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Myths of the future and scenario archetypes

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ABSTRACT

We employ tools from the social cognition and cultural theory literatures to explore images, concerns, expectations, and attitudes towards the future among the general public. An online survey of 950 Australian citizens was conducted to identify five distinct views of the future. These myths of the future are 'social crisis', 'eco-crisis', 'techno-optimism', 'power and economic inequality', and 'social transformation'. We discuss how these myths relate to the scenario archetypes as commonly employed in foresight literature. This analysis reveals how psychological and cognitive considerations may contribute to the literature and could be incorporated in the running of foresight exercises. Among the 5 myths, techno-optimism describes beliefs that science and technology are likely to create innovations that can improve our quality of life. It provides a firm anchor between scenario archetypes, myths of the future, and the STEEP (social, technological, economic, environmental, and political) framework, by holding a similar meaning in all three settings. Our analysis also elucidates how attitudes towards technological development are not value-free and are influenced by beliefs regarding how society and the environment should be managed, and to what extent technology itself can be a positive or negative force in this management.

1. Introduction

One of the purposes of foresighting exercises is to explore the range of possible futures that lie ahead. The potential futures imagined can be numerous, and it is therefore useful to group imagined futures into a fairly small number of future 'archetypes' that represent variations of a common theme (Hunt et al., 2012; Raskin, 2005). For instance, a 'disruptive technological breakthrough' future archetype may describe a family of alternative scenarios about the social and economic consequences of different kinds of technological advances, such as medical, industrial, and scientific breakthroughs, whose consequence on social and economic development can be jointly explored.

There are a number of reasons why this approach is useful. In some cases, a foresighting exercise is specifically intended to examine how a small number of preselected drivers interact, thus limiting the future scenarios that are of interest (Bezold, 2010; Ramirez and Wilkinson, 2013; Raven, in press-a; Amer et al., 2013; Pinnegar et al., 2006; Curry and Schultz, 2009). When the purpose of the foresighting exercise is less clearly defined, there can be an explosion in number of future scenarios. In these cases, a large range of scenarios may be derived from a combination of factors, including future trends (technological, social, political, military, etc.), potential disruptive events (wars, financial crises, pandemics, etc.), alternative political environments (free trade, protectionism, etc.), and many other drivers of change. Grouping these scenarios based on their similarity is a means of coping with an otherwise unmanageable task (Hunt et al., 2012).

The foresighting literature suggests that the *number* of future scenarios appropriate for a futures study is between three and six (Bezold, 2010; Durance and Godet, 2010; De Vries, 2007), often converging to a choice of four. Furthermore, an established tradition (Hunt et al., 2012; Amer et al., 2013; Pinnegar et al., 2006; Curry and Schultz, 2009; Durance and Godet, 2010; Bezold, 2009; Shell International, 1995, 2002; B. Shell International, 2005, 2008; T.F. Company, 2009; Alford et al., 2014; Dator, 1998, 2009a, 2012; Kok et al., 2007) has identified scenario archetypes that are common across different cultures and in a wide range of contexts. Recommendations about *which* set of archetypes should be employed vary considerably, however. Scenario archetypes have typically been identified through accumulated experiences within the discipline of futures studies, and there has been minimal attempts to test these ideas against studies from other disciplines. In this paper, we review and empirically test future archetypes, drawing on theory from the social sciences.

Central to this work is the observation that several archetypes choices discussed in the foresighting and futures study literature closely resemble the typology described in cultural theory (Dake, 1991, 1992; O'Riordan and Jordan, 1999; Price et al., 2014; Steg and Sievers, 2000). We discuss confluences between future scenarios and the 'myths of physical nature' and 'myths of human nature' concepts in Section 3. A

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corollary of this observation is the hypothesis that this resemblance is more than coincidental and originates from common psychological and cognitive roots. More specifically, we expect that there is a set of future archetypes that are (i) culturally shared, and consensually understood; (ii) fairly general and transcend situations, that is, they are not context dependent; and (iii) easily recognized and identifiable in the general public (i.e., outside futures study workshops).

This study is guided by the following research questions: (i) Is there a set of beliefs shared by the general public about possible future scenarios, or 'myths of the future'? In other words, is there a well-defined pattern in the general public's broad opinions about what the future holds? (ii) If so, how many myths of the future emerge, and what is their content? Finally, (iii) what is the relationship between myths of the future and the scenario archetypes commonly discussed in the forecasting literature?

The current study addresses these questions by exploring the underlying structure of commonly held beliefs about the future through a survey of Australian citizens ($n = 950$). Distinct dimensions or myths of the future are identified, which are discussed in relation to common scenarios and archetypes choices in the futures study literature, and myths of physical nature and myths of human nature from the cultural theory literature. We describe the questionnaire used to identify the myths of the future. We conclude by highlighting how this analysis may contribute to the futures study literature and how some of these ideas could be incorporated in future scenario exercises.

2. Scenarios and archetypes

The futures study literature uses a rich vocabulary to express different meanings and interpretations across wide range of applications and purposes. Because the scope of our work is broad and exploratory, we adopt a less nuanced vocabulary. Here we define scenarios in line with other work (Hunt et al., 2012; Raskin, 2005; Bezold, 2010), namely, 'scenarios are plausible, challenging, and relevant stories about how the future might unfold'. Scenario archetypes are defined as a group of futures which are deemed 'similar' according to the purpose of a specific analysis (Hunt et al., 2012).

