational Researcher* 31, no. 8 (2002): 27.

3. *Ibid.*,” 26.

4. *Ibid.*,” 27.

5. Norman K. Denzin, “Interpretative Interactionism,” in *Beyond Method: Strategies for Social Research*, ed. G. Morgan (Beverly Hills, Calif: Sage, 1983), 133.

6. Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (Newbury Park: Sage Publications, 1985), 124.



7. Janet Ward Schofield, "Increasing the Generalizability of Qualitative Research," in *Qualitative Inquiry in Education: The Continuing Debate*, ed. Elliot W. Eisner and Alan Peshkin (New York: Teachers College Press, 1990), 202.
8. William A. Firestone, "Alternative Arguments for Generalizing from Data as Applied to Qualitative Research," *Educational Researcher* 22, no. 4 (1993): 16-23.
9. John Dewey, *Democracy and Education* (New York: Free Press, 1944), 87.
10. John Dewey, "Renascent Liberalism," in *John Dewey: The Political Writings*, ed. Debra Morris and Ian Shapiro (Indianapolis: Hackett, 1993), 145.
11. See Lee J. Cronbach, *Designing Evaluations of Educational and Social Programs* (San Francisco: Jossey-Bass Publishers, 1982). I should point out that many strategies have been proposed by which controlled experiments can increase their external validity — my statement here is only to caution those who would first think there is some privileged connection between experimental research and relevant findings.
12. Robert Donmoyer, "Generalizability and Single Case Study," in *Qualitative Inquiry in Education: The Continuing Debate*, ed. Elliot W. Eisner and Alan Peshkin (New York: Teachers College Press, 1990), 175-200; Robert E. Stake, *The Art of Case Study Research*. Thousand Oaks, Calif.: Sage, 1995); David Hamilton, "Generalization in the Education Sciences, in *The Study of Schooling: Field Based Methodologies in Education Research*, ed. Popkewitz and R. Tabachnick (New York: Praeger, 1980); and Schofield, "Increasing the Generalizability of Qualitative," 201-32.
- 13 Thanks to the participants of the Stanford-Illinois Summer Institute for their comments (funded by the Spencer Foundation, grant #203300055).