

# Understanding Deliberativeness: Bridging Theory and Practice

**Janette Hartz-Karp**

## **Abstract**

Principles of deliberation developed by theorists are seldom tempered by the experience practitioners in the field have acquired. Drawing on several case studies of deliberative democratic initiatives in Western Australia, this paper seeks to highlight areas where theory and practice meet and diverge. Theoretical concepts of egalitarian processes, reasoned deliberation, consensus/common ground, and influence provide the framework for discussion. The paper offers lessons learned about deliberation, representation, and influence using different deliberative techniques. Concomitantly, it poses questions requiring further research.

## Understanding Deliberativeness: Bridging Theory and Practice

**Janette Hartz-Karp**

Community consultation—often regulated in Australia, particularly in the areas of planning and the environment—has fallen into disrepute, maligned because it is a ‘DEAD’ (Decide, Educate, Announce, and Defend) process.\* The powerful local lobby groups that blossomed in order to influence DEAD policies have hastened its demise. In response, the government has re-badged its efforts under the new term, ‘Community Engagement’. The public, however, has viewed community engagement as old wine in a new bottle: as opportunities for citizens to listen to official rationales for policy changes without much chance of actually influencing policy-making process.

But there have been some notable efforts to empower members of the public. Several years ago, in the state of Western Australia, the Minister for Planning and Infrastructure decided she would pioneer deliberative democracy, and employed the author as a consultant to find innovative ways to reach joint decision-making with the community, industry and government. Each initiative was based upon extending community engagement practice along three key dimensions – representation/inclusion, deliberativeness and influence.<sup>1</sup>

In describing what might constitute ideal deliberation, early theorists emphasized the principles of consensus and the common good, rationality, and equality.<sup>2</sup> These principles have been criticised and modified by more recent theorists, who discuss broader principles of egalitarian processes (including equity of access and participatory discourse), reasoned deliberation (that allows for emotion), consensus (more tractable than absolute) that secures legitimacy, particularly when self-interest is overtaken by the common good (providing that, too, is contestable), with process outcomes having influence.<sup>3</sup> I elaborate these concepts below.

---

\* This concept is part of general discourse in Western Australia. It has been formally described in Roseland, M. 2000. ‘Sustainable Community Development: Integrating environmental, economic and social objectives’, *Progress in Planning*, 54: 73-132.

### Consensus/the Common Good

The concept of ‘consensus’ entered political thought through Cicero, who wrote of the *consensus juris*, or agreement in judgement, which he considered a necessary condition for the emergence and continued existence of a republic.<sup>4</sup> It is a mistake, however, to equate consensus with agreement, understood as the identity or unanimity of considered opinion. Consensus can exist despite conflicting interests, views, or judgements.<sup>5</sup> There are multiple paths of argument that lead to a similar conclusion,<sup>\*</sup> but historically one of the most important moves was the distinction Rousseau drew between the ‘general will’ and the will of all’.<sup>6</sup> The ‘general will’ is the desire (choice, preference, judgement, decision, intention, etc.) of a collective entity: a group. The ‘will of all’ is the net result of adding together the desires, etc. of individuals.

A difficulty, of course, is the question of how the ‘will’ of a group is to be ascertained, if not by some form of aggregation (e.g., voting). Indeed, it is no easy matter even to conceive how it would differ from the sum of individual desires. How, exactly, would a group form a desire, and how would it be expressed? Moreover, theories of social (collective) choice thus far have failed to derive a group ‘desire’ from individual desires. (The economist, Kenneth Arrow, was awarded a Nobel Prize for his work on social choice theory, and in particular for demonstrating that, on certain reasonable assumptions, a social choice in fact cannot be derived from individual choices).

The usual (democratic) response to this conundrum is to emphasise the paramount importance of democratic *process*. If the process is legitimate, then the outcome carries the authority of the group’s will even though there are expressions of individual dissent. The contemporary debate about ‘deliberative democracy’ is not (despite some views to the contrary) about the *legitimacy* of existing forms of democratic process, but about the *adequacy* of those forms in comparison to a process that exhibits the (variously proposed) characteristics of deliberativeness. Thus deliberative democratic process often is said to require (among other things) that it be inclusive (of groups, interests, ‘voices’, etc.), that participants be ‘representative’, ‘informed’, and ‘uncoerced,’ and that discourse be ‘open’ and ‘reflective’.<sup>7</sup> An additional requirement might be that self-interests be

---

<sup>\*</sup> See, for example, Amy Gutmann and Dennis Thompson, *Democracy and Disagreement*. Cambridge, MA: Belknap Press of Harvard University Press. 1996 ; and Janna Thompson, *Discourse and Knowledge: Defence of a Collectivist Ethics*. London and New York: Routledge. 1998.

subordinated to the priority of identifying or constructing and promoting the public (common) good or the public interest.<sup>8</sup>

