Asynchronous Online Foresight Panels: The Case of Wildfire Management

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Abstract

Text-based asynchronous online conferencing involves structured online discussion and deliberation among multiple participants from multiple sites in which there is a delay in interaction between contributors. This method has been widely used for a variety of purposes in higher education and other settings, but has not been commonly used in futures research. This paper describes an asynchronous online foresight panel process. The method is illustrated with the case of a recent foresight panel on the future of wildland fire management.

Keywords: Foresight panel, asynchronous online conferencing, wildfire management

Introduction

Foresight panels – also called expert panels, lookout panels and futures panels – are a widely used method in futures research with a long history of use (Joint Research Centre, 2008). While there are many variations, foresight panels generally involve assembling a group of experts, querying them collectively about the future of a topic related to their expertise, and facilitating in-depth interaction about the topic. A common way to structure the deliberations of panels is to ask members to identify and discuss potential high-impact future developments that may affect the topic of interest, the likelihood and impacts of these developments, and policies to encourage positive developments or to deal with negative impacts (Gordon & Glenn, 2009; Environmental Futures Committee, 1995). Foresight panels are typically conducted through face-to-face interactions in multiple rounds. Examples of reports from foresight panels, ranging from local to global, include Houston-Galveston Area Council (2008), OST (1999), and UNEP (2012).

The use of asynchronous online conferencing to conduct foresight panels is not common in futures research, but this technique has been widely used for a variety of purposes in higher education and other settings for many years (Garrison, 2011). Text-based asynchronous online

conferencing involves structured online discussion and deliberation among multiple participants from multiple sites in which there is a delay in interaction between contributors. This is in contrast to synchronous online conferencing in which participants communicate verbally in "real time." Asynchronous online conferencing is similar in some respects to Delphi conferencing (Linstone & Turoff, 2011), but without anonymity. Key advantages of this approach over traditional approaches to conducting foresight panel include: (1) panel members can join the discussion at any time rather than according to a fixed schedule, making participation more convenient and therefore making it easier to recruit highly qualified and busy panelists, and (2) panelists have time to reflect before posting a message.

Only a few studies that we are aware of have used asynchronous online conferencing to conduct foresight panels (e.g., Olson & Ponatoski, 1998, 1999; Manzi & Zwart, 2013). Unfortunately, these reports provide little or no detail about the method.

This paper describes the process that was developed and applied in a recent foresight panel conducted using asynchronous online conferencing. The topic of interest was wildland fire management futures. The motivation for this topic was that wildfire professionals face unprecedented challenges in the 21st century, including hotter and dryer conditions due to climate change, a massive buildup of biomass (caused by many decades of aggressive fire suppression) that will fuel future fires, a growing number of people and homes in the wildland-urban interface, a wave of invasive species affecting forest health, increasing costs associated with wildfire suppression and management, and the rise of high impact "mega-fires" (Adams, 2013; Moritz et al., 2012). Given these growing challenges, conventional fire management approaches are unlikely to be effective in the future. The goal of this foresight panel was to identify innovative and forward-looking approaches to wildland fire management.

The following sections describe the asynchronous online conferencing process we developed and applied, including selecting panel members, preparing the panel for productive interaction, structuring and carrying out multiple rounds of online discussions, and analyzing the resulting transcripts. A final section summarizes lessons learned about conducting foresight panels in general and the use asynchronous online conferencing to conduct foresight panels.

Selecting Panel Members

Members of foresight panels are typically experts in the topic of interest. The main advantage of enlisting subject area experts is the detailed knowledge they possess about the topic. The main disadvantage is that specialists may be unaware of developments outside their field that may have significant effects in the future. Specialists tend to focus within their field and see what they are trained to see. This phenomenon has been termed the "educated incapacity" of experts with respect to perceiving the future: Experts generally "… know so much about what they know that they are the last to see that future differently" (Weiner & Brown, 2005, p. 2). Panel members with a broad array of outside perspectives and knowledge spanning diverse fields are more likely to see a wider range of possible and plausible futures. Therefore, we selected panelists who were mostly foresight professionals rather than wildfire management and policy experts. A panel dominated by wildfire outsiders fit with our aim to explore a wide range of possible and plausible futures, and several

foresight exercises had already been carried out using insider perspectives from the wildfire management community (e.g., USDA & USDI, 2005; USDA & USDI, 2009; The Brookings Institution, 2008; Global Business Network, 2008).

