Towards community engagement: six steps to expert learning for future scenario development

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Abstract

This paper describes a variety of facilitated exercises for use in collaborative workshops where experts are brought together to create archetypes that feed into the design of alternative scenarios for the future of their area of expertise (e.g., forestry, housing, transportation, food systems and waste). In this case, these workshops were designed to aid in the development of a computer-based sustainability tool (GB-Quest) that supports a larger process of community engagement and dialogue focused on sustainability in the southwestern portion of British Columbia, Canada. Value-focused thinking and a narrative-based structure provided the framework for this dialogue and a template for asking hard questions about the assumptions and biases related to the alternatives. Using examples, this paper outlines and details this process and then suggests possible next steps in this ongoing process.

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1. Introduction

This paper explains a process developed to involve local, expert stakeholders in the design of archetypes. Archetypes are quasi-valid future options, potential alternatives for future scenarios that have been previously identified by researchers as a strain in the history of a particular sector. We asked local experts to evaluate these strains as part of an overall process of gathering and verifying the validity of these
archetypes. The purpose for doing so was the development of broader possible future scenarios by having these experts identify key characteristics and constraints associated with significant potential change (thus the use the term quasi-valid). In the first section below, we provide a brief explanation of the larger effort to which this process belongs, the Georgia Basin Futures Project. We then go through a step-by-step explanation of the workshop method. Drawing on process-watching data and participant evaluations, we also draw attention to the different roles adopted by these local experts in participating in these workshops. In the final section we evaluate how effective this workshop process is in eliciting the desired outcomes. This takes the form of concluding remarks, rather than conclusions, to allow brief reflections on several challenges that were involved in the goals of public involvement, broad issue identification, and model implementation.

2. Georgia Basin Futures Project

The Georgia Basin Futures Project (GBFP) is a five-year research project, based in the Georgia Basin of British Columbia, Canada. The project is interdisciplinary by design and seeks to engage regional partners in an interactive approach to research. The mission statement reflects the general ethos of the project:

This project will explore how to reconcile limits to global carrying capacity with human well being in the Georgia Basin over the next forty years. Our objectives are to increase the level of public and expert understanding of how complex ecological, social and economic systems interact and to discover ways of achieving a sustainable future.

More specifically, the project has two broad goals:

Goal 1:
Through scenario analysis, to understand better the inter-related dynamics of the ecological, economic and social systems in the Georgia Basin, and to identify policy interventions which could enhance human well-being while reducing the adverse environmental effects of human activities.

Goal 2:
To evaluate the role of game-like simulation tools in enhancing public understanding of these dynamics, and of the complex trade-offs involved in sustainability.

The project is organized around a computer-based model known as Georgia Basin (GB)-Quest, which has been developed to represent the interactions among environ-

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mental, economic and human systems in the Georgia Basin bioregion. This interactive computer tool is designed to engage the public in dialogue about possible, desirable, and potentially sustainable future scenarios for the Georgia Basin region. The archetyping initiative was developed to foster the two previously mentioned goals in several ways. First, to engage the public in dialogue about possible desirable futures for the region, it was necessary to ensure that the public was involved in all stages of the GBFP. Second, it encouraged early interest in the relevance of the project by featuring local expertise. Third, and as part of the above need, it ensured that the GB-Quest model included issues and choices relevant to the public.

GB-Quest uses an alternative approach to purely predictive computer models for policy analysis, which rely on marginal changes to existing systems, and on past patterns of behavioural and technological change [9]. Such models are useful for analysis of short term, marginal change, but deep skepticism exists regarding their value for addressing long-term interdisciplinary issues. In response to this tension, GB-Quest combines our understanding of the past with plausible, wide-ranging future scenarios.

Users make choices through an accessible game-like interface, in order to develop their own images of a desirable future for the Georgia Basin region. The model assesses the impacts of these choices, identifies some of the inherent trade-offs in these development pathways, and presents the future outcome to the user. For instance, a scenario that involves a doubling of population, and in which a user chooses to continue present development patterns, would quickly use available urban land and would encroach significantly onto agricultural land. The underlying equations and relationships that construct the model are developed from the published scientific literature on each of the sectors. The choices then represent a ‘possibility space,’ a range within which different options are made available because they are considered valid aspects of future scenarios.