Though ‘rationally motivated consensus’ was the aim of deliberation for early theorists,<sup>9</sup> deliberative theory now has moved away from a ‘consensus-centred teleology’ to become more ‘sensitive to pluralism’,<sup>10</sup> the respectful engagement of different social and personal values. From a pluralist perspective, ‘disadvantaged’ groups must not be marginalised<sup>11</sup>; hence deep, even intractable disagreement could be the outcome of a genuinely deliberative democratic process.<sup>12</sup> Nonetheless, as Chambers<sup>13</sup> has noted, although the ultimate aim of deliberation might not be consensus, deliberative democratic outcomes that are justifiable (or acceptable) to all who are or who might be affected by the outcome remain critical to the democratic authenticity of the process itself. Dryzek and Niemeyer have reconciled pluralism and consensus by suggesting that consensus can be achieved through ‘pluralism at the simple level combined with a meta-consensus of values, beliefs and preferences’,<sup>14</sup> where the latter serve in effect as the ‘general will’ that stands in contrast to the (pluralist) ‘will of all’. At the level of practice, recent research reveals that facilitators have reframed the concept of consensus by talking instead of ‘the search for common ground’, incorporating the notion of the common good into a less-uniform, less-threatening collective quest to identify (or construct) areas of shared, overlapping, or complementary interest.<sup>15</sup>

### **Equality/Egalitarian Processes**

For early deliberative theorists, equality among participants was viewed as central to deliberation. Habermas, for example, held that equality—generated when all participants refrain from exercising the power at their disposal—was an essential precondition for deliberation. Similarly, Cohen argued that, although the power participants bring with them to the deliberative setting usually is unequally distributed, participants must be ‘substantively equal’ so that each has the same opportunity to contribute.<sup>16</sup> Equality requires both equal access and equality of participation; all ‘voices’ are deemed equal in the right to be heard<sup>17</sup> and each person’s comments are taken seriously.<sup>18</sup>

Equal access has been further explored in discussions of representative participation. Thus, for example, it has been argued that random sampling is the most egalitarian method of selecting participants who are ‘representative’ of the larger population from which they are drawn; each member of that population has an equal chance of being selected.<sup>19</sup> The requirement of equality has

been extended to all dialogic and deliberative participation processes. Burkhalter et al., for example, contend that ‘public participation is a combination of careful problem analysis and an egalitarian process in which participants have adequate speaking opportunities, and engage in attentive listening or dialogue that bridges divergent ways of speaking and knowing’.<sup>20</sup>

In contrast, in the study of norms undertaken by Mansbridge et al., equality was not an explicit value for facilitators of public participation. It was, however, thought to be integral to three related goals of participation: ‘extensive and inclusive participation in discussion, self-facilitation and group control, and fair representation of views without bias’.<sup>21</sup>

### **Rational/Reasoned Deliberation** \*

Habermas characterised deliberation as public ‘rational-critical debate’ that rested on ‘the authority of the better argument’.<sup>22</sup> Cohen explored the principles that underlie the democratic legitimacy of public deliberation: freedom (from constraints of authority), reason (exchanging reasons by participants in the course of weighing and selecting options), equality (distributed power), and consensus (a focus on the common good).<sup>23</sup> Lindeman described reasoned or rational deliberation as ‘... a cognitive process in which individuals form, alter, or reinforce their opinions as they weigh evidence and arguments from various points of view’.<sup>24</sup> Chambers construed it as ‘... debate and discussion aimed at producing reasonable, well-informed opinions in which participants are willing to revise preferences in light of discussion, new information, and claims made by fellow participants’.<sup>25</sup>

Other theorists have added or restated criteria for rational/reasoned deliberation. Gastil has described it as ‘discussion that involves judicious argument, critical listening, and earnest decision making... [F]ull deliberation includes a careful examination of a problem or issue, the identification of possible solutions, the establishment or reaffirmation of evaluative criteria and the use of these criteria in identifying an optimal solution’.<sup>26</sup> Burkhalter et al.<sup>27</sup> proposed that a deliberative participatory process benefits dialogue that precedes deliberation proper. Deliberative dialogue is an ‘open-ended discussion aimed at understanding one another’s experiences and perspectives rather than achieving a decision...’ By preparing the deliberative ground with

---

\* The question of whether rational deliberation precludes the use of emotion and intuition has been much-debated (cf. Rorty, 1985 and Nussbaum, 1995). Here, the idea of reasoned deliberation for the most part will mean the practice of giving and receiving of reasons when participants weigh and attempt to choose among different options. In this practice, emotion can and does play a legitimate role.

dialogue, ‘a more inclusive and deeper analysis of the issue can result’. Moving into the psychosocial arena of motivation, Ryfe drew upon experimental research to show that there are ‘... three conditions that tend to motivate individuals to adopt a deliberative frame of mind: accountability, high stakes, and diversity... [P]erceptions of consequences will also influence motivation’.<sup>28</sup>

