Mixed Methods, Mixed Causes?

Kenneth R. Howe

Abstract
This article investigates the relationship between research methods and conceptions of causation in mixed-methods research. It begins by distinguishing the natural conception of causation from the intentional conception. Natural causation construes causal explanation as establishing and accounting for ordered patterns of human behavior on the model of the natural sciences and is associated with quantitative methods. Intentional causation construes causal explanation as establishing and accounting for ordered patterns of human behavior in terms of norm-governed institutions and practices and is associated with qualitative methods. The article then argues that both conceptions of causation have a role in social research but that the two conceptions do not map on to quantitative versus qualitative methods. Rather the relationship is crisscrossing—quantitative methods can be used to investigate intentional causation and qualitative methods can be used to investigate natural causation—within an overarching framework of mixed-methods interpretivism in which intentional causation is primary.

Keywords
mixed-methods, causation, epistemology

The general idea of mixed-methods social research is no longer under significant challenge. But the degree to which it can be accomplished and the proper role to be played by different methods are, particularly regarding causal explanation. This chapter is a nascent attempt to get clearer on these issues.

Causation, Methods, and Epistemological Paradigms
Two general conceptions of causal explanation underpin social and educational research: the natural conception (N-explanation) and the intentional conception (I-explanation). N-explanation incorporates an associated natural conception of causation (N-causation) that construes causal explanation as establishing and accounting for ordered patterns of human behavior on the model of the natural sciences. N-explanation is typically associated with experimental-quantitative research methods. By contrast, I-explanation incorporates an associated intentional conception of causation (I-causation) that construes causal explanation as establishing and accounting for ordered patterns of human behavior in terms of norm-governed institutions and practices. I-causation is typically associated with interpretative-qualitative research methods.

At the level of epistemological paradigms, N-causation is often identified with positivism, which does embrace a particular version, namely, the regularity (or Humean) conception. In this conception, causation applies to temporally ordered regularities among observations. But this is not the only conception of N-causation. The realist conception of N-causation applies to underlying mechanisms and powers often not manifest solely in terms of temporally ordered regularities among observations (e.g., House, 1991; Maxwell, 2004). Whether the regularity or realist conception provides the best characterization of N-causation is an important philosophical question, but not one that needs to be answered to make the central contrast I make in this chapter between N-causation and I-causation. In a related vein, it is not just positivist epistemology that is problematic vis-à-vis its conception of causation in social research. It is any epistemology that embraces some version of the unity of science such that N-causation is the only permissible conception of causation, whereby causal explanation in social science to be modeled exclusively on causal explanation in natural science such that explaining the behavior of human beings is like explaining the behavior of machines. Or at least the difference is only one of the degree of “noise” and the “error limits” (National Research Council, 2002) involved such that explaining the behavior of humans is like explaining the behavior of somewhat unreliable machines.

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The Interpretive Paradigm and I-Explanation

There is an alternative way to conceive of the explanation of human behavior that sharply distinguishes it from the naturalistic form of explanation that applies to the behavior of machines. The general idea of such an alternative has a long history, important elements of which can be traced as far back as to Aristotle’s conception of *phronesis* (e.g., Flyvbjerg, 2001). With the emergence of the social sciences in the 19th century, Wilhelm Dilthey brought to prominence the distinction between *Gieiteswissenschaften* (social science) and *Naturwissenschaften* (natural science), which, in turn, is associated with the respective distinction between *understanding* and *explanation*. More recent postpositivist philosophy of social science exemplifying the “interpretive turn” (Rabinow & Sullivan, 1987) has replaced *understanding* with *interpretation* and has merged interpretation into its conception of explanation rather than drawing a line between the two. Against the principle of the unity of science, it retains Dilthey’s boundary between the social and natural sciences by replacing or augmenting N-explanation with I-explanation.

In philosophical work, the idea of “intentionality” not only includes intentions to act but also encompasses a much broader domain of mental concepts that have the characteristic of “aboutness.” Beliefs, doubts, and knowledge, for example, are always about something, and fears and worries usually are. Intentional concepts are of particular interest because they go into descriptions of the *actions* people perform, as distinct from the mere *movements* of physical bodies. And often closely related to this, intentional concepts go into explaining why people act as they do. Consider the description, “Derek’s hand went up.” If this were the result of some sort of tic, it would be a movement, not explicable in terms of intentionality—beliefs, desires, intentions, and the like. Now, consider the following description in the context of the classroom activities of a typical American school, “Derek raised his hand in response to Ms. Williams question.” This describes Derek as performing an action because it attributes to him an intention to be recognized by the teacher along with a belief that raising his hand is a way to accomplish this. And if we were to explicate things in this way for someone unfamiliar with the practice of hand raising in American classrooms, it would provide her with an I-explanation of Derek’s behavior.