Critical review of the previous version of Quest (Lower Fraser Basin Quest) indicated weaknesses. These weaknesses included a tendency to only consider marginal change and presumptions of continuing current institutional and societal structures. Archetypes counter this outcome by acting as the product of a more open-ended and prospective approach to scenario development, albeit one that still places research-based limits on an almost infinite array of choices. This resulted in a related focus on the identification of a limited set of development pathways and unique archetypes in each sector that the model would represent and with which the user would be presented. The goal was to present the user with structurally distinct choices for each sector that would result in distinctly different futures. For instance, forestry in the region has traditionally been conducted according to an industrial resource extraction model. Critics of forestry practices in British Columbia point to a range of structurally distinct alternatives including silviculture, value added forestry, and conservation.

The task of mapping out these archetypes for each sector was completed in two stages. The first stage involved researchers in a series of sectoral reviews that provided an historical context and identified the key political forces shaping the sector. Emergent archetypes were identified in the conflict between sectoral interests. This
“scoping out” of the properties and conflicts in each of the sectors led to the creation of a matrix of objectives and alternatives. Filling in the matrix showed clearly how well each of the alternatives satisfied identified objectives. This made it possible for facilitators to anticipate some of the directions for the workshop. This pre-workshop matrix also served as the empirical thrust for analyzing the archetypes that were created by the experts in the workshops. In the second stage we involved regional experts in the process of honing the archetypes in order to ensure that a reasonable and representative set was developed. The second stage involved five half-day workshops in the following sectors: housing, forestry, transportation, food systems and waste. These are described in the next section.

3. Workshop design and process

In this section we will be describing the steps followed in the workshops process (see Box 1).

Box 1. Six Steps towards Expert Learning

1. Read story of present day scenario of sector.
2. Brainstorm and create a list of objectives—what are the goals for the future of the sector?
3. Brainstorm and create a list of alternatives—practices of the present and future ... what alternatives are happening in the Georgia Basin and beyond?
4. Brainstorm and create a list of a list of continuums on which to place the alternatives. Participants vote on the two most distinct continuums for the sector. Draw diagram to represent two continuums and four quadrants.
5. Brainstorm and create four future scenarios that fit within the quadrants of the diagram. Where the alternatives would fit on this continuum.
6. Create new stories: participants describe in detail four future scenarios using specific examples from the list of alternatives and objectives created earlier.
As discussed, the goal of the workshops was to extract information from the stakeholders who participated. The objectives for the workshops were as follows:

1. To create a vehicle for dialogue on sustainability in the Georgia Basin.
2. To elaborate alternative scenarios for the future (in each of the sectors).
3. To ask hard questions about the alternatives (critical thinking, examine assumptions and biases related to scenarios).
4. To create stories with a number of different pathways (i.e., fully developed scenarios featuring alternatives).
5. To explore the use of narrative as a tool for critical thinking in community engagement processes.

The original inspiration for our workshop design was the decision-making process known as “value-focused thinking” [4]. Talking about sustainability is ultimately a discussion about values—finding out what is important to the people involved in the discussion, and deciding what they collectively value [5]. The value-focused thinking model explicitly details the values that underscore stakeholder objectives and then uses these values as input for decision-making matrices [6]. Objectives are used as a means to gather the underlying values behind peoples’ choices [7]. For example, if someone identifies the desire to commute by car, value-focused thinking processes asks the question “why is driving a car important to you?” The participant might reveal that they enjoy the privacy of driving in a car as compared to other modes of transport. The underlying value that is driving this choice is related to values about privacy in society. Value-focused thinking draws a clear relationship between values and objectives.

We used the value-focused thinking model to examine participants’ values, to create alternatives and discuss the potential consequences of the realization of such alternatives. The alternatives were pooled together to create archetypes that provided valuable information on issues that should be present in GB-Quest. The value-thinking approach may be broken down into the following steps, which are an amalgamation of a host of influences [1–4,6].