After generating an initial list of potential panel members, seven leading academic and professional futurists plus two wildfire professionals were selected and recruited to provide their insights and perspectives on wildfire management futures. Table 1 presents a list of the panelists. Our panel of futurists included individuals with diverse perspectives, broad knowledge of numerous fields, and many different disciplinary backgrounds. Bell (1997, p. 182) observed that because futurists examine a wide range of topics and draw on many different fields of knowledge, "… the futurist tends to become a polymath, a generalist, and a universalist."

In addition to the seven top-of-the-profession futurists, two highly regarded wildfire professionals were included on the panel: A social scientist known for her work on the human dimensions of wildland fire, and a fire policy expert. These subject area specialists were included to inform the panel's discussion with their knowledge of wildfire management and policy. The principal investigators and research assistants also participated in the online discussions, with one of the principal investigators serving as the lead moderator.

Table 1. *Foresight Panel Participants*

Futurists:

1. **Peter C. Bishop**: Retired Associate Professor of Strategic Foresight and Director of the graduate program in Futures Studies at the University of Houston; founding board member of the Association of Professional Futurists; President of Strategic Foresight and Development.
2. **Jamais Cascio**: Professional Futurist at OpentheFuture.com; Distinguished Fellow at the Institute for the Future; Senior Fellow at the Institute for Ethics and Emerging Technologies; co-founder WorldChanging.com.
3. **James A. Dator**: Professor and Director of the Hawaii Research Center for Futures Studies, Department of Political Science; former President of the World Futures Studies Federation; co-founder of the Institute for Alternative Futures.
4. **Elizabeth Hand**: Award winning visionary scenario writer; author of fifteen novels and four collections of short stories; faculty member at the Stonecoast MFA Program in Creative Writing at the University of Southern Maine.
5. **Michael Marien**: Former editor of Future Survey, a scanning service published monthly by the World Future Society from 1979-2008; Director of GlobalForesightBooks.org; published a large number of articles in leading futures research journals and other scholarly journals.
6. **Jonathan Peck**: President and Senior Futurist at the Institute for Alternative Futures; futures work spans scientific, economic, political and social changes that can be addressed with an understanding of complex systems dynamics.
7. **David Rejeski**: Director of the Science and Technology Innovation Program at the Woodrow Wilson International Center for Scholars; former head of the Future Studies Unit at the U.S. Environmental Protection Agency.

Wildland fire professionals:

1. **Sarah McCaffrey**: Social scientist with the U.S. Forest Service, Northern Research Station's "People and Their Environments" research unit; internationally recognized expert on the social dynamics of fire management.
2. **John Phipps**: Senior Advisor in the Deputy Chief's Office, State & Private Forestry, U.S. Forest Service; develops policy analysis and options for national fire issues.

Panel Groundwork

After identifying our panel members and securing their participation, we asked our futurists to read a set of nine short background papers intended to quickly familiarize them with wildfire management and policy issues in the United States. This step would obviously not be necessary if our panel consisted only of wildfire experts. The background readings covered the following topics: The history of wildfire policy in the U.S., the Incident Command System (an emergency management system designed to provide standardized structure for managing people and resources during emergency incidents), the growing number of people and homes in the wildland-urban interface, climate change and wildfire, the phenomenon of large and high impact "mega-fires," and insider perspectives on the future of wildfire. The futurists on our panel proved to be quick learners with a strong appetite for more information about the wildfire situation and wildfire management, and they frequently exchanged additional relevant articles and other information via email throughout the panel process.