### **Influence**

The extent to which deliberative initiatives should influence the outcomes of institutional policy-making processes has been a point of contention. Gastil has proposed that deliberation implies but does not require that an outcome be binding on official decision-makers.<sup>29</sup> Gaventa, in contrast, Gaventa argues that deliberation should produce results that are intended to and do influence public policy.<sup>30</sup> Similarly, Fishkin has written that public deliberation is likely to be ‘incomplete’ or ‘less deliberative’ if outcomes have no influence.<sup>31</sup> Finally, Bentson found that, at least in hypothetical scenarios, sharing in the decision-making process was ‘the single most important variable in public satisfaction with decision-making processes and outcomes’.<sup>32</sup>

### **Interconnectedness of Concepts**

In the course of attempting to render the concept of deliberative democracy more comprehensible to and more usable by practitioners, Carson and Hartz-Karp noted the interconnectedness of three critical elements in a deliberative democracy initiative: *influence* (the ability to affect the content of official policy), *inclusion* (equal opportunity of persons to participate in public deliberation, and the voicing by participants of views representative of the diversity of outlook in the larger population,) and *deliberation* (understood broadly as the ability to access information, understand issues, reframe questions, receive respect, engage in dialogue (interpersonal communication intended to increase mutual understanding), place one’s interests before others and ask that they be considered in the context of moving toward a public consensus, and participate in the collective weighing of the consequences of choosing different courses of action and arriving at a sound shared judgement concerning public priorities).<sup>33</sup>

These three elements, or dimensions, of deliberative democracy were affirmed subsequently by Fung, who suggested that ‘scope of participation, mode of communication and decision, and extent of authority... constitute a space in which any particular mechanism of public decision can be located’.<sup>34</sup> Of particular interest here is the extent to which these dimensions interlink in practice

and also form the critical and interconnected elements of the concept of deliberation. We will consider this question in the context of the examples below.

### **Theory and Practice**

A number of theorists have made the reasonable point that academic views need to be tested—and, if need be, tempered—by empirical research.<sup>35</sup> As Ryfe has written, ‘...we must learn more about what deliberation actually looks like...and how to coordinate deliberation with representative democracy [in order to learn]...more about the specific political contexts in which deliberation is likely to succeed’.<sup>36</sup>

The inductive analysis of norms of deliberation conducted by Mansbridge et al. highlighted a number of matters with respect to which theory and practice are at variance. Not surprisingly, one such divergence involved practitioners recasting theorists’ concern with abstract models of deliberation as questions about practices that have demonstrated instrumental value—that have ‘worked’. Participant satisfaction and group productivity were seen to be a function of two interdependent variables: ‘maintaining a positive atmosphere’ and ‘making progress’. Effective deliberation was a mix of ‘good emotional interaction’ and ‘good reason-giving’. The common good was interpreted as ‘common ground’, and freedom as the ‘free flow’ of ideas. Equality was assessed by the degree to which it was absent, and was viewed as a many-faceted obstacle to effective deliberation. While theorists focused on deliberation’s legitimacy, practitioners focused on the characteristics of deliberation that contributed most to accomplishing the group’s tasks.

While some of the differences between theorists and practitioners were evident in the deliberative democracy initiatives conducted in Western Australia (hereafter ‘WA’), in those instances practitioners focused more on the ‘micro’ dimensions of group dynamics. In contrast, in the Western Australian case studies that follow we take a more ‘macro’ look at initiatives in a deliberative democratic environment from inception to implementation, with a view to directing the reader’s attention to different aspects of the deliberative process.<sup>37</sup>

### **The Western Australian Context**

Against a background of traditional community consultation that had fallen into disrepute, the Australian Labor Party (ALP) came to power in WA in 2001 with a platform to improve community input to policy development. As of this writing, Labor has been in office for six years.

Although there have been some improvements over that time, the radical change that authentic deliberative democracy would require has not been undertaken.<sup>38</sup> However, one WA government official, the Minister for Planning and Infrastructure, Hon. Alannah MacTiernan MLA, \* has stood out nationally and internationally as a champion of deliberative democracy.<sup>39</sup>

A number of years ago, this author was hired as a consultant to pioneer innovative ways of engaging the community and industry in joint decision-making with government. This effort involved process design, overall coordination, and facilitation.<sup>+</sup> No established team existed to assist with the conducting of deliberative initiatives. As each opportunity for engagement with the public in a deliberative setting, I worked with the agency concerned to find the people needed to carry out the process.