In general, I-explanations involve unpacking the role of intentionality in social behavior. And this becomes quite complicated when we move away from simple and straightforward examples to a comprehensive framework of causal explanation in the social sciences. This is a task that philosopher John Searle has taken on (1984, 1995) with quite fruitful results.

Searle’s framework incorporates a complex array of concepts, but three are of particular importance: *collective intentionality*, *social facts*, and the *Background* (Searle, 1995). After describing each of these concepts and how they are interwoven to create a comprehensive framework of I-explanation, I will then illustrate the framework with several examples.

When beings cooperate in the pursuit of goals they exhibit *collective intentionality*; and it is not just human beings that do this. Many animals exhibit collective intentionality as well, for example, as in a pride of lions hunting impala. Humans are unique among animals, however, in that via collective intentionality humans construct a special class of *social facts* that, unlike the *brute facts* of the physical world, wouldn’t exist but for the activities of human beings.

Searle’s (1995) favored illustration is money. That money is a human construction that has no existence as a brute fact should be all the more apparent by its decoupling from physical tokens such as gold and silver, and, more recently, by our ability to store and exchange it in cyberspace. Its value and function have nothing to do with the brute fact physical form it takes but is to be found in our collective acceptance of, and behavior in accord with, the rules of monetary exchange.

Money is an *institutional fact*, a special kind of social fact, in which *status functions* are explicitly codified by the formula “X counts as Y in C.” For example, “a five dollar bill (X) counts as [has the status of] money (Y) in the U.S. (C).” Status functions also apply to institutional roles, for example, “A person possessing a valid Colorado teacher’s license and otherwise in good standing (X) is a qualified public school teacher (Y) in the state of Colorado (C).” And “a person legally enrolled in Colorado public school (X) counts as a pupil (Y) in the state of Colorado (C).” Along with the roles of teacher and pupil go certain kinds of powers and responsibilities, which are created by the assignment of the status functions.

Less formalized social facts, like the roles associated with being a member of the Kiwanis Club, for example, function in similar ways to institutional facts in assigning status functions, powers, and responsibilities. According to Searle, no bright line can be drawn between these more informal social facts and institutional facts, and their status relative to practices can change. He suggests it is a matter of the degree of discretion that agents should be afforded while engaging in given practices that determines whether such practices should be institutionalized through the formal codification of rules. An example of dismantling a certain codification of rules and thus increasing individuals’ discretion is illustrated by the elimination of formal institutional status functions associated with being a man versus a woman in marriage law in certain jurisdictions. Moving in the other direction, the powers and responsibilities of teachers are in the process of being further codified via legislated testing and accountability regimens.

That social and institutional facts are underlain by collective intentionality entails that they are human *constructions* in the sense that they would not exist but for the activities of human beings. But, and this is crucial: *Collective intentionality does not entail that agents always or even usually consciously follow the rules governing status functions or even know that such things exist.* Consider pupils raising their hands to be
recognized in class (Y = pupil) or buying themselves milk in the school cafeteria (Y = money).

In some cases, the idea of following rules applies to learning certain activities, such as balancing a bicycle or reading, but only to the early stages of learning such that once a certain level of skill is reached, following rules is no longer necessary and can actually become an impediment to performance. In other cases, such as speaking grammatically, agents often just “catch on” to the rules without at any point consciously appealing to them, using criteria such as what “sounds right.” In each of these cases, we might say that rather the following the rules (consciously or unconsciously), agents are tracking them.

Searle introduces the “Background” to help account for the phenomenon that I’ve just described as tracking the rules. He describes the Background as “the set of nonintentional or preintentional capacities that enable intentional states to function” (p. 129). These capacities include abilities, dispositions, and know-hows, and among the things they do is to enable linguistic and perceptual interpretation, structure motivation, and dispose persons to certain kinds of behavior. It is worth quoting Searle at length on this point:

One develops skills and abilities that are, so to speak, functionally equivalent to the system of rules, without actually containing any representations or internalizations of those rules . . .

There is a parallelism between the functional structure of the Background and the intentional structure of the social phenomena to which the Background capacities relate. That strict parallelism gives the illusion that the person who is able to deal with money, cope with society, and speak a language must be [consciously or] unconsciously following rules (Searle, 1995, p. 142).

