Legibility and the {Legacy} of {Racialized} {Dispossession} in {Digital} {Agriculture}

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ABSTRACT ORIGINAL

This paper examines the causes and consequences of legibility as an organizing principle in the design of digital agriculture (DA) systems in the United States. Legibility refers to systems of governance that use simplified understandings of a situation to control and direct action upon it. Legibility in digital agriculture systems occurs at the confluence of two traditions of legibility: the data-driven model common in the design of digital systems, and tactics for the control of nature and labor that have developed in the United States since the foundation of the colonies. Our argument draws from (1) a historical analysis of broader patterns of agricultural technology and racialized land dispossession in what is now the United States and (2) empirical fieldwork that examines the adoption and maintenance of digital agriculture systems in rural New York State. We describe the role that legibility historically has played in the development of agricultural systems in the US, and their consequences for who is able to farm and how. This history raises the questions: What is made legible to whom? In that process, what becomes illegible? While legibility promises transparent and environmentally beneficial control, in our fieldwork we find that the demands of legibility are also restructuring the physical landscape, creating additional invisible labor, producing systems that are brittle to real-world conditions on farms, and creating opaque systems that block people from adapting to their circumstances. In reading our fieldwork together with the historical case, we demonstrate the pressures that are shaping the stakes, subject, and objects of legibility in agricultural technology. As more data-driven systems are used for environmental contexts, the CSCW community needs to extend its ways to understand how data-driven systems impact land, labor, and resources.