Before going further, let me note that I was a key actor in the initiatives I was simultaneously researching. This dual role required that I walk a tightrope between two quite different roles. Naturally, it is not possible for me to be completely objective in analysing a process I had a large share in devising and executing. However, failing to report on the work in which I was involved would constitute a waste of years of experience and hard-won insight. Moreover, Carson has previously described the partnership between Minister MacTiernan and me as a unique way to institute deliberative democracy.<sup>40</sup> My intent is chiefly to draw on my experience to offer some insight into theoretical concepts of deliberation as they come face to face with the practical world of politics.

The WA deliberative initiatives implemented within the Planning and Infrastructure portfolio can be distinguished readily from the usual sort of community consultation or engagement, for several reasons. First, they used random sampling and other innovative ways to ensure inclusive participation. Second, at the commencement of each initiative the Minister outlined to participants the extent to which the outcomes of the deliberation would be influential, ranging from stating clearly why she would or would not be able to adopt eventual recommendations, to implementing the recommendation of a ‘Citizens’ Jury’ on a trial basis, to taking the outcomes of other initiatives to Cabinet for their decision. Third, the initiatives were notably more deliberative, involving a greater degree of shared decision-orientated interaction among participants and between them and the Minister.

---

\* Member of the Legislative Assembly

<sup>+</sup> The construction and analysis of surveys and participant evaluations were undertaken by an independent consultant.

The following two initiatives have been selected to illustrate deliberative principles in practice. Rather than try to report on the numerous initiatives undertaken during this period, I have elected to describe two of them in depth. I chose these two not only because they were inclusive, deliberative, influential initiatives, but as well because they made use of various deliberative methods and techniques. Moreover, the two examples brought out different issues and resulted in lessons, both positive and negative, that led to changes in the deliberative processes that followed. Finally, other initiatives implemented during this period have been documented elsewhere.<sup>41</sup>

### **Reid Highway (Citizens' Jury)**

Over the course of several governments, the issue of a major exit route from a new highway remained unresolved. Neither of the suburbs adjacent to the highway was willing to permit an exit to channel traffic into their community. When Minister MacTiernan suggested that the exit should be split so both suburbs handled the traffic, a hundred residents from both suburbs protested outside Parliament.

Eventually, it was determined that a 'Citizens' Jury' made up of residents from the two suburbs stood the best chance of resolving the issue to general satisfaction. The success of this deliberative device would depend on it being, and being seen as, inclusive, deliberative, and influential.

A Citizens' Jury is a structured method of obtaining detailed, considered recommendations from members of the public, who evaluate and compare policy alternatives. Between 12 and 25 'jurors' hear evidence from a range of 'expert witnesses' and from this informed position draw conclusions. The WA juries that have assembled to consider matters of infrastructure typically have met for a half-day prior to the proceedings to learn about the process, receive background briefing papers, and request further information. They have then deliberated for a full day, developing a joint recommendation that they have delivered to elected officials, media, and the community. This has been followed by e-mail correspondence to develop a final report. In the USA and UK, Citizens' Juries typically deliberate over four to five days.

Egalitarian Process. Eighteen jurors were selected at random using a data set from the WA Electoral Commission, which has the best population data (because voting in Australia is compulsory). The sample was stratified\* according to criteria set by a Steering Team, a small group of stakeholders and community members charged with overseeing the fairness and

---

\* 'Stratified' means placed into politically-relevant demographic categories.

accountability of the process. The inaugural Steering Teams were selected by the Minister to represent the different viewpoints on the issue. This procedure for assembling Teams was altered later, however, in response to stakeholder concerns about the lack of transparency of the process. A core group of Team members representing known viewpoints was selected by the Minister and the agency involved. Then those selected recommended additional members. In this instance, the Steering Team requested that juror selection be stratified so there would be equal numbers from each suburb; no more than one participant per household; one per street (to maximize geographic dispersion); approximately 50 percent male and 50 percent female; and with a reasonable range across age groups. The Steering Team added a final requirement for juror selection: that potential jurors would be selected only if they had not been a member of a Reid Highway lobby group. It was agreed an independent company would oversee this process and no-one else would be told the names of the final participants, thereby minimising potential lobbying of jurors prior to the proceedings.

The Steering Team also oversaw the provision of written material to jurors and articulation of the views to be represented. ‘Expert witnesses’ included local and state government officials, engineers, community members, and representatives of several local lobby groups. Their task was to inform the deliberations by presenting a paper and serving on a panel to answer the jury’s questions. A number of expert witnesses from the local community said publicly that regardless of the outcome they would support the findings, because in their view the process was ‘fair’ and ‘equitable’. From their point of view, the critical factors determining equity were the random sampling of jurors, the community’s equal opportunity to be heard as ‘experts’, and the transparency of the process. This became a recurring theme in subsequent deliberations: if the major protagonists and antagonists perceived the process to be fair and equitable, it significantly increased the sense of democratic validity of the outcomes.

