



## Theory of and within foresight – “What does a theory of foresight even mean?”



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### ABSTRACT

There has been an argument for a while now that foresight lacks a coherent theoretical basis. The discussion on the theory of foresight calls for a theory, but rarely expounds on what the scope of theorizing is. The discussion has been centered on philosophy and different frameworks for theorizing, but the scope and form of theorizing have not been explored. We contribute to this discussion by examining foresight through the lens of established theory building literature to map what constitutes a theory in the first place and how it applies in foresight. The main guiding question is “What does a theory of foresight mean?”

We first draw on the literature on theory development in social sciences to discuss a framework for theorizing and then examine the scope of theorizing through it. Our main argument is that when we propose developing (a) theory of foresight, we need to separate three levels of analysis: one is foresight as knowledge creating activity, second is foresight as a process and as a social/organizational intervention, and foresight as theorizing about the future of a given socio-technical system.

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## 1. Introduction

There has been an argument for a while now that foresight lacks a coherent theoretical basis (Öner, 2010; Hideg, 2007; Marien, 2010; Mermut et al., 2009). The discussion on theory of foresight calls for a theory, but rarely does it expound what the scope of theorizing is or should be. Some propose that innovation studies or systems theory would provide a foundation for a theory of foresight (Andersen and Andersen, 2012; Saritas, 2013; Samet, 2012). Similarly, some authors propose that the system of thought known as critical futures studies provides a theoretical basis that carries foresight and futures studies (Hideg, 2007).

Others have instead discussed philosophy and different frameworks for theorizing (Öner, 2010; Voros, 2007).

Despite these contributions, serving as reviewers for journals and conferences which deal with foresight leads us, the authors, to note that in the mainstream of foresight the link to theory and thus contributions to scientific knowledge are relatively weak. In this paper, we argue that the difficulty in making progress towards developing a theoretical basis for foresight is in part due to a lack of understanding of what the possible scope of theory or theorizing in and about foresight is. The main guiding question is “What does a theory of foresight mean?”, as posed to M. A. Öner by a reviewer when proposing a paper on theory of foresight (Öner, 2010). To answer this question, we examine foresight through the lens of established theory-building literature in order to determine what constitutes a theory in the first place and how it applies to foresight. The outcome of this analysis is a framework for theorizing in foresight. We conduct this analysis on theorizing mainly from an empirical realist point of view, but

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we will argue that it is also compatible with the whole spectrum that goes from positivist to constructivist epistemologies. In terms of disciplinary scope, the analysis is focused on exploratory “strategic” foresight, but also discusses vision or agenda setting, “backcasting”, foresight.

Our main argument is that proposing a theory of and within foresight requires three separate levels of analysis. One is foresight as a knowledge creating activity; this level is meta-theoretical in the sense that it is not foresight per se, but rather about foresight (its philosophical underpinnings). The second level is foresight as a process leading to a social/organizational intervention, which implies paying special attention to the practical consequences of the foresight activity. Lastly, we propose foresight as theorizing about the future of a given socio-technical system. We further argue that the latter two are the most fruitful for foresight, given that they should establish more precise conditions for how to do foresight, how to measure its effectiveness and how to ground it into context-dependent theories of the future.

The contribution of the paper is an explicit and state-of-the-art framework for theory development in foresight expounded through the three levels of analysis mentioned above, as well as pointing out potentially fruitful directions for further research.

The rest of the paper is organized as follows. The second section discusses what constitutes a theory and how to present one. The third section reflects on the definition of theory as applied to foresight and offers an answer to the question “what does a theory of foresight mean?”, pointing out examples and potentially fruitful new directions. The fourth section concludes the paper with discussions.

## 2. What constitutes a theory — a framework for theory development

Starting from a general definition, a theory is a “systematic ideational structure of broad scope, conceived by the human imagination that encompasses a family of empirical (experiential) laws regarding regularities existing in objects and events, both observed and posited. A scientific theory is a structure suggested by these laws and is devised to explain them in a scientifically rational manner” (The Editors of *Encyclopædia Britannica*, 2013).

In essence a theory establishes a causal link between constructs, predicting their interdependent behavior. Thus, a theory explains phenomena in terms of causal links between constructs through a set of laws or principles of interaction. To this end, a theory needs to include definitions of its embedded constructs, their principles of interaction, descriptions or predictions about expected behavior of the system and associated testable propositions or hypotheses. That is to say that a theory should be both positive and exclusive, i.e. it should be explicit about which phenomena it explains, with which assumption, and which it does not (Gregor and Jones, 2007; Dubin, 1969; K. R. Popper, 1963).

In less general terms, management and business administration research, a field adjacent to foresight, has also paid significant attention to what constitutes a theory. Whetten builds on Dubin when posing four questions that need to be answered (Dubin, 1969; Whetten, 1989; Bacharach, 1989):

- *What* constructs and factors are relevant to explanation of the phenomenon of interest?
- *How* are the constructs related; what are relationships?
- *Why* the constructs are expected to behave as posited by the theory; what are the underlying dynamics of the interaction that manifest in the expected behavior?
- *Who, where, when*; what are the boundaries of the expected interaction; what is expected to happen between the constructs, where and when? What is not supposed to happen? These questions set the geographic, social and temporal limits or scope of a theory and its corresponding applicability.

Sutton and Staw (1995) clarify the matter further by presenting a set of related ideas which are commonly mistaken for a (complete) theory. The list includes important (yet in themselves insufficient) parts of a formalized theory, underlining that while a theory has many components or facets, the heart should be a causal explanation of the phenomena of interest:

- *References are not theory*: Summarizing the existing body of literature without explaining how the literature forms a body of principles that explains the phenomena of interest is not a (contribution to) theory.
- *Data are not theory*: Data describe what has been observed, theory explains why the observations are such as they are.
- *List of variables or constructs are not theory*: Definition of constructs and/or associated variables is a necessary condition for (testing) a theory, but insufficient by themselves.
- *Hypotheses are not theory*: Just as constructs and variables, hypotheses or predictions are part of a theory, but not the theory itself.
- *Diagrams are not theory*: A diagram can be helpful in illustrating causal connections between constructs, but it is not a theory in itself without explanation of why the constructs are connected.

## 3. Theory of and theorizing in foresight

It is not just theory that poses a problem, there is an ongoing discussion about the very nature and definition of foresight (Miles et al., 2008; Sardar, 2010) and its relation to futures studies. We do not intend to enter into this debate here; for the purposes of this paper we adopt a broad definition following Joseph Coates (through Miles et al., 2008, p. 7) that *Foresight is a purposeful process of developing knowledge about the future of a given unit of analysis or a system of actors, which is aimed at action in the form of public or private policy making, strategizing and planning, and that foresight is frequently a participatory, involved and collaborative process*. Stemming from this definition, we propose that foresight is

- 1) An organized social process; an intervention (in an organization),
- 2) to create actionable and domain/context specific information or knowledge about the future.

Now, if we move on to define what theory in foresight is, as a starting point we suggest three different perspectives on that question (c.f. Fig. 1). First, our focus may be on developing a ‘Grand Theory’ of foresight as a knowledge creating activity, which directs us towards the philosophical and methodological

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