A number of frameworks are proposed in the foresighting literature to develop future scenarios, and comprise a wide range of scenario choices. The interested reader can gain a good overview of this extensive literature via a few comprehensive review papers (Hunt et al., 2012; Raskin, 2005; Bezold, 2010; Alford et al., 2014; Bezold, 2009; Bootz, 2010).

Table 1 shows a number of archetype choices. Each row includes one set of archetypes, chosen by different futures study practitioners (column 1) as representative of the scenarios they reviewed (ranging from 8 scenarios (Kok et al., 2011) to 160+ (Hunt et al., 2012)). Cumulatively, the archetypes in Table 1 are representative of 1000+ scenarios, from hundreds of future exercises, carried out in different countries, addressing different issues, over several decades. The titles, contents, and brief descriptions of the archetypes seen in Table 1 vary across studies, and no set of archetype is common to all studies. In other words, no general mapping can be found between sets of archetypes from different studies.

To make sense of the existing literature, communalities must be to be found at a higher level, that is, at the level of meta-archetypes. One such set of meta-archetypes is proposed in Table 1, in columns 2-7. These 6 meta-archetypes represent the variety of topics or issues addressed in scenario studies. To keep the terminology simple, we refer to these 6 meta-archetypes as scenario archetypes.

Because most foresighting exercises focus on a choice of just four scenarios, no study detailed in Table 1 contains an archetype set that spans all 6 of the scenario archetypes. It is interesting to note the diverse nature of these scenario archetypes. Two are clearly drivers of change, such as the market dominates and technology drivers scenario archetypes. One reflects an attitude or a concern, namely, local focus. Another describes an outcome: decline. The remaining two scenario archetypes (institutional reforms and deep transformation) could be understood either as a driver or as a process. We will further discuss these differences in Section 3.

Futures study practitioners have tended to use two broad approaches to select their archetype set. The archetype sets in the top of Table 1 (white background) arise from scenarios developed when participants are asked to identify the two most critical and uncertain drivers of change, and then develop scenarios by analyzing the interplay between these drivers (Hunt et al., 2012). An example of this approach is the double uncertainty grid or 2×2 matrix (Bezold, 2010; Ramirez and Wilkinson, 2013; Raven, in press-a; Amer et al., 2013; Pinnegar et al., 2006; Curry and Schultz, 2009; Raven, 2013b), in which the two most important and uncertain issues are used to define the axes of a 2D plane. In the rest of the document, we will refer to this 2D plane as the futures plane.

The archetype sets in the bottom part of Table 1 (gray background) were originally developed via a different approach, which did not involve identifying the most critical and uncertain drivers of change as a starting point ((Bezold, 2009) and (Dator, 1978)). This approach differentiates between what *researchers and experts* vs *laymen* think the future may be. Futures study exercises conducted in different regions of the world (Dator, 1978) suggested that people's views of the future can be captured by 10 visions or images. To highlight the cultural or 'folk' nature of these visions, each was labeled with a line from a song, a movie, or a popular saying (Table 2). These visions were later condensed into archetypes shown at the bottom of Table 1.

The above discussion raises questions as to what makes a 'good' set of archetypes. The foresighting literature has proposed a number of criteria to access the quality of *scenarios* (Piirainen et al., 2012). One study summarized them in terms of plausibility, consistency, utility/relevance, challenge/novelty, and differentiation (T.F. Company, 2009), while others suggest pertinence, coherency, likelihood, importance, and transparency (Durance and Godet, 2010) or emphasize plausibility within a fairly rigorous causal framework (Hendrickson, 2012). Hunt et al. (2012) focus specifically on *archetypes* and require these be sufficiently diverse, clearly defined, internally consistent, and meaningful in terms of the STEEP drivers (social, technological, economic, environmental, and political) and sufficiently robust to be relevant to forecasting exercises carried out at different times.

Additionally, a 'good' choice of archetypes may provide a framework and a starting point for forecasting exercises (Hunt et al., 2012; Alford et al., 2014; Bezold, 2009). Under time constraints, some studies cannot afford the lengthy discussions necessary to allow a team to converge on a small number of scenarios. Drawn-out debate may occur because experts can have strong opinions about what scenarios are of interest, while less experienced participants can find their first encounter with this approach challenging. Choosing a set of pre-defined archetypes can provide a starting point, and a framework to integrate years of applied experience of futures studies. The archetypes can then be tuned to fit the specific problem at hand. This describes a two-way process in which first extensive experience leads experts to identify archetypes from countless scenarios, and then archetypes help practitioners define specific scenarios as needed.

3. Future archetypes and myths of (human) nature

Some insight on the nature of archetypes may be gained by analyzing the futures plane (as discussed in the previous section) often used to visualize scenarios and archetypes. Table 3 details several examples of the 2 axes chosen for futures planes (top, white background rows). These choices are extremely consistent. With one exception (IEA, 2004), the first axis in all cases maps the amount of regulation within possible futures, which range from global, interdependent, cooperative scenarios to those that are regional, autonomous, and uncooperative . With one exception (Raven, 2013b), the second axis maps social values and priorities, ranging from self-interested, individualistic, and materialistic futures to ones that are communitarian and sharing.

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