- Outline the specific public policy problem.
- Interview relevant stakeholders about concerns.
- List concerns related to problem as informed by the stakeholders.
- Role play the various stakeholders to further understand issues and underlying objectives.
- Place objectives into a hierarchy of objectives.

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3 Some parts of the paper, especially those sections describing the use of stories, may intimate that we had a transformative goal in mind. We were not trying to change the way expert stakeholders thought about the issues.
Develop a set of objectives in table objectives and alternatives.
Develop a set of performance measures or indicators for objectives.
Characterize a compact set of alternatives.
Determine information needed to compare alternatives.
Explore the key tradeoffs driving the choices between alternatives.
Consider the key issues that need to be communicated to stakeholders and decision-makers.

We began the workshop with introductions and an explanation of the Georgia Basin Futures Project. Step one was the reading of a one-page narrative describing the present state of the sector. The story was intended to set the tone for the rest of the workshop, to reduce conflict and to encourage people to imagine new stories for the future. The facilitator read the story aloud as the participants followed along with a copy. The second step of the workshop involved creating a list of sector specific objectives that participants were working towards in their sector. Many participants groaned at the thought of making another list of objectives, as apparently this is a role they often play in their daily work. We had participants work in pairs with someone they did not know and then we used a “go-around” technique to get a summary. The summarized answers were written on a large piece of chart paper. It was brainstorming in its truest sense—where all ideas are written down and none are criticized. We have listed examples from the housing system workshop indicate the expansive thinking and knowledge-based imagination applied by the participants in coming up with their objectives.

Energy efficient
Affordability and accessibility—meet all socio-economic needs
Local and sustainable energy production (at the individual household scale and at a community-wide scale)
Use local materials
Allow alternative and diverse systems of tenure and management
Encourage diverse mixed-use communities—complete communities
Diverse physical types and use

4 We planned our workshops with the idea of stories in mind. Along with values, we believe that stories will ultimately play a large role in formulating a shared vision of what a sustainable future means. Stories are a handy tool for carrying around a complex set of ideas that define sustainability. Pragmatically speaking, the stories were a practical medium for creating a dialogue in the workshops [6,8]. As Sandercock [10] relates, new stories demand expert knowledge, particularly scientific knowledge fed into a process that promotes understanding. While stories can convey a great deal of information, they still move people to the unaccustomed, yet familiar world of alternative futures. Stories breathe life into ideas.

For example, one story we used explored the aspects of clear-cutting practices, recent job losses, and community pride in the forest industry. In short, empathy was introduced to the group in the recounting of what others experience in their daily lives and the use of a narrative-based structure fostered this imaginative and expansive thinking.
Adaptability in housing with a mix of use (e.g., universal design, live/work)
Compact communities—more efficient land use
Safety
Aesthetics
Ensure housing is resident maintainable
Use appropriate, user-friendly technology
Ensure that housing density and form are appropriate to community and cultural context
Intensification (e.g., infill housing in existing neighbourhoods)
Closed-loop nutrient cycles (food and waste)
Multiple-function infrastructure (roads=greenways=playgrounds)
Linked to transit routes and pedestrian pathways
Close to amenities and services
City viewed as watershed
Local self-sufficiency and justice.

The third step was to create a list of alternative practices for the sector. All ideas were written on the board, including practices happening elsewhere in the world, and ideas that are in the development stage. We again used pairs and then a “go around” to keep steps two and three as efficient as possible. From the housing sector came some provocative and useful suggestions. Notably, it is not that these ideas are brand new, but rather that they capture real possibilities of a sector in the Georgia Basin that is undergoing change.

