Fueling Change: Artifacts as Resources and Levers for Institutional Work

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Although artifacts are rarely highlighted in the institutional agenda, it has long been acknowledged that they are important institutional carriers. (Scott 2001: 81; Jepperson 1991). Artifacts, which include objects, technologies and infrastructure, both enable and constrain action because they are representations of institutions (Winner 1980; Orlikowski 1992). Yet the role of artifacts in institutional work has been largely neglected. Most prior studies have attended to the discursive, rhetorical, and relational strategies by which actors effect change within an institutional field, supporting the dominant cognitive conception of institutions as “taken-for-granted scripts, rules, and classifications” (DiMaggio and Powell 1991: 15).

This approach is regrettable because institutions are inextricable from the material realm, and to fully explain their enduring role in society, our theories must account for this interdependency. For example, when institutional work is aimed at ameliorating “grand challenges,” such as poverty or climate change (Eisenhardt, Graebner, and Sonenshein 2016), it is difficult to imagine how such efforts would not involve technology and the built environment. As carriers of institutions, artifacts have the potential to be problematized and targeted during change processes. But because institutional work is conceptualized as a set of symbolic activities, the role of artifacts as potential resources or levers for change has received much less attention.

My study brings to bear the implications of artifacts on institutional work processes. I draw on data from a qualitative study of the biodiesel field in the United States to show how variations in field participants’ development of the biodiesel infrastructure helps to explain the nature and divergence in their approaches to institutional work. Scholars of science and technology have pointed to the particular significance of infrastructure as a category of artifact that has achieved deep taken-for-grantedness and that creates order and routine in social action and practice (Star 1999). For example, the design of roads shapes access to public space, and the standards embedded in information systems shape their communicative affordances (Winner 1980). Because infrastructure is “invisible,” the means by which it shapes relational and cognitive activities is often imperceptible, “becoming visible only upon breakdown” (Star 1999: 82).

In the biodiesel context, the institutional work that accompanied the introduction of a renewable fuel to the energy supply was inextricable from the existing petroleum infrastructure. The field was comprised of two factions of participants: small-scale producers who championed an independent, local, distribution and consumption infrastructure, and commercial producers who advocated for biodiesel’s seamless addition to the existing petroleum infrastructure. My findings show that members of the biodiesel field reacted to the invisibility of infrastructure in line with their institutional objectives: small-scale biodiesel proponents created artifacts to challenge the infrastructure, later performing disruptive institutional work, while the commercial industry attempted to make biodiesel compatible and seamless with the existing petroleum infrastructure, thereby supporting and drawing legitimacy from its persistence and taken-for-grantedness. I develop the concepts of deconstruction and grafting to capture these contrasting approaches to institutional work, and make a case for renewed attention to the role of artifacts – objects, technologies, and infrastructure – in institutional processes.