### **Deliberation and Consensus/Search for Common Ground**

Following the hearings, the jurors discussed the process they would use to make a decision. They agreed they would consider all the solutions they could think of, set criteria to evaluate those options, and use ‘consensus’ to identify the best option. The group decided they would aim for a unanimous decision (though not by voting), but if this could not be achieved a minority report would be prepared. Many of the jurors had already given considerable thought to the issues and

potential options by reading the background information given to them and by doing their own research.

Prior to the session in which they deliberated options, jurors had identified potential routes for the highway exit. Nine possibilities were listed. Jurors then discussed criteria, placed them in order of relative importance, and assigned priority to the safety of children at the school and playground and of residents in the surrounding area. Applying this criterion, it became apparent that one option was clearly preferred to the others. The jurors agreed unanimously to support this option. A key to their success was their reframing of the issue from one of traffic flow to one of safety, which then became the focus of their work. The day ended with agreement on the wording of their recommendations and delivery to policy-makers and the media.

Deliberation concerning the issue of the Reid Highway exit contrasted strongly with a subsequent Citizens' Jury that was charged with recommending where the administrative centre should be located in the town of Albany. This issue had divided the town's residents. In this instance, the jurors decided to take a more rigorous quantitative approach. They developed the options and criteria, then divided among small teams the task of finding data that would enable them to analyse each option in terms of each criterion. The small teams delivered their findings to the group. Following discussion, each juror separately gave a numerical weight to each criterion. They then rated each option individually and anonymously against each criterion. Finally, their scores were added to obtain the group's referred option.

The Reid Highway jurors were highly satisfied with the process and outcome. The Albany jurors were less satisfied. Those who did not like the outcome nonetheless agreed to 'live with it' as the final recommendation. Yet post-deliberation interviews and discussions at the conclusion of the Albany deliberations revealed that unanimous confidence in the final result was lacking. Some jurors felt others on the Jury had not been entirely fair in their ratings, biasing the final results in the direction they had preferred at the outset. Such feelings illustrate a disadvantage of anonymous individual ratings: a loss of trust. Anonymity is at odds with the process value of transparency. Though using quantitative techniques to arrive at an outcome might be more rigorous and less messy, it may not prove as satisfying to participants as more-dialogic methods.

The Reid Highway deliberations demonstrated as well that, with effective deliberation, participants often 'reframe' the issue in a way that takes better account of their experience, needs, and values. Reframing did not occur in the Albany jury. Nor did it take place in other initiatives

that employed more-quantitative methodologies (such as a number of multi-criteria analysis conferences<sup>42</sup> that also made use of anonymous/ 'non-transparent' quantitative ratings<sup>43</sup>). The impact of relying upon dialogic consensus-building versus quantitative determination of outcomes, and the role of reframing, require further exploration.

### **Influence**

Before the Reid Highway jury began its work, Minister MacTiernan made a commitment to conduct a pilot of the jury's recommendation, provided it did not cost more than the A\$100,000 she had already committed to the project. This commitment made a considerable impression on the jurors. Both pre- and post-deliberation, most jurors said they felt a substantial responsibility to come to a good decision. All reported that they had read their information packs in advance. Two, on their own initiative, had carried out various interviews at sites such as the school and the playground, questioning school bus drivers and residents. Another juror had stood on the exit corner counting the trucks passing during different time periods of the day. Yet another, with the help of her husband (an engineer) had drawn up a plan for a ring road (by-pass) around the school.

The jurors' influence with government in turn became a key factor in the communities' acceptance of the proposed exit. Indeed, complaints from both suburbs ceased. As it happened, the jurors' unanimous decision was the same as that originally proposed by the department for main roads. The department responded immediately and with evident exasperation that, if the public had listened to them in the first place, they would not have needed to go through this process. It took Main Roads several months to realise the extent of the influence the jury process and individual jurors carried in the community.

The jury succeeded where the department had not for several reasons. For example, Main Roads had misinterpreted the communities' concerns as a NIMBY ('not in my backyard') response to increased traffic flow. However, the jury's reframing of the issue from a traffic flow problem (which they believed was easily solved) to a *safety* problem that jurors proceeded to address thoroughly enabled the community to feel heard. This sentiment was reinforced by the fact that the jury 'spent' the A\$100,000 the Minister had 'given' them on finding creative ways to resolve the safety issue, and their safety recommendations were implemented. Another reason for the cessation of complaints might have been the 'confession' made by one of the jurors at the conclusion of the process that she had been a member of a lobby group, and that she had had the

‘right problem and the wrong solution’. She committed herself to explaining to her community the reasons for her change of view.

The Reid Highway deliberative process shows that influence is important not just because it give participants a strong incentive to deliberate, but also because it lends the process credibility and strengthens the legitimacy of outcomes with the broader community.