To jump start the idea-generating process and set up the first round of online discussions, participants were then asked to prepare a short (1 or 2 page) paper or bullet-pointed list stating their initial thoughts about the most significant emerging developments and trends that have potential implications for wildland fire management in the future, drawing broadly from their knowledge and imagination. We encouraged panelists to think broadly about technical innovations, social developments, environmental changes, economic disruptions, changes in government and in the role of the fire management agencies, U.S. developments, global developments, converging developments in different areas, unlikely developments that could blindside the wildfire community, and so on. A spirit of wide-open brainstorming was encouraged, with no idea too wild to hold back. Although they were asked to provide only one or two pages, most of our panelists provided considerably more. Thematic analysis was used to identify the main themes expressed in the initial thought papers. These themes were used to structure the first round discussions.

Three Rounds of Asynchronous Online Conferencing

Panelists interacted online in three separate week-long rounds of structured and moderated discussions, each about two months apart. The web-based conferencing platform used in this study was InVision Power Services, Inc. (http://www.invisionpower.com).

Round 1

Twelve major themes emerged from analysis of the initial thought papers. Each of these themes became a separate discussion thread in the first round of online discussion: Climate Change, Monitoring, Serious Games and Simulations, Bioengineering, New Firefighting Technologies, Insurance, Risk Assessment, Economic and Political Context, Value Change, Fire-Resistant Designs and Materials, Public Education and Engagement, and Policy Tools. Within the online conferencing platform, each topic in Round 1 began with a "conversation starter" which summarized in a few paragraphs the ideas brought up in participants' initial thought papers, posed broad questions related to the topic, and invited participants

to jump into the discussion. Panel members elaborated on their initial thoughts, contributed new ideas, and reacted to and built on each other's ideas related to each of the twelve themes.

Two additional main discussion topics were added by the moderator during the first round. First was "Can the Forest Service Escape Its Social Trap?" A "social trap" is a situation in which the short-term, local incentives and reinforcements guiding behavior are at odds with the long-term, global best interest of society (Platt, 1973; Costanza, 1987). Framing the wildfire situation as a social trap emerged early in the Round 1 discussion and this topic was deemed important enough to merit its own discussion thread. Second, the topic "Preferred and Likely Futures" was added to generate thinking that would lead into the second round.

Round 2

In Round 2, panel members provided reactions to three mini-scenarios developed by the project leaders. This approach is similar to futurist James Dator's alternative futures method in which multiple archetypal images of the future are used to stimulate broad thinking about the future of an organization, community, or subject area (Dator, 2009). The three scenarios described a wide range of plausible social, economic, technological and environmental contexts for wildfire management in the future, including "collapse" (or slow unraveling), "continue" (or business as usual), and "transformation" (a surprisingly positive future). Each scenario is briefly characterized in Table 2, and the complete mini-scenarios are given in (Olson et al., 2015).

The wide range of plausible future contexts for wildfire management given by the scenarios, going well outside of the business-as-usual assumptions typically used in planning, provided a more robust way of thinking about wildfire management futures. For each scenario, participants were instructed to consider the following questions: What significant changes in wildfire management could result from (or would be required by) this scenario? How would wildfire management need to adapt to make the best of this possible future?

In addition to brainstorming about the three scenarios, Round 2 included a wild card discussion forum to discuss possible developments that would be total "game changers" (for better or worse) if they should occur. The inclusion of wild cards is an important aspect of futures thinking because they are the most disruptive type of discontinuous change but they are almost always neglected in traditional planning (Petersen & Steinmueller, 2009). Examples of possible wild cards are runaway climate change which would dramatically increase wildfires and the development of bio- or nano-technology based "virtual fire" that creates the ecological benefits of wildfire without the dangers.

Round 2 also included a "Water Cooler" forum for discussing any other topic that occurred to the panelists and a discussion labeled "Reactions to Michael Marien's Paper." Panelist Michael Marien contributed a thoughtful and broad-ranging paper on wildfire futures following the first round. The moderator created a separate forum for participants to discuss this paper, which generated significant dialogue and ideas that were built upon in Round 3 and became key recommendations of the study.