- Green buildings
- Solar aquatics
- Alternative energy sources (i.e., geothermal, solar, fuel cell technology)
- Co-op housing
- Integration and flexibility of use (i.e., mixed-use neighbourhoods with live/work)
- Kinetic architecture—movable and adaptable housing
- Urban agriculture
- Participatory design
- Participatory budgets for housing delivery
- Diversity of programs that can respond to the exclusive housing market
- Car-free communities and appropriate infrastructure/transportation
- Integrated transportation systems
- Integrated utility delivery
- More incentives (i.e., for users of new, energy efficient technology)
- Intensification of present housing stock
- Nodal development—compact communities
- Contained urban regions with regional decision-making powers
- Sense of belonging ownership
- Inclusive communities
• Support existing and encourage new housing demonstration projects
• Build complete communities on agricultural land (i.e., use ALR lands for development of new communities)
• Allow secondary units in all single-family neighbourhood.

The fourth step was to brainstorm continuums along which the objectives and alternatives could be clustered. All of the groups were very skilled at this kind of work; likely the product of the kind of binary thinking that is prized and therefore regularly employed in the work world. After the group listed a series of continuums, participants were asked to identify specific continuums that could be used to help organize and group the alternatives into scenarios of future development in the sector. The major criterion for this choice was that the two continuums be very distinct. The housing workshop provides a good example of the continuums as a combination of objectives for sustainability and alternative practices (Table 1).

In step five these two continuums were then arranged onto an axis diagram composed of four quadrants (Fig. 1). Paired participants were assigned responsibility for one of the quadrants, and were asked to arrange the alternatives onto the appropriate axis, according to the continuums. In this way, a relationship between practices could be "mapped out" in a rough way; for example, perceived spatial distances were represented. This was difficult work and to achieve our goal we often started with the most extreme properties of each the quadrant, the "outlier" or the one point in the corner that was farthest from the middle point where the four quadrants met. The use of specific examples helped the group imagine what the future scenarios would look like, and became organizing themes of the axis diagram.

Table 1  
Continuum exercise for housing

<table>
<thead>
<tr>
<th>Concern for the environment</th>
<th>Lack of concern for the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing for the market</td>
<td>Housing for social needs</td>
</tr>
<tr>
<td>Minimum population growth</td>
<td>Maximum population growth</td>
</tr>
<tr>
<td>Segregated uses</td>
<td>Integrated uses</td>
</tr>
<tr>
<td>The “mosaic”</td>
<td>The “melting pot”</td>
</tr>
<tr>
<td>Personal privacy</td>
<td>Collective commitment</td>
</tr>
<tr>
<td>Self-sufficient housing</td>
<td>Dependent housing</td>
</tr>
<tr>
<td>Single-use</td>
<td>Mixed-use</td>
</tr>
<tr>
<td>Maintain status quo</td>
<td>Change</td>
</tr>
<tr>
<td>Sprawled new development</td>
<td>Intensification of existing stock (infill)</td>
</tr>
<tr>
<td>Automobile dependent</td>
<td>Alternative transportation</td>
</tr>
<tr>
<td>Car deification</td>
<td>No car</td>
</tr>
<tr>
<td>Individual</td>
<td>Collective</td>
</tr>
<tr>
<td>Convenience</td>
<td>Collective values</td>
</tr>
<tr>
<td>Personal freedom</td>
<td>Social contract</td>
</tr>
</tbody>
</table>
### LOW DENSITY

