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Studying Absences of Knowledge: Difficult Subfield or Basic Sensibility?
Stephen Hilgartner, Cornell University

The articles in this [special issue](#) make a strong case that studying absences of knowledge is important for the field of Science and Technology Studies (STS). As single works and through the literature that they cite, they also illustrate how STS is increasingly framing absences of knowledge as an understudied and especially difficult topic ([Rappert and Bauchspies 2014](#)). I fully support paying more attention to absences of knowledge, and have long argued for doing so (e.g., Hilgartner 2001). However, I am unconvinced that the study of absences should be framed as a specialized "topic" or "area" or that radically new methods are needed to pursue it. Absences are too fundamental to the social aspects of knowledge to be imagined as a mere subfield. Instead, a broad sensibility attuned to the significance of absences should (and in many ways already does) inflect a wide range of STS research.

Absences of knowledge may be understudied, but they are far from unstudied. STS and its precursors and feeder disciplines have long recognized that the erasure, containment and displacement of knowledge are inextricably entangled with its production and spread. Kuhn's (1962) influential account (to take but one path breaking work) argues that scientific revolutions suppress old paradigms, make some questions irrelevant, and erase the past. STS scholars of all theoretical stripes recognize that new knowledge claims and technologies often take hold by displacing old ones. We know that systems of classification bring some things into focus while simultaneously obscuring others (Bowker and Star 1999). We know that the machinery of measurement registers some things even as it transforms others into unquantifiable residuals. We know that boundary work creates non-knowers, non-knowledge, and non-science (Gieryn 1999). We know that expertise is a relational phenomenon, often implicated in silencing other voices (Irwin and Wynne 1996). We know that the process of constructing and spreading knowledge involves a complex interplay of revelation and concealment (Hilgartner 2000). We know that all vantage points are situated and make some things invisible (Haraway 1991). In various ways, historical and social studies of science and technology have been addressing absences of knowledge for at least five decades.

One of the distinctive features of recent work on absences is the explicitness with which people are arguing that it is important to study them. There is much to applaud in these explicit arguments for attending to absences. However, framing the study of absences as unusually difficult may encourage unjustified collective self-doubt. Before getting spooked by conceptual conundrums and methodological hazards, it is useful to ask: To what extent is the study of absences being held back by a paucity of conceptual tools and methods?

The contributions to this special issue shed some light on this question. Croissant's ([2014](#)) review of the many disparate ways that scholars have conceptualized various forms of absences, ignorance, and misinformation offers an extremely helpful account of

the complexity and diversity of the conceptual terrain. However, like Frickel (2014), I doubt that at this point undertaking purely conceptual work will shed much additional light on absences of knowledge. His call for focusing on empirical studies is spot on. But how worried should the dedicated empiricist be about the methodological challenges of "studying what is not there"?

Without denying that attending to absences requires some clever framing of research questions, I would submit that the main methodological issues resemble those encountered in other STS research. And for good reason. The production and selective circulation of knowledge produces both absences and "presences"; indeed, these are often produced through similar—and sometimes simultaneous—processes. Empirical research thus can proceed by examining the dynamics of production/nonproduction *together* in single, integrated projects. Frickel's (2014) contribution to the special issue nicely illustrates how this approach can work: he studied absences of knowledge about toxic contamination in New Orleans by examining the EPA's techniques of knowledge production, showing how specific patterns of data collection simultaneously created "knowledge gaps," which in turn had concrete consequences for residents and activists. In short, while there is always room for methodological innovation, empirical studies need not await the arrival of radically new methods.

