

Facts in the machine – Systems of Record and the Performance of Sociotechnical Truth (extended abstract)

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Abstract

This is an extended abstract of a paper published in the *Journal of the Association for Information Science* (Hauser, 2023) with additional commentary on the relevance of that work to formal ontology.

Keywords

Truth, Performativity, Social ontology, Conceptual models, Sociotechnical analysis

1. Introduction

Information systems serve as the ‘source of truth’ for much of social reality, from credit scores to eligibility for boarding an airplane to the current time. In contexts of practical consensus, the system makes it so. I label this phenomenon “system-dependent truth”. This is a distinct theoretical challenge to formal ontology, informatics, and information studies, and the production of system-dependent truth is a central aim of many ontologies and the institutional information systems that employ them.

2. Theorizing System-dependent Truth

This paper advances a theory of performative truthmaking that explains system-dependent truth in terms of agency and relation. I introduce the term *systems of record* to denote information systems that contain facts rather than propositions. I develop a suitable performative approach to the phenomenon of system-dependent truth by synthesizing John Searle’s social ontology, an account of truth, facts, and social reality, with Anscombe’s original relational account of brute facts and Karen Barad’s agential realism, an onto-epistemology of human and nonhuman agency. The resulting account of sociotechnical performativity is material-discursive, arepresentational, and is applicable to both human and nonhuman agency. This theoretical innovation enables the rest of the analysis.

Using several specific examples drawn from travel and migration contexts, including the US government’s No Fly List, I show that system-dependent truth arises when an agent *takes* information from a system *as fact* during the performance of sociotechnical truth. The repeated performance of truth using a system of record reinforces and extends the power of one with inscriptive agency within it. In other words, efficient and reliable truthmaking expands the power of factmaking. Modifying a faithfully consulted system of record like the US No Fly List *makes the facts* that will be used to performatively accomplish the system-dependent truth of a traveler’s status as authorized. The effective bounds of a performative context within which truths and facts are held can be described in terms of the illocutionary forces physically enacted around the system. Notable instances of such forces include the justified recourse to violence claimed by governments and the actuation of motors in gates, doors, and even autonomous robotic systems.

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Building from this analysis, I argue that the agencies of truthmaking and factmaking are a distinct form of power and show how the coordination of these agencies constitutes institutional rationalities of potentially global scale. Systems of record, I claim, are critical sites for philosophical studies of information in general and formal and applied ontology in particular.

3. Relevance to Formal and Applied Ontology

Social ontology is an active area of research with broad implications. A critique of Searle's social ontology, including a novel reconciliation with Anscombe and Barad, is a central starting point for the theoretical contributions of this work. The social-ontological conception of institutional rationality presented in this paper, performatively accomplished through sociotechnical agency, is a central aim of the practice of applied ontology in institutional settings.

4. Significance of Theoretical Results

The adoption and consistent use of formal ontologies by institutions, scientific communities, or governmental agencies makes them systems of record within those contexts. These organizations already make truth from informational facts; some, including multiple agencies and offices in the US government alone, have done so for decades at a global scale. What has (or will) the adoption of formal ontology do to the agencies of truthmaking and factmaking such organizations possess?

This question suggests new investigations, not undertaken in the present contribution, of the effects of formal ontology upon the performative processes of social ontology. The central example in the paper, the US No-Fly list, is not evidently an application of formal ontology. Although it is all but certain that relational databases are part of its implementation, the semantic relationships of these databases most likely resemble the vast majority of those employed around the world, hard-coded in disparate, fragile ways via JOIN statements within databases and ETL batch jobs that propagate data across sub-systems. The promise of formal ontology is to replace this diffuse, static expression of agency with a vastly more powerful declaration: that of the lexicon and grammar, with which declarations much be made. In short, formal ontology appears to be aimed at accomplishing second-order performativity, a declarative specification of declarative agency.

The present contribution does not investigate this fascinating overlap but, rather, helps reveal the merit of doing so and provides suitable theoretical tools for undertaking it. My aims are to encourage investigation of system-dependent truth in formal and applied ontology, to offer theoretical tools suitable for doing so, and to facilitate focused dialog across cognate fields to support these efforts.