### **Lessons Learned**

The device of a Citizens’ Jury offers government and the public both advantages and disadvantages:

- The small size of the Jury allows for considerable intimacy and potential for deep deliberation. However, the public tend to be wary of such a small group wielding substantial influence over decisions that could affect their lives, as evidenced by a community outcry (irate letters to newspaper editors, for example). Similarly, decision-makers tend to be anxious about bestowing legitimacy on a small group by permitting it to exercise influence over a policy decision. Except within the Planning and Infrastructure portfolio, Citizens’ Juries have been relegated to providing input to a decision, rather than sharing in decision-making.
- Because the process is less costly and the drop-out rate is low, a Citizens’ Jury usually allows more time for comprehensive, in-depth deliberation than is possible in deliberative events of a larger scale.
- Owing to the random selection of participants, ‘cross examination’ of expert witnesses, and a commitment by participants to exercise their best judgement and to work toward consensus, the Citizens’ Jury, it is taken very seriously by all parties involved and the process is perceived as fair. This has helped it become a well-known and widely-accepted deliberative format.

### **Scarborough Development: A Deliberative Survey<sup>44</sup>**

Western Australians have an aversion to high-rise buildings and building density, particularly near the ocean. Hence, when the local council of the Perth beach suburb of Scarborough put in an application for a major development with what was deemed to be inadequate consultation, the Minister decided she needed to know what a representative group of residents would think given the opportunity to understand the issues from different viewpoints and an opportunity to deliberate. Wanting a larger random sample and needing to know whether people’s views change as a result of

information and deliberation, we decided to conduct a deliberative survey. As with other initiatives, the Minister created a Steering Team to oversee the process, inviting representatives of the key stakeholder groups, for and against development, and those persons in turn recruited other members representing differing viewpoints. An independent researcher, selected by the initiating agency according to government protocols, designed the survey with the aid of the Steering Team.

In a deliberative survey, randomly selected residents (usually several thousand) fill out a questionnaire and agree, if called upon, to attend a day-long dialogue. Participants in the dialogue (between 200 and 400) fill out the same questionnaire survey again immediately prior to the forum. After listening to and questioning a broad range of experts together, participants discuss the issues in small groups. They submit further questions and matters requiring attention to table-top computers, which are themed and then broadcast to the room. Experts respond to these and any follow-up questions from the room. At the close of the deliberation, participants fill out the questionnaire for a third time. The independent researcher analyses the data and writes a final report. Results include the ‘top of the mind’ responses to the questions as well as the more ‘deliberated’ responses, with notation of any shifts in attitudes and views that occur. Clearly, knowing what a representative group thinks about an issue before and then after they have an opportunity to obtain comprehensive information and to deliberate is highly valuable. If the group has been selected randomly and is truly representative of the larger population, then it is possible to say, with varying degrees of accuracy,<sup>\*</sup> that if the larger population were to go through the same process, they too would reach the same conclusion.

### **Egalitarian Process**

For the Scarborough deliberative survey, questionnaires and invitations to attend a one-day dialogue were sent out to a random sample of several thousand residents. The sample was drawn from the Scarborough area as well as from other metropolitan areas having the highest beach-usage percentages (ascertained by reference to an earlier beach-user survey). Just under 200 respondents participated in the day-long event. In terms of both their attitudes and their demographic characteristics, they were representative of the larger population, except that young adults were

---

<sup>\*</sup> With a group of 100 randomly selected persons, the group’s conclusion will fall within 10 percentage points in either direction of the outcome the larger population would reach. A group composed of 300 persons will yield a result that will come within 7 percentage points. In order to achieve the familiar range of  $\pm 3$ -4 percentage points requires a group of 1,000 or more.

somewhat under-represented. Participants were not paid to attend; the event depended on their interest in the issue and their sense of civic responsibility. Subsequent deliberative surveys have obtained the participation of members of difficult-to-recruit groups using other random sampling methods or by giving participants a small stipend (\$50 to \$100 per day) to help them defray some of the costs of participation, such as transportation.\*

The Scarborough Steering Team worked hard to ensure an egalitarian process. They chose carefully which viewpoints to present and how to present them. They went through numerous iterations of the survey questions to ensure it was not biased. And they sought input about how the deliberative process would be structured. After considerable discussion, the Team agreed that, because only persons selected in the random sample would be permitted to participate, three representatives from each stakeholding group would be allowed three to observe the proceedings, thereby enhancing its transparency. Unfortunately, despite the request that observers not talk to participants during the proceedings, one of the organisers of a community lobby went to several tables and talked to participants before he was intercepted. Although his action likely had very little impact on the deliberation (because it occurred during question time) the industry group complained it had jeopardized the fairness of the process. This is not unusual. In other deliberative initiatives it has been found that, despite careful preparation and dedication to meeting the challenge of ensuring fairness, one small slip—overlooking even a single detail—can rapidly dispel the painstakingly constructed perception of an equitable process. As in the case of the industry group in Scarborough, stakeholding groups that fear the process will not generate an outcome that accords with their preconceived notion of an acceptable result, or that dissent from the outcome after the fact, will seize upon small errors as the pretext for indicting both the process and its substantive outcome.