<table>
<thead>
<tr>
<th>SUBURBIA</th>
<th>SELF-SUFFICIENT SMALL TOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW-DENSITY, SINGLE-USE</td>
<td>CO-OPERATIVE OWNERSHIP</td>
</tr>
<tr>
<td>COMMUNITY/SEGREGATION OF USES</td>
<td>DIVERSE COMMUNITY</td>
</tr>
<tr>
<td>SINGLE FAMILY HOUSING</td>
<td>MIXED-USE HOUSING UNITS (LIVE/WORK)</td>
</tr>
<tr>
<td>CAR-ORIENTED DEVELOPMENT</td>
<td>LOW-DENSITY, MIXED-USE, INTEGRATED</td>
</tr>
<tr>
<td>CONVENTIONAL FINANCING PROGRAMS/ LIMITED</td>
<td>DEMONSTRATION PROJECTS WITH PARTICIPATORY BUDGETING</td>
</tr>
<tr>
<td>SOCIAL HOUSING</td>
<td>INTEGRATED TRANSIT</td>
</tr>
<tr>
<td>CONVENTIONAL DEVELOPMENT PRACTICES</td>
<td>GREEN BUILDINGS USE</td>
</tr>
<tr>
<td>PRIVATE OWNERSHIP</td>
<td>LOCAL ENERGY GENERATION AND WASTE MANAGEMENT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRIVATE PROPERTY</th>
<th>COMMUNAL PROPERTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMITED MIXTURE OF USES</td>
<td>HIGH-DENSITY, COMPACT</td>
</tr>
<tr>
<td>HIGH-DENSITY, RESIDENTIAL COMMUNITY</td>
<td>MIXED-USE COMMUNITY INTENSIFICATION PROJECT</td>
</tr>
<tr>
<td>HIGH-RISE BUILDINGS</td>
<td>MIXED-USE HOUSING UNITS (LIVE/WORK)</td>
</tr>
<tr>
<td>CONVENTIONAL BUILDING PRACTICES</td>
<td>GREEN BUILDINGS USING LOCAL ENERGY GENERATION AND WASTE</td>
</tr>
<tr>
<td>INTEGRATED TRANSIT</td>
<td>MANAGEMENT</td>
</tr>
<tr>
<td>PRIVATE OWNERSHIP</td>
<td>CO-OPERATIVE OWNERSHIP, CO-HOUSING</td>
</tr>
<tr>
<td>EXECUTIVE HIGH-RISE LIVING</td>
<td>SUSTAINABLE, COMMUNAL LIVING</td>
</tr>
</tbody>
</table>

### HIGH DENSITY

Fig. 1. Four quadrants for housing.
In step six, participants were then asked to describe in detail each of the four quadrants, give examples and describe possible future scenarios for each. The final part of the workshop also involved discussing the quadrants as stories or what we call archetypes. Each group was responsible for telling the story of a quadrant and for describing a possible future scenario using the quadrant.

4. Workshop evaluation

We evaluated our process at a number of levels: participation, reaction of participants, learning and usefulness of knowledge gained. This section describes the findings.

The process used facilitation to apply and lift constraints according to the specific objectives of the individual stages, like fostering expansive thinking, checking the possibility of a few people dominating and pushing the participants in the latter stages of the workshop when they were asked to attach concrete details on the practices. We believe that orchestrating things in the way that we did was successful, one of the biggest changes in the group dynamic followed the “one minute left” command during group activities. We generally heard a much bigger buzz following this command, suggesting an increased level of activity. There was an underlying interest in the workshop process itself, the motivation being the desire to have some ownership over the process. One participant “learned a lot of from others,” and another spoke “finding clarity and a new framework for ideas.” More specific results are available because we evaluated the workshop process at the three levels using specific questions.

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5 Giving previews at regular intervals, a kind of a “coming attractions” was also really useful to completing tasks. The GB-QUEST model was an important legitimating device.
4.1. Process-watching

Box 2. Questions Posed to Study Workshop Process

1. Who spoke the most/least?
2. When did people interrupt before others had finished?
3. What questions/arguments were never answered?
4. How did the general atmosphere change during the session?
5. What other solutions were overlooked?
6. Did speakers maintain eye contact?
7. Did you feel each person was listening?
8. Were people encouraged to air their views?
9. How much manipulation was going on?
10. Did joking help or hinder the communication?
11. What signs of frustration, boredom, enthusiasm, etc. did you see?
12. Which members had high influence and which low? Who kept the discussion on the rails? How?
13. Which actions helped the TASK (the problem being worked on) and which helped the PROCESS (the way it was being tackled)?
14. How were silences interpreted?
15. Who talks/doesn’t talk to whom?
16. How were decisions made?
17. Were any issues sidestepped?
18. How did participants respond to narrative portions of the meetings?
19. Did participants follow instructions and if not, why not?
20. Did the workshops run into language/terminology problems? For instance, did participants share the same meaning for common terms? If not, did that difference help or hinder the meetings?
21. Did people appear to work hard (i.e., were they challenged or was the meeting even stressful at times)?
22. What were the most common “complaints” from participants? (e.g., too directive)

