Overcoming cognitive bias in group decision-making

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Climate change requires systemic understanding of linked cause and effect, remote in both time and space. Studies of human decision-making reveal several shortcomings which limit our ability to make effective decisions under such conditions (Dorner, 1997). This includes, among others; the availability bias, whereby we estimate the future probability of events based on easily remembered experiences from our past (Tversky & Kahneman, 1974), expectation bias, whereby we look for and select data which confirms our pre-existing expectations and ignore or discount data that does not (Rosenthal, 1966), the ambiguity effect, whereby we avoid considering variables for which we have partial or incomplete information (Frisch & Baron, 1988), and groupthink biases, whereby we seek to minimize conflict and reach consensus without critically testing, analyzing, or evaluating ideas (Janis, 1972).

These and many other well documented biases produce a tendency towards "disjointed incrementalism", whereby the most narrow range of alternatives are considered, policies are confined to limited, short term amelioration, decision-makers are risk averse, and there is a general failure to consider side effects and long-term repercussions of inaction (Lindblom, 1959). The result can be poor decision process, poor decision quality, ineffective action, blindness to change, and a reversion to the status quo in the face of even the most grave dangers.

The need for new approaches

The magnitude of the threat posed by issues such as climate change, critical infrastructure failure, and economic volatility require intelligent treatment of these biases if organizations and governments are to be successful in their decision-making. Two methods are proposed. First, the use of scenario planning or scenario thinking processes as a precursor to policy evaluation, and second, the use of web- and game-based media

to encourage greater participation from non-traditional actors in the decision-making process.

Scenario planning is a structured stake holder engagement process designed to address issues which are uncertain, complex and irregular (Wack 1985). In view of such conditions, the "illusion of certainty" (Schwartz 1990) and the "tyranny of the past" are taken to be the biggest impediments to preparation for the challenges ahead (Wilkinson, Heinzen and Van der Elst 2008: 2). One of the most prominent scenario planners, Peter Schwartz from the Global Business Networks, emphasises that scenario planning consists to a large extent in challenging dominant perceptions of "the official future" (ibid.: 59). Employed to combat the "perils of too narrow thinking" (Lohr 2003: 1), scenario techniques involve efforts to incorporate information from the "fringes" in order to weave multiple plausible stories about the future (Schwartz 1991: 69). By consciously employing narrative strategies and story-telling techniques, scenarios present the future as a series of compelling and plausible imaginings. "Scenarios aren't predictions. They are plausible, relevant provocative stories – in the scenario lingo possible futures. " (Ertel and Walton 2006). Despite their essentially imaginative nature, the scenario process is claimed to offer a "knowledgeable sense of risk" in an uncertain world (Schwartz 1990), by walking stake holders through a structured process of uncertainty evaluation and options consideration. This approach has demonstrated repeated effectiveness at combatting cognitive bias in senior management and corporate staff, although empirical measurement of its impacts are still rare. Existing evidence, where available, and significant anecdotal support from practitioners and clients, suggests that the process is effective at opening up a range of options up for discussion, creating a common intellectual framework (or shared mental model) and thereby producing more creative, perceptive and adaptive policies and plans.

An effective compliment to scenario planning may also be found in the use of web- and game-based participation approaches to encourage larger participation in the decision-making process. One of the key challenges to effective decision-making is a wide sensory network to synthesise diverse decision perspectives. Scenario planning addresses this through the integration of various contrary and challenging attitudes, but is often limited to a small group of senior decision-makers. Web- and games-based approaches offer a solution to this challenge. Research has found that games can facilitate increased motivation, promote active and participatory learning, encourage socialization and group problem solving, and facilitate complex negotiation and high level

collective problem solving (Gee, 2004). They do so by creating a shared environment which encourages trial and error, provides immediate feedback, and promotes situated understanding of complex challenges. Massively multiplayer online environments demonstrate how such approaches can be effective at motivating hundreds of thousands of distributed users to socialize, interact, and execute complex challenges in dynamic and uncertain problem contexts. The emerging genre of "alternate reality games" or "augmented reality games" (ARG) connects these virtual communities in real world networks which form around complex intellectual data processing tasks. Levy has christened such emergent problem solving communities one of "collective intelligence" or "distributed problem-solving" (Levy, 1997).

It is urgently necessary to develop social processes that can overcome cognitive bias in group decision-making. Scenario planning combined with the emerging potential of games-based participatory approaches, offers the potential to help us address these challenges. These, and other techniques like them, must be tested, refined, and brought rapidly to scale if we are to produce effective response strategies to climate change before it is too late.

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