

Science and Dichotomies: A European Outlook

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In the essay “Beyond Scientific vs. Interpretive: Deweyan Inquiry and Educational Research,” Terri Wilson dives into a huge nexus of problems concerning science, non-science, and interpretive research as they are debated in the wake of the Education Sciences Reform Act (ESRA) of 2002 and its call for “scientifically based research” in education. As could be expected, much of the debate has revolved around what it means for research to be scientific. Wilson argues that the Act, subsequent reports, and various criticisms accept and/or proceed on a basic distinction between scientific and nonscientific research. Two things then happen in the essay: the scientific/nonscientific distinction is re-termed the scientific/interpretive distinction, *and* it becomes a dichotomy. Even nonscientific research is guilty of upholding this problematic dichotomy as a basic term of the debate, Wilson argues.

As a possible remedy, Wilson proposes a Deweyan perspective that will problematize the dichotomy. Reconstructing key aspects of Dewey’s concept of inquiry, the paper makes the case that distinctions should not be taken as fixed spheres, and that the ground between the scientific and the interpretive is more complex than currently acknowledged in the debate about scientifically based research in education.

I shall in my response adopt a European view on this American debate (I am by no means intimating that *only* Americans discuss such problems in this way). The reason is that a Continental view of this particular dichotomy may contribute to the American debate in perhaps unexpected ways.

I shall take Wilson’s rendering of the ESR Act, the report “Scientific Research in Education” and the ensuing debate for granted — admittedly not a very scientific approach. But my primary interest is the dichotomy. In general, a dichotomy (from Greek, *dicha*, two, and *temnein*, cut) is defined as the division of things into two basic parts that are considered mutually exclusive, and fundamentally and irreducibly different. Not infrequently, the division is also regarded as exhaustive. A distinction, on the other hand, is a pointing out of differences between or among things, a recognition that one thing is not the other; but without the assumptions of exhaustiveness and mutual exclusiveness implied by the dichotomy. As I understand it, distinctions are compatible with continuous entities, dichotomies are not. Wilson is therefore not entirely justified in treating the scientific/interpretive as a dichotomy. Nonetheless, this is the SRE report’s problem, and also Wilson’s problem, which she uses Dewey to problematize and overcome.

For a European reader, the scientific/interpretive dichotomy immediately brings two things to mind. First, the notion of scientific unity, hotly debated from the 1930s to the 1960s, when the discussion petered out. Second, Wilhelm Dilthey’s famous “Naturwissenschaft/Geisteswissenschaft” (natural science/humanities) dichotomy.¹ I have no doubt that this particular dichotomy lies at the heart of

Wilson's concerns even if she does not mention it. The temporal order of things here is that Dilthey precedes the unity "movement," typically represented by the positivists, by some five decades. In his well-known article "The function of general laws in history," Carl Hempel argues that the "commonly held opinion" that history is concerned with particular events and has no room for general laws is untenable.² He sets out to show that

General laws have quite analogous functions in history and in the natural sciences, that they form an indispensable instrument of historical research, and that they even constitute the common basis of various procedures which are often considered as characteristic of the social in contradistinction to the natural sciences.³

This amounts to a critique of the science/interpretive dichotomy, by way of arguing that history and the social sciences can be subsumed under a model of science provided by the natural sciences. Naturally there are several criteria for what counts as scientific; the criterion used in this particular article is the employment of general laws.

So what is this "commonly held opinion" that Hempel attacks, and where does it come from? Hempel himself did not specifically target his criticism at anyone, but made it general. There may be many sources, but evidently Dilthey is a major one. Dilthey epitomized his views in what actually is a double dichotomy, between two scientific realms and two modes of knowing: "We explain nature, we understand mind."⁴ Explanation (Erklären) is knowledge of general, causal laws concerning natural phenomena, understanding (Verstehen) is knowledge of the mental life of humans.

Before we start unpacking Dilthey's dichotomy, it should be noted that this dichotomy differs from the "American" one in a major respect: it is not a science/nonscience dichotomy. Rather, it is a dichotomy between two types of sciences, two different realms of scientific investigations. "Geisteswissenschaft" is inextricably intertwined with interpretation and "Verstehen," but it is still a *science*. It is just a different kind of science.