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6 The specific focus here was on the kind of contributions that are made and by whom, including how participants and the use of language put these forward generally. VanMents (11, p. 89) was a major source of the questions.
4.2. Self-assessment questionnaire

Box 3. Self-Assessment Questionnaire

1. Did the process here call upon an adequate amount of your insight? Why or why not?
2. Did the process here stimulate the creation of new ideas? Why or why not?
3. Did the process here foster a collaborative learning environment? Why or why not?
4. Did the process allow you to LISTEN to other’s views? Why or why not?
5. Did the story at the beginning of the workshop provide a useful context for the workshop? Why or why not?
6. Write down anything else that you wish us to know about the process. For example, what worked for you, what didn’t work for you? What other techniques might be applied in the future? Did you learn anything?

Three criteria were used to evaluate each workshop, and each operated on a different time scale. The first, detailed below, was the quality of the participation in the workshop itself. The second was the frequency of involvement among participants in the project over time. The third was the degree of input into the model-game itself and this process continues to this day.

Four trends in the workshops are noteworthy. The first identifiable pattern was that there were mixed reactions to the use of a story as a platform and context for the workshop. The second discernible pattern was the desire for participants to list their own values, which will drive the process. The third concerns the paternalistic tendencies of some participants. The fourth overarching observation was more controversial, involving the assertion that participants who bring broad-based expertise and experience are more valuable.

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7 An evaluation of the workshop experience by its participants was conducted using the following open-ended questions.

8 One participant, attending in his capacity as the executive director of an environmental non-government organization (ENGO) in food systems, asked the project to manage a food systems clearinghouse for action tools that connect farmers to consumers. Another community development oriented ENGO has sought a more formal working arrangement with the project. We are considering the creation of tools for coupling people who play GB-Quest with Environmental Non-Government Organizations.
5. Stories

The stories summarized large amounts of information in offering strains in the history of each of the sectors (see Appendix 1 for the transportation narrative). Researchers were instructed to create the first draft of the story. The stories were then edited, sometimes adding what some participants saw as a provocative hook. The story elicited mixed reactions. The fact that people did not know whether to read along or listen (they usually did a bit of both) suggests that stories are not the typical “ice-breaker” or context setter for an expert workshop. A few claimed the story was “fun and got the creative juices flowing” and “a good communication tool.” For others, there is something almost threatening about the introduction of stories into a workshop filled with experts. A few participants felt inclined to correct or comment on the story while it was being read. One participant complained that, “I found the paradigm so in conflict with my knowledge and experience that it was not especially useful.” The source of the threat seemed to be the fact that complex sectors are boiled down to one participant referred to as “a very simplistic scenario” that “did not fit any of our specific experiences or current communities.” Another claimed that it [the story] was ignorant and was a stereotype that did not invite much discussion. The story was based on the research into the sector that was done in advance of the workshops.

6. Objectives

The “objectives” step was absolutely crucial to the process. It asked participants what matters; participants wanted to ensure that everyone else knows where they are coming from and what they cared about. Participants balked when they did not get a chance to talk to one another and to set out their positions with regard to the topic. Participants also wanted to make friends and were offering a bit of who they are as an initial part of the exchange that guides true dialogue. Participants were forthcoming; no one played it “close to the vest,” and this sharing established a great deal of momentum. The most common “complaints” from participants was cynicism by others. Comments akin to “we have seen it all before” means that workshops design must provide time and space for commentary. Aside from each participants’ management of others’ perception of them, they seemed absorbed by the process.