### **Deliberation and Consensus/Search for Common Ground**

The viewpoints that participants would deliberate were determined by the Steering Team: representatives of industry, government, and the public, including supporters and opponents of development. All who wished to speak in favour of a given viewpoint were offered assistance in

---

\* In other places and on other occasions, organisers of deliberative events have paid participants a small stipend to compensate them for their time, much as jurors in civil or criminal court cases often are paid. This practice has been deemed essential to ensure that the sample is genuinely representative, especially with respect to members of low-income groups. In the present paper we cannot go into the merits or demerits of this practice.

making their presentations. One of the challenges that arise when presentations and panels play an important part in deliberating issues is variability in quality. More-eloquent and more-experienced speakers enjoy a substantial advantage in terms of their ability to be persuasive. This is another matter that warrants further examination.

In the Scarborough event, no attempt was made to reach consensus. The emphasis was on detecting changes in the pre- and post-deliberative views of participants as individuals. Analysis of the questionnaires showed that there had indeed been a significant shift in attitudes towards greater ‘sustainability’—for example, away from all low-rise dwellings to mixed-use, medium-rise buildings, and away from adding parking spaces for automobiles and improving roads near the beach to enhancing public transport within walking distance of the beach. Sustainability experts interpreted this shift in views as movement towards a greater regard for the common good, in that development options reflected a more even balance of economic, social, and environmental impacts.

### **Influence**

Minister MacTiernan had stated at the outset that the results of the deliberative survey would form the basis of her decision about future development plans for the Scarborough area. This was accepted, though reluctantly, by the local council and developers, more whole-heartedly by community activists. The effect on deliberation of the perception that participants’ views would or would not in fact influence affect subsequent policy was not assessed. Several post-survey comments, though, suggested that participants were unsure whether they trusted the commitments made, in view of their previous experience of not being heard.

Similarly, no effort was made to ascertain whether the credibility and acceptance of the process would be affected by the expectation that survey results would influence subsequent policy decisions. The mid-range height of buildings the Minister eventually adopted reflected the shift in views post-deliberation was not liked by the developers and council members who were aiming for high-rise buildings, or by the community activists who wanted only low-rise buildings. Although both groups participated actively in the Steering Team that oversaw the entire process, they criticised different aspects of the process after the results were known. As noted previously, such retrospective criticism of the process occurred after several other controversial development initiatives. Perhaps we should accept that it is an inevitable outcome of using deliberation to

address intensely disputed issues that have become polarised, especially in a political culture that has long regarded winning a vote or an election as the sole legitimate form of democratic ‘decision-making’.

### **Lessons Learned**

The Deliberative Survey offers government and the public both advantages and disadvantages:

- In so far as participants are selected in a manner that is truly random, the Deliberative Survey is strong in terms of meeting the criterion of participant equality. Its strength in this regard is enhanced by the fact that each person in a given population has an equal chance of being selected, and by the fact that the group from which ‘decision-makers’ are drawn (i.e., the population as a whole) is much larger than the subset of the general population that typically exerts disproportionate influence on the making of policy. (The general population is also maximally ‘diverse’). Representativeness is reduced, however, by self-selection, which occurs when the people who actually *attend* an event do not do so randomly (even though they have been *selected* randomly). Despite efforts in WA to guard against an unrepresentative sample—e.g., by relying upon the initial community survey to ascertain the attitudinal representativeness of participants, and by boosting numbers in demographically low areas)—achieving representativeness in all facets and in all stages of a deliberative process remains a challenge.
- The Deliberative Survey methodology has the advantage of being perceived as fair by most groups because it is similar to the familiar ‘before and after’ research design they have been habituated to in the reporting of results from research in the social and other sciences.
- Owing to its measurement of pre- and post-deliberative opinion, the Deliberative Survey is the only deliberative device that makes clear the impact deliberation has on the attitudes and preferences of participants.
- Because the Deliberative Survey makes no attempt to produce a consensus, the criticism cannot be leveled that reaching consensus may paper over disagreement that otherwise would be apparent. Equally, however, it could be argued that this technique is not truly deliberative, because participants need not engage each other in jointly weighing options and making a collective judgement about the best way to proceed.
- For better or worse, the Deliberative Survey allows decision-makers to feel they are more in control of the outcome that will emerge from a public process. They can interpret the results

with less fear of contradiction—for example, by taking a middle position between the ‘before’ and ‘after’ results, or by taking into account both results, or by focusing on only the ‘after’ results. In terms of influence on policy, survey results are less restrictive than methods in which consensus is achieved through a process to which there are many (deeply involved) ‘witnesses’.