The dichotomy is usually treated at a high level of abstraction and without much detail. In fact, it has come to be taken for granted in many research camps, all unification efforts notwithstanding. Wilson's discussion is also conducted at a fairly high level of abstraction. An unpacking of the terms of the dichotomy may therefore be of some interest; to bring the discussion down to earth and to get a more precise picture of what sort of dichotomy it is that we find here. There are nuances to Dilthey's ideas and concepts that are normally obscured, but which deserve to be brought to the fore.

According to Michael Ermarth, Dilthey's notion of Verstehen is, ironically, one of his most misunderstood concepts. Dilthey emphasizes rigor and method in his rendering of Verstehen, something that Ermarth argues is obscured in both existentialist-phenomenological and logical-analytic treatments of it.⁵ For Dilthey, natural science and the humanities are both empirical, objective, factual, and valid; albeit in different ways. So wherein lies the crucial difference? That, it seems, lies in two different forms of experience of reality: internal, lived and external, sensory. The

experience of the natural sciences, he says, is stripped of quality, value, intention, and meaning. I seriously doubt that today's natural scientists would accept this description, and it may indicate that the natural sciences were not Dilthey's strong point. *Verstehen*, on the other hand, should not be assimilated to romantic notions of intuition, subjective feeling, or empathic understanding; a mysterious sort of method that appears more poetic and aesthetic than logical in character. This would clearly make *Verstehen* unscientific and the *Geisteswissenschaften* would not deserve their name. Dilthey insisted on methodical rigor, empirical evidence, and general validity. What is involved in *Verstehen*? A number of different thought operations, such as interpretation, analytical grasping, and coherent seeing. These again involve selection, abstraction, conceptualization, comparison, classification, and analysis.⁶ In passing, it is worth mentioning that Dilthey was opposed to all forms of methodological monism. Methods are tools, they show their usefulness in their results.

Ermarth points out that Dilthey is no stranger to general laws and causality either, and how his views about these matters developed over time. Even his views of explanation change over time. I mention causality specifically because Wilson mentions it as an example of what has come to be regarded as belonging to the scientific side in the "American" debate. I mention laws or law-like connections because they are the focal point of Hempel's discussion. Dilthey's rendering of the "interpretive" side of the dichotomy encompasses them both.

In summary, Dilthey's ideas straddle the usual bifurcation of generalization, quantitative research, and causality (specifically mentioned by Wilson) on the one hand and particularity, qualitative research, and meaning on the other. This is not to suggest that his views have or pose no problems of their own; besides, he sometimes contradicts and disagrees with himself. But, briefly unpacking his notion of *Verstehen* shows, I believe, the importance of bringing general, abstract sweeps down to a more detailed, concrete level to see more clearly what is involved. Sweeping dichotomies allow the "combatants" to reinforce their differences rather than recognize similarities and common interests. With more detail, the alleged dichotomies may be hard to uphold. But is a new kind of unity the solution? Some would have it that there already is a unity, albeit of a different kind than Hempel envisioned. The natural sciences have been forced to acknowledge theory-ladenness, the ubiquitousness of interpretation, and the centrality of the researcher. Or do we need a new discussion of what should count as scientific? As I have indicated, Dilthey may prove inspirational on that score as well. Finally, given his incessant criticism of detached spectator views of our relation to the world, I think he would prove a valuable reinforcement of many, if not all, of Dewey's ideas.

1. Wilhelm Dilthey, *Gesammelte Schriften 1, 5 & 11* (Berlin: Verlag von B.G. Teubner, 1961).

2. Carl Hempel, *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science* (New York: Free Press, 1965).

3. *Ibid.*, 231.

4. Dilthey, *Gesammelte Schriften 5*, 144.

5. Michael Ermarth, *Dilthey: The Critique of Historical Reason* (Chicago: University of Chicago Press, 1978).
6. Dilthey, *Gesammelte Schriften 11*.