Sociotechnical Imaginaries of Capacity:

Observing and Explaining Regulatory Processes in Progress in Rapidly Changing Fields

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A common aphorism of social science methodology tells us that you can't study something that hasn't happened. For quantitativists, this is often framed as 'the fundamental problem of causal inference: the unobservability of the counterfactual.' While qualitativists and multi-method scholars have recognized that just because you cannot observe the counterfactual doesn't mean you cannot reason with respect to it and place boundaries on it's likelihood relative to the observed evidence, both methodological arguments are often lost on policymakers who are faced with responding to public problems before all of the evidence is in.

For regulators faced with rapidly changing technology, this challenge becomes standard operating procedure. Indeed, regulators in such fields are unable to observe even the factual, much less the counterfactual. While this capacity challenge is sometimes used to suggest that policymakers should stay out of innovation until the market is settled, well crafted innovation policy can often improve the outcomes for all stakeholders. Since they cannot observe what will happen in the future, regulators and stakeholders are forced to imagine possible futures shaped by the relevant technologies, social structures, and their goals in order to develop the capacity to do their job. They cannot wait for the river of history to flow before they build canals to channel it.

This project explores how those sociotechnical imaginaries are constructed and used by regulators and stakeholders in two rapidly changing technologies: autonomous vehicles (AVs) and CRISPR gene editing. We deploy sociotechnical imaginaries-- "imagined forms of social life and social order that center on the development and fulfillment of innovative scientific and/or technological projects" (Jasanoff NSF# 0724133) -- as both substantive and methodological approach. Based on interviews with key stakeholders involved in the research, development, and regulation of these technologies, we explain how sociotechnical imaginaries frame different substantive understandings of what policies are possible and desirable. Methodologically, we propose that sociotechnical imaginaries are one way to overcome the unobservitivity of the future (factual or counterfactual) because they represent the possible futures as imagined by the actors who will shape the eventual outcome. Our findings suggest that stakeholders and policymakers employ sociotechnical imaginaries as both means and end, both method and substantive rhetoric, in order to develop the capacity to compete for their vision of the future in rapidly changing fields.