In many situations, Searle says, “we just know what to do,” and it’s an unwarranted stretch to say we’re following rules, either consciously or unconsciously (whatever that might mean). Of course, we do consciously follow rules in many situations—the civil law, institutional by-laws, and so forth—but the applicable rules are never self-interpreting and are never exhaustive. So even in cases of consciously following rules we have to exercise the kind of interpretive and creative capacities associated with the Background.

Searle thus unpacks the definition of I-explanation provided at the outset—establishing and accounting for ordered patterns of human behavior in terms of rule-governed institutions and practices—by (a) identifying the social (including institutional) facts assigned by status functions by a given social group and (b) explicating how members of that group (i) follow or (ii) track the associated rules.

Before I turn to the promised illustrative examples of Searle’s framework, a potential problem should be acknowledged and addressed. In particular, under the Searle’s account humans typically have little or no say in what the social facts and rules are, for they are to thrown into the social life circumscribed by these facts and rules where they (often unreflectively) learn to how to act and develop their identities. This is potentially a problem for the idea of intentional causation because if humans are shaped by external forces and not by their own intentions, and are thus products of causes beyond their control, I-explanation, or at least much of it, seems to be subsumable under N-explanation.

There are two kinds of responses to this challenge. First, humans do sometimes play an active role in shaping their lives. This varies significantly, of course, for the degree to which individuals have the opportunity to shape their own lives depends on the kind of political regime they inhabit; their social position; and the dispositions and skills they develop, including dispositions and skills produced by their formal educations. Second, the social shaping of individuals from outside forces is not a species of the mechanical shaping that characterizes how the wind, rain, and snow shape a mountainside. Mechanical accounts of how nature shapes things are nonnormative and must be revised if their predictions are not born out. For example, a mountainside does not behave wrongly or inappropriately or incompetently if it does not erode as predicted. And the geologic formulae, measurements, and so on that led to the inaccurate prediction of how much erosion would occur would have to be revised. By contrast, social shaping is normative and its rules do not have to be revised when violated. An individual who runs a red light, for example, behaves wrongly, but the occurrence of such an event does not invalidate the rule that one must stop for red lights. The rule remains in place, subject to enforcement by moral criticism, fines, and the like.

Illustrative Examples

Consider the following two contrasting examples, beginning with Thomas Kuhn’s account in the Structure of Scientific Revolutions (1962) of the behavior of members of communities of natural scientists. Much of what natural scientists qua natural scientists do is conscious intentional behavior, circumscribed by rules. However, they rarely behave in terms of following explicit rules versus tracking them in terms of their capacity to “know what to do.” Similar to Searle’s account of the codification of social rules, on Kuhn’s account of scientific communities, the focus on codifying (methodological-epistemological) rules is associated with “pre-paradigmatic” and “revolutionary” science, where agreement—collective intentionality—on the fundamental givens has not yet formed or has broken down. Furthermore, although scientists choose to be members of scientific communities rather than being thrown into them, scientists nonetheless catch on to, rather than evaluate and choose, the fundamental givens and associated practices shared by members of the community.
The general point I want to make by appeal to Kuhn’s account of scientific communities is that while I-explanation is fundamental to investigating the domain of human behavior, for which N-explanation is inadequate, the particular conception of it I have provided is clearly not committed to the idea that all or even much human behavior is to be explained in terms of conscious rational intent. Kuhn’s account of scientific communities shows that even the paragon of conscious-intentional-rational activity—science—Involves much of what I have been calling “social shaping” as well as “tracking” the rules. Social shaping does not qualify as conscious, rational, and intended. Tracking the rules sometimes counts as all three, but typically not in the sense of “following” the (explicit) rules.

Now consider the genealogical account of the modern “disciplinary society” in Michel Foucault’s Discipline and Punish (1970). This, too, fits the general I-explanation conception, though there is little danger in Foucault’s case of overemphasizing the role of conscious rational intent. Indeed, because Foucault’s account seems to leave so little “elbow room” (Dennett, 1984) for people to choose how to live their lives, the form of explanation he employs might be construed as N-explanation. But this would be a mistake. Central to Foucault’s analysis are norms that place people on scales from good to bad that are associated with various rules of behavior and that are backed by means of shaping individuals’ identities and capacities. However, this might unfold—and it does so in a markedly sinister way as conceived by Foucault, in terms of pervasive surveillance and “swarming” disciplinary technologies—it is contingent on collective intentionality on which discourse and power relationships depend. Unlike N-explanation, it is normative through-and-through and violations of the rules typically call not for their abandonment but for their enforcement. Where they are abandoned, it is not because they have failed to adequately provide explanations or be borne out by predictions but because they have been adjudged outmoded, oppressive, inefficient, and so on.