Table 2. *Brief Characterization of Scenarios.*

Scenario 1

- Slow economic growth and then decline stretching into the foreseeable future
- An increasingly polarized, dysfunctional, ineffective federal government
- A sharp decline in government spending
- Progress in science and technology slowed or derailed in most areas
- Peak oil; the natural gas revolution proves shorter-lived than expected; soaring energy prices; limited financial ability to invest in renewables or nuclear
- Stressed ecosystems, severe water scarcities, some environmental impacts eased by economic decline
- Carbon emissions stay high for a time with growing reliance on tar sands and coal, then decline as growth falters
- Growing social unrest at first; growing local self-sufficiency over time

Scenario 2

- Economic recovery with continuing moderate growth in U.S. and global economies
- Easing of political polarization, some improvement in government functioning
- Cuts to entitlements and other government programs, but increased spending in highest priority areas
- Continuing technological advances, but few major breakthroughs
- Boom in shale gas and oil, significant growth in renewables but not as a proportion of total energy used
- Increasing pollution, environmental damage, resource depletion; more sprawl in the wildland-urban interface
- Accelerating climate change; major increase in wildfires in U.S. and globally
- Slight easing of economic disparities and social tensions

Scenario 3

- Rapid technological progress accelerates growth, but there is less emphasis on consumption, more on investment in energy and resource efficiency, renewable energy, advanced manufacturing, sustainable agriculture
- Revitalized, smaller, and more efficient government; budget cuts in some areas but heavy spending in highest priority areas
- Major breakthroughs in several areas of technology
- Energy system transformation with large investments in energy efficiency, renewable energy, smart grids and energy storage
- Reduced environmental impacts and resource depletion despite growth, but global impacts are still high
- Unprecedented mobilization to deal with climate change
- High receptivity to innovation; adaptive leadership; sense of common purpose animates society (creating a sustainable future, shifting to clean energy, minimizing climate change, achieving a higher quality of life)

Round 3

The third and final round included four discussion threads:

- Actions and Strategies Appropriate in All Three Scenarios
- Does the New Paradigm, Developed in Round 2, "Work" In All Three Scenarios?
- Institutionalizing Foresight in the Wildfire Management Community
- Water Cooler

The first of these topics was motivated by the need to identify robust actions that would be appropriate across a wide range of potential future conditions. Participants were asked to look again at the three scenarios used in Round 2 and discuss fire management ideas that would be suitable given the circumstances of at least two or of all three of the scenarios. This tended to focus thinking on practical, low cost actions, mainly local in nature that would be effective even in the conditions of the collapse / slow unraveling scenario with economic hard times, budgets cut to the bone, and a weak federal government.

The second discussion thread, "Does the New Paradigm 'Work' in All Three Scenarios?" focused on a paradigm shift in wildfire management that first emerged in the initial thought papers and grew throughout the first and second rounds. The essence of this paradigm shift is that the current prevailing "war on fire" paradigm (focusing heavily on fire suppression) will increasingly fail and that we need to embrace a new paradigm of wildfire management that focuses on learning to live with fire and creating fire resilient communities. Panelist John Phipps proposed a "2050 Vision" in Round 2 that was a good articulation of this perspective and was used as an example of the new paradigm in this discussion forum. Participants were asked to be specific about how and why a new fire management paradigm similar to this vision would or would not be viable across all three of the scenarios.

The discussion thread on "Institutionalizing Foresight in the Wildfire Management Community" focused on specific recommendations to the wildfire management community about how to improve their foresight capability, institutionalize foresight as a continuous process, and effectively integrate it with decision making and planning.

Analysis

After the last round, the transcripts of all three rounds of online discussion were analyzed and summarized for the final report. A total of roughly 222 pages of text were generated in all three rounds (round 1: 86 pages, round 2: 49 pages, round 3: 87 pages). The quantity of discussion varied considerably depending on the specific topic, but the overall volume was substantial and the quality of ideas in the discussion was exceptional.