7. Paternalism

The one trend that was identified by both the process-watching work and the self-assessment questionnaire was one that could be called “paternalistic.” There were some experts in attendance who saw themselves as instructors more than participants. These “voices of reason” tended to stake out a common sense position and place others outside it. Body language and other cues indicated that these figures abided, but did not take seriously, some of the naïve “others” who presented more idealistic
notions of sustainability. These experts chose one of two strategies: either accepting other opinions in a bemused manner or deciding that they are correct and aggressively refuting other ideas. To give an example, one participant condescendingly explained that wilderness preservation does not mean representing natural systems in a static way but rather it meant appreciating the inevitable changes in the systems. Another pointed out that mountains are insurmountable barriers to some kinds of change. In both cases, the voice belonged to influential senior members of a sector who are largely responsible for making change a possibility. The problem is that they sanctioned the limits of “what it was possible to think,” in a workshop that was designed to foster expansive thinking.

Not surprisingly, it was participants with activist orientations who reacted most strongly against this tendency. These individuals were also knowledgeable, outgoing, outspoken and experienced, often with rich academic and professional backgrounds and, in some cases, entrepreneurial leanings. These individuals tended to push back against efforts to circumscribe the discussion, as they were generally open to discussing new ideas and possibilities. The one drawback that was witnessed about activist-based expertise was its being easily directed to areas that are much more simplistic and much less useful, i.e., “consumer bashing.” Obviously some analysis of current conditions is necessary but digressions into facile critiques can be a problem, and these critiques did seem counter-productive. One such person was so intent on supplying the rest of the group with examples of alternative practices that protocol was ignored. It was clear that being seen as knowledgeable was important.

8. Broad-based backgrounds

Some participants’ views clearly had more influence than other participants did. As one participant remarked “there were some voices that had more power and authority than others.” Their having the ability to guide the discussion indicated greater authority for certain figures. The result was that, for those not identified as influential, there was a need to “get out” the facts that they knew in a hurry. The most obvious result was that silences were practically non-existent and when they occurred they were interpreted the way our culture demands; people quickly added more information and/or paraphrased what was just said in the hopes that clarity is improved. Culturally, we are uncomfortable with silence, and in workshops experts likely see it as a threatening indication of a lack of knowledge. Any break in the conversation led us to ask if there were any questions and this what probably was a mistake. Another major difference between those participants with more experience and relative newcomers was that the former tended to have much more to offer because of a combined practioner/activist/theorist background. Some of these folks were very informed and carried a great deal of the conversation at times. They were comfortable in a setting and process that honoured the future.
9. Concluding remarks

To repeat, this is not a results section designed to illustrate all of the outcomes of the process. Doing so, in our estimation, would place less emphasis on the evaluation of the process. A separate paper on the results themselves is necessary in order to go through all of the dimensions identified in detail, and it is forthcoming.

This paper expands the thinking about scenario development by offering a process to involve local experts in developing archetypes that draw upon research, narrative, and other techniques to expand thinking. We were especially excited to use storytelling as a starting point for discussion but quickly learned that it was difficult to make this transition. When people who are considered experts, scientists and policy makers are brought in to a meeting about the future they assume that facts and details are the only thing on the agenda. Eventually the process drew upon the stories in the sense of fostering expansive thinking leading to the generation of a wide range of scenarios that helped the computer modeling team in creating choices for the users of GB-Quest. As facilitators, we gained insight into the complexity of expert workshops, especially the difficulty of facilitating large numbers of experts through a process not designed by the group. We found that by having people represent areas of a sector they often spent a large amount of the time validating their positions as opposed to moving towards shared interests.

As mentioned, the computer modeling team used the data and ideas produced in these workshops to inform the modeling process. Doing so presented several challenges; some of these obstacles could have been rectified by a slightly different workshop design. First, students and investigators with appropriate skills should have been identified and included from the earliest stages. Second, the vast range of possible “broadening” directions had to be scoped and prioritized in the workshop itself. Third, appropriate groups and individuals from academic, governmental and private settings had to be identified and recruited as participants in the workshop so as to more easily and efficiently facilitate the process of identifying and prioritizing archetypes and characteristics. Fourth, case studies involving key archetypes and characteristics had to be identified as either part of, or as a follow up to, the workshop in order to provide quantitative or qualitative support for modeling choices and outcomes. Finally, these relationships needed to be integrated into the existing modeling structures.