Implications for Causal Explanation in Mixed-Methods Research

In a previous article (Howe, 2004), I coined the term mixed-methods experimentalism to refer to the view embraced by the “new methodological orthodoxy” (National Research Council, 2002) that advocates the use of both experimental-quantitative and interpretive-qualitative methods but reserves causal investigations into “what works”—the central question of “scientific” research—for the former. Qualitative-interpretive methods are relegated to the auxiliary roles of description and exploration. The alternative that I advocated is “mixed-methods interpretivism” a view that reverses the epistemological ordering of methods such that interpretivist-qualitative methods are central and experimental-quantitative methods play the auxiliary role of identifying black box patterns of association that require further investigation by qualitative-interpretive methods to obtain a deeper understanding of causation. I will take this as my point of departure and now refine and more fully flesh out mixed-methods interpretivism regarding causal explanation.

Although quantitative methods are often associated with N-causation, the relationship is not one of entailment, for quantitative methods can be used to investigate I-causation. Consistent with my previous characterization of mixed-methods interpretivism, quantitative methods can often be construed as establishing black box associations marking underlying I-causation, for example, as in how the relationship between concentrated poverty and poor educational performance marks the lack of role models and social capital that socially shape the character of the “truly disadvantaged” (Wilson, 1987). However, in addition, quantitative methods can also be used to quite directly investigate I-causation, for example, as in employing a survey to ascertain the reasons people give for voting for or against given policies with the underlying assumption that the beliefs reflected in the responses are I-casually related to their votes (Moses et al., 2010).

On the flipside, qualitative methods can be used to investigate N-causation. For example, physicians interview patients to zero in on an underlying biological process of disease. On a larger scale, public health officials interview persons infected with disease to determine such things as whether disease causing agents are transmitted through the air, saliva, by insects, or sewage.

So, the question of whether an investigation is of N-causation or I-causation does not track the question of whether quantitative or qualitative methods are indicated, for the relationship is crisscrossing. The question of which kind of explanation to pursue has to do, rather, with whether the phenomena to be investigated are natural, as in the shaping of a mountain by the elements and the mechanism of transmission of disease agents, or intentional, as in the shaping of human identities and capacities and the performance of actions in accordance with norm-governed practices.

The further question is whether and, if so, how, these two kinds of causal explanation might be integrated within social research. This is too complicated a question to which to provide an elaborate response here. So, I’ll confine myself to just a few suggestive examples of what this might involve.

Example 1

Consider the discovery that certain inner-city children were ingesting lead as a consequence of eating paint that had chipped off the walls of the tenements in which they lived. There is an established relationship between the ingestion of lead and impaired cognitive performance such that lead-poisoned children tend to perform relatively poorly in school. So, in this case the underlying natural process of the interaction between lead and neural tissue (N-causation) serves as the explanation of the low academic performance of these
children, academic performance being the manifestation of a set of intentional processes.

**Example 2**

Humans possess submerged psychological associations that unconsciously trigger responses to certain situations, which, although not natural processes in the way lead poisoning is, seem to better fit N-causation than I-causation. For example, unbeknownst to them, people tend to behave more kindly when the smell of fresh baked pastry is wafting through the air (described in Appiah, 2008). So, although they may explain their own behavior post hoc in terms of their general disposition to be kind, it turns out that they may simply be unaware of the *quasinatural* springs of their behavior in this situation.

**Example 3**

In a related vein, people’s behavior can be *controlled* or *coerced* by phobias, as they might be by a natural process associated with a paranoia-inducing drug. Claustrophobia seems to be a relatively pure form that affects behavior in a way similar to a chemical imbalance in the brain might, for it seems to have little or nothing to do with following or tracking norms and practices competently or, in this case, incompetently. (Of course, its classification as a *disorder* derives from interpreting it against a background of norms and practices.) How to think about a phenomenon such as musophobia (fear of mice) is less clear. It is gender-linked and thus related to Searle’s status functions, which do figure directly into I-causation. Related to phobias are various kinds of performance anxieties. For example, stage fright parallels claustrophobia in being relatively pure; stereotype threat parallels musophobia in being linked to race.