The "open coding" method was used to identify major themes in the text, an approach that is well suited to capture rich themes and uncover unanticipated issues. Briefly, this method involves a process of repeated and careful reading of the text, developing an outline of recurring themes, and cross-referencing each theme back to the original text. See Strauss and Corbin (1998) for details on the open coding method.

For large foresight panels that generate significant amounts of discussion, computer assisted qualitative data analysis software (CAQDAS, pronounced "cactus")[1] such as NVivo or ATLAS.ti could be used to analyze and manage the textual data. In addition, specialized content analysis methods and coding schemes have been developed for the analysis of online conference transcripts (e.g., Rourke et al., 2001; De Wever et al., 2006). The amount to text generated in our foresight panel was small enough to be analyzed without the use of CAQDAS.

Lessons Learned and Conclusions

Several lessons about foresight panels and the use of asynchronous online conferencing to conduct them can be drawn from this project. Most of these lessons are also valid for face-to-face and synchronous online foresight panels as well. First, carrying out a foresight panel made up primarily of futurists rather than subject area experts is a viable and productive approach. The futurists on our panel brought a diversity of fresh and forward-looking perspectives from outside of the fire management community. They introduced ideas that would likely not have been put forward by wildfire professionals. It is often a challenge to get traditional foresight panels with subject area experts to think creatively about the future (Joint Research Centre, 2008), but this was not a problem with our panel. And because our futurists were already familiar with futures techniques like scenarios and wild card brainstorming, the online discussions didn't get bogged down in explanations of these techniques.

Second, futurists need subject area specialists to inform their foresight. The two wildfire professionals on our panel provided invaluable perspectives and knowledge during the online discussions and served as a resource for the other panelists when questions about fire management and policy arose. The findings of our study were shaped and enhanced by the insider knowledge and perspectives of the fire policy experts. Foresight panels are enriched by balancing and blending insider and outsider perspectives.

Third, active and skillful moderation is essential to successfully carry out an asynchronous online foresight panel (Collison et al., 2000; Heuer & King, 2004). The moderator needs to actively manage the discussion by providing instructions to set the discussion parameters, posing questions to clarify points made by participants, adding new topics and questions to a discussion thread, keeping the conversation on track, summarizing the discussion at appropriate points, and identifying emerging themes and common points of agreement and disagreement—a process called "weaving" (McGugan, 2002). At the very beginning of the discussion it is important to establish a constructive culture of online interaction by banning "flaming" (insulting or angry exchanges) and having the moderator and all the other organizers model constructive, friendly interaction, even when disagreements are being expressed. One of the principal investigators in this study had substantial experience moderated asynchronous online conferences over several years involving hundreds of participants.

Fourth, it is important to hold the discussions on an easy to use online conferencing platform. A generation ago most platforms were not very user-friendly and access to private conferencing sites was expensive, but those barriers have disappeared. Many good online conferencing platforms are available at a trivial cost. More sophisticated platforms are also available with features like tools for ranking, voting and polling to gather participants' opinions.

Finally, given careful moderation and an effective conferencing platform, foresight panel members can be actively engaged in asynchronous online conferencing – at least as engaged as in face-to-face or online synchronous foresight panels. Evidence of active engagement in our panel includes the fact that panel members added many sub-topics during the course of each of the three rounds of discussions, and that they frequently interacted via email outside the panel

throughout the process and even well after the last round.

Our experience in this project suggests that it is possible to conduct effective foresight panels using asynchronous online conferencing. While face-to-face interactions clearly have benefits, asynchronous conferencing offers a number of advantages: Travel expenses are avoided; participants from around the world can join in and contribute at any time of the day or night; the convenience and flexibility of participating at any time rather than according to a fixed schedule makes it easier to recruit highly qualified and busy panelists; and participants have time to reflect before posting a message. This last point may be the most compelling advantage of asynchronous online conferencing – its capacity to support reflective interaction, independent of the pressures of time. This feature is especially important in the context of developing high-quality and coherent strategic foresight.

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Notes

1 The CAQDAS Networking Project (http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/) at the University of Surrey provides support and training in the use of many software programs designed to assist qualitative analysis of textual data.

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