The most significant theoretical/methodological problems in studying absences involve issues of symmetry, teleology, and normativity. The study of absences—of the "lack" of knowledge, of *mis*information, of the undone—can easily become a "sociology of error" that documents the corruption and distortion of truth. But if the study of absences comes to be dominated by sociologies of error, this would be an unfortunate retreat from some of the most provocative and productive perspectives that STS has developed. Research on absences can avoid this by sticking to several tried and true methodological principles:

Maintain symmetry. Studies emphasizing absences can be cast as conventional contests between truth and falsehood. A good example is research on climate politics that treats the dominant scientific consensus as equivalent to truth and then examines the production and spread of "misinformation" (e.g., Oreskes 2004, 2011). There is a place for such denunciatory research, of course, in that it sometimes effectively serves political goals. But sociologies of error provide a weak framework for investigating the most fundamental questions or making the deepest critiques. If we want to understand why most climate scientists and many segments of U.S. publics see climate issues so differently, we need a symmetrical analysis that attends to the institutions, discourses, identities, experiences, and social relations that shape the production, contestation, and uptake of knowledge claims. Croissant (2014, 18) is right to worry about reverting to the pre-Bloor days "of explaining 'false beliefs' with sociological explanations and apparently 'true beliefs' with 'just so stories.'" The symmetry principle will remain indispensable for scholars who seek to analyze how social actors evaluate knowledge claims, to explore problems of incommensurability, or to investigate the co-production of knowledge and order in specific contexts (Hilgartner, Miller, and Hagendijk 2015).

Avoid teleology. The study of "undone science" (e.g., research agendas that were ignored or suppressed) can easily slip into framing undone science as should-have-been, would-have-been-done science, with its fate attributed explicitly or implicitly to disruptive forces that knocked things off course. However, studies of undone science can be done in ways that keep such teleological approaches at bay.

Applying the classic methods of controversy studies offers one strategy for accomplishing this. Research can examine how various actors (e.g., scientists, social movements, officials, etc.) promote and oppose specific research directions or identify "gaps" that merit resources. In such work, undone science emerges as research that some actor(s) championed but which nevertheless failed to win "adequate" resources (Frickel et al. 2010). Thus, the actor, not the analyst, defines the should-have-been-done. Another strategy is to show how specific research practices produce gaps in knowledge through their normal operation (Frickel and Vincent 2011). A third is to examine specific contests, such as high-profile legal/technical investigations, in which parties struggle over which questions will be answered and which will be made unanswerable (Hilgartner 2007; Lynch and Bogen 1996). Keeping teleology from entering via the backdoor requires avoiding sociologies of error that, for example, treat a "knowledge gap" as the result of disrupting a natural trajectory, or as a problematic "deficit" even when no actors have identified it as such.

Teleology can also infiltrate studies of absences related to secrecy and containment of knowledge. It is easy to imagine that publication is normal, secrecy is an anomaly, and knowledge naturally spreads in the absence of efforts to contain it. (Think of the slogan "information wants to be free.") But as Callon (1994) points out, making knowledge public, like keeping it secret, requires a tremendous amount of work. Research on the selective distribution of knowledge shows how enclosing and disclosing knowledge often occur in the same act (Hilgartner 2012). Analyzing interaction and the work required to enclose and disclose specific forms of knowledge offers a non-teleological strategy for investigating how selective circulation is effected.

Consider normative complexity. Although in everyday discourse, ignorance is usually framed as bad and knowledge as good, the normativity of knowing and not knowing is more variegated and ambiguous. Knowledge can be dangerous, and secrecy has a complex epistemology and politics (Balmer 2013; Dennis 1994; Rappert 2009). Transparency is important to democracy, but confidential spaces may facilitate open discussion (Jasanoff 1990). Privacy may be crucial to individual rights, but its meaning and limits are, in Gallie's (1958) sense, "essentially contested." Moreover, ignorance at times is paradoxically productive, and deliberate "unknowing" can be crucial to conducting research in some settings. Giessler (2013) nicely shows in his study of public secrets in public health that the capacity to create knowledge sometimes depends—in politically problematic ways—on not knowing certain things. Careful investigation of the normativity of absences, grounded in sensitivity to contradictions and distrust of simple

moral dictums, is the closest thing to a reliable guide that one can hope to enjoy in this domain.

The new, explicit attention to absences of knowledge exemplified in this special issue is encouraging. But what is needed to advance the study of absences empirically is not a suite of new methods, or a revival of the sociology of error, or a conceptual solution to the paradox of examining the nonexistent. Avoiding such distractions will facilitate cultivating a sensibility conducive to integrating attention to absences of knowledge into many aspects of STS.

Contact details: shh6@cornell.edu

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