Each of these examples can be interpreted in terms of Searle’s pre- or nonintentional Background component of his comprehensive framework of I-explanation. Combining this observation with the previous observation regarding how quantitative and qualitative methods map on to and N- and I-causation, or fail to, yields a more nuanced and layered version of mixed-methods interpretivism. That is, mixed methods *crisscross with mixed causes in various and complex ways that are anchored in an overarching I-explanatory framework*. This goes considerably beyond, indeed, conflicts with the original conception that limits N-causation and quantitative-experimental methods to the auxiliary role of revealing black boxes that must then be examined by qualitative-interpretive methods for I-causation.

**Conclusion**

Mixed methods, mixed causes? Yes, but not for the reason that different methods neatly map onto different kinds of causal investigations. To be sure, there is a relatively close association between quantitative methods and N-causation on one hand and qualitative methods and I-causation on the other. But as I illustrated with several examples, of which many more could no doubt be produced, these associations do not always hold.

But there is the prior question of whether the idea of mixed causes per se is plausible. And it is not plausible if the idea of intentional causation is not plausible, which is by no means an uncommon charge. A standard objection to the idea of intentional causation is that it is muddled because the alleged causes and effects are logically related. For example, the effect “Mary bought a book” cannot have as its cause “Mary intended to buy a book” because the description “Mary bought a book” logically assumes that “Mary intended to buy a book.” But one can respond that this explanation, though causal, is trivial and that more complicated intentional explanations grounded in following or tracking norms against a Background in the ways described above are quite informative and do not merely tell us what we already knew.

There is another source of the challenge to intentional causation that is associated more closely with the epistemology of social and educational research. Ludwig Wittgenstein identifies an impulse in the context of epistemological analysis to “sublime” concepts deemed central (1958, section 38). In the same vein, Ian Hacking refers to “elevator” concepts (1999). *Truth and objectivity* provide paradigm cases of what Wittgenstein and Hacking have in mind. Their “natural homes” are historically contingent “language games,” where people typically do not have much trouble operating with them, as in “It’s true that the earth moves” and “It’s an objective fact that Thomas Jefferson owned slaves.” But in epistemological analysis, they are removed from the context of the language games and sublimed or elevated to such lofty heights that we must conclude that *there is no truth* and *there is no objectivity*. And from these heights we can no longer assert, “It’s true that the earth moves” or “It’s an objective fact that Thomas Jefferson owned slaves.”

Something similar has characterized the analysis of causation. In our day-to-day activities, we often do not have all that much trouble with claims like some people switch to light beer because it is less fattening or many conservatives oppose tax hikes because they think it will keep them in office. And in the context of social science, we can claim with some confidence that English working class “lads” often perform poorly in school because they participate in a *culture of resistance* (Willis, 1977) and that academically talented college women often abandon their career aspirations because of getting caught up in the *culture of romance* (Holland & Eisenhart, 1990). But such claims do not measure up to the strict demands so often placed on causation, demands that led Bertrand Russell (1912) to suggest, “the word ‘cause’ is so inextricably bound up with misleading associations as to make its complete extrusion from the philosophical vocabulary desirable” (p. 1). As in *there is no*
causation, Russell also suggested that science could do without the notion of cause and, indeed, did: “The reason why physics has ceased to look for causes is that, in fact, there are no such things” (p. 1).

In social and educational research, the predominant view is not that of Russell. More like what prompts Russell’s skepticism, the predominant view is that establishing causation is exceedingly fraught with uncertainty. And this encourages conflating making a causal inference per se with making a causal inference with a high degree of certainty. This, in turn, helps explain the exclusive reliance on precise measurement, randomization, and powerful quantitative analysis procedures in inferring causation, as in the mixed-methods experimentalism. It also helps explain why more than a few qualitative researchers who themselves accept this conception of causal inference disavow having any interest in it.

Causal inferences are, indeed, uncertain, and inferring I-causation is typically more uncertain than inferring N-causation. But the fixation on precision and certainty is a bad reason to force human behavior into a causal framework that does not fit. As Aristotle famously remarked,

Our treatment will be adequate if we make it as precise as the subject matter allows. The same degree of accuracy should not be demanded in all inquiries any more than in all the products of craftsman. (Aristotle, 1963, p. 287)

Declaration of Conflicting Interests
The author(s) declared no potential conflicts of interest with respect to the authorship and/or publication of this article.

Funding
The author(s) received no financial support for the research and/or authorship of this article.

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