Several of these challenges were subsequently met, but others met significant obstacles. More specifically, identifying students and investigators with appropriate backgrounds who were available was difficult on a short time scale. However, this weakness was in part overcome by the flexibility and skills of the students involved in GBFP. In fact, a real strength of the approach used was the conceptual and practical advances that resulted from pairing modeling students and community engagement students for each integrated sectoral analysis. This integrated approach also provided valuable experience for the students.

As mentioned, scoping papers were developed that provided historical background on several key sectors, and suggested possible characteristics for archetype development. Student experience in the sectors was probably the key factor affecting quality
of the papers. Several were quite comprehensive. The archetype teams were generally successful at obtaining assistance through component research associates, project investigators, and project partners. The GBFP contact network proved useful both in providing background and as a resource for the workshop process for identifying and prioritizing archetypes and characteristics. Reports on each workshop were also compiled.

Little progress was made on identifying case studies involving the characteristics and archetypes identified in the workshops. Two primary causes were (1) a tendency for archetypes to be theoretically and/or ideologically grounded, with few examples in practice, and (2) the departure from the project of several students following the workshops, leaving the archetype exercise incomplete. Consequently, few archetype relationships have been integrated into the existing modeling structure to date.

In sum: few important lessons were learned from this innovative exercise. The structure of the exercise was sound, and the cross-component integrated approach strengthened both the project and provided valuable experience for the students involved. However, several areas could be improved, including the need early in the exercise for a clearer definition of archetypes, an outline of the full process, and guidance in the development of useful archetypes that could realistically be explored and included in the model structure.

Appendix 1. Transportation Narrative

As the plane dropped below the clouds to reveal the Fraser Valley, Miss X realized that much had changed since her last visit to British Columbia. The valley has a busy look about it. Ferries are chugging across the Straight to Vancouver Island, cars and trucks are moving slowly down the highway, and a few trains can be seen rolling down the tracks. However, the most dramatic change is the houses; a never-ending subtopia. For miles and miles up the valley long snaking roads are bordered by neat and tidy single-family homes.

Once at the airport, it is clear that Vancouver is a major hub. Flight calls to far-flung locations are continuously heard over the public announcement system. After collecting her luggage, Miss X walks out into the open air. Being in a budget, Miss X marches past the limousine and taxi stands down to the bus stop to catch a ride into town. After waiting half an hour, she boards the bus, pays her fare and sits down (there are plenty of seats as it is the middle of the day and the bus is half-empty).

A few minutes later, the bus pulls out of the airport and begins its journey into town. Unfortunately, the bus almost immediately comes to a halt. Workmen are fixing the aging road surface and traffic is blocking the bridge. This gives Miss X plenty of time to take in her surroundings. Perched up high in the bus, she can see a sea of cars. Most of which have only one frustrated occupant gripping a cup of coffee. In the distance, she can just make out Mount Baker. A haze is obscuring her view of the magnificent peak. “It must be the pollution blocking my view,” she
thinks to herself. Soon, the bus moves on, houses, shops and gas stations replace her view of Mount Baker.

As the bus winds its way down the street, Miss X notices numerous cars crawling along the street looking for parking spaces. The caffeine highs from the first coffee of the day have by now subsided; the drivers are looking more and more harried. On the other side of the bus, trucks are barreling down the road. They are carrying groceries, clothes, building materials, car parts and numerous other goods. The truck drivers look less stressed than the car drivers do, as they have had the forethought to carry a thermos of coffee.

Miss X stays in downtown Vancouver a week. Every day she notices the hoards of commuters arriving at workplaces throughout the city. Some use rapid transit, others buses, most arrive at work in cars. The roads are very busy. On the radio, she hears that there is a sailing wait to catch the ferry over to Vancouver Island. She thinks how patient everyone must be here.

A week later, coasting down the airport runway Miss X has time to ponder what she has seen. Clearly, the ever-increasing population in the region is greatly affecting the movement of people and goods. The car culture has had significant affects on the development pattern (sprawl), land use, air quality and overall quality of life in the region. Miss X is happy to be returning to Tuktoyaktuk where there is always a parking space for her snowmobile.

References