## **Conclusion**

The experience of a government minister pioneering deliberative democracy has offered a unique opportunity to examine real-world deliberation. It has yielded insights into both theory and practice, showing where they meet and diverge, and has highlighted questions in need of further research.

In the matter of equality, or egalitarianism, two observations are in order. The first relates to subsuming representativeness/inclusiveness and pluralism under the same umbrella. This has blurred the extent to which representativeness is also important to the *quality of deliberation*. The second relates to the pervasiveness of equity throughout the life of any inclusive, influential deliberative process. Rather than being the focus of deliberation as described by early theorists, equity is better conceived as the lens or filter through which all players view each step of the process and make judgements as to its legitimacy. If any step—determining who participates, how they deliberate, what information will be provided and by whom, how decisions will be made and the influence they will have—is judged to be insufficiently equitable by any of those involved or affected by the deliberation, the whole process tends to fall into disrepute. In WA, the introduction of a Steering Team to oversee the process to ensure it was fair, comprehensive, and equitable helped make it more transparent to the community, and hence more trustworthy.

In a world where the outcome of a deliberation will matter, though, producing both the experience and the perception of an egalitarian process is far from simple. Despite attempts to include the key antagonists, protagonists, professional experts, and non-aligned community members throughout the process, the perceptions of different parties concerning what constitutes equity do not always align. The WA experience suggests in particular that, when deliberation outcomes have not supported the strongly-held views of any of the parties, the process is apt to be blamed and its legitimacy questioned or lost. This aspect of the task of fostering both the

experience of and perceptions of equity and legitimacy has not been examined in the literature and remains an important question for further research.

The WA examples provided here of deliberative processes show how both representativeness and influence are essential for important to the quality of deliberation. From this author's experience, Ryfe's identification of the chief factors affecting the motivation of people to adopt a deliberative frame of mind—accountability, high stakes, and diversity—has gained support. When participants have been charged with representing the citizenry as a whole; when they have understood that their deliberations will result in action and that this action will affect the community to a substantial degree; and when they have recognised that they will be accountable for the results of their deliberations, they have been unstinting in their earnestness to resolve the issue in the manner that best promotes the public good.

In addition, the case studies considered above have demonstrated that it is relatively straightforward to achieve the more mechanistic aspects of deliberation: identifying possible solutions, establishing evaluative criteria, and using those criteria to weigh the consequences of different options and choosing the best one. However, it has been brought out that the more-qualitative elements of effective deliberation—deep analysis, critical listening, and judicious argument—have proved the greater challenge. The difficulty of meeting this challenge has been exacerbated by the tight deliberative time-frames specified by elected officials and/or government agency representatives who have balked at the additional costs of deliberation lasting longer than a single day; who have feared a drop-off in participation if deliberation continues past one day; and who have discounted the need to develop trust (which often takes time) in order for people to deliberate deeply. It is interesting to note that, in contrast, concern over insufficient time for in-depth deliberation has not been a salient feature of participant feedback. The extent to which time and trust are important for deep deliberation are research questions in need of further investigation.

As for consensus/the search for common ground, the WA experience has proved consistent with the findings of the Mansfield study of norms, in which practitioners reframed 'consensus' as the search for common ground while incorporating the notion of the common good. After several years, the author stopped using the term 'consensus' when it became apparent that it often acted as a lightning rod for disappointed parties who wished to dispute results. Although all outcomes should be contestable, disputes rooted in a definition of consensus at odds with that agreed to by the deliberating participants, were frustrating to all involved. As Dryzek and Niemeyer have noted,

‘consensus of any kind is a matter of degree’.<sup>45</sup> Because defending different degrees was rarely productive, the term ‘search for common ground’ was adopted. The interesting question is why the notion of the ‘search for common ground’ appears to be more easily understood and accepted than ‘consensus’—in particular, whether the latter simply de-emphasises the plurality of views from the outset, or offers a better net with which to capture the issues hidden beneath a superficial agreement about values, beliefs, and preferences.

Because Western governments have been somewhat hesitant in instituting deliberative democracy, there have been few studies on the effect of citizen influence on the quality of deliberation. The WA experience has pointed out the centrality of influence. When participants have clearly understood the extent to which the outcomes of their deliberations will be influential, they have attended to the task of deliberation with earnestness, diligence, and extraordinary good will. This is an issue worthy of further study, not just in controlled experiments, but in real-world settings.

Finally, it has been the interconnectedness of these deliberative dimensions that has been revealed as pivotal to success in the Western Australian experience of deliberative democracy. When any one element has fallen short of expectations, it has diminished the quality of the whole initiative. This, too, is clearly an area for further research.

In summary, the following key questions have arisen: What are the pathways to achieving a positive experience and perceptions of equity and process legitimacy? To what extent are time and trust critical to the achievement of deep deliberation? Why is the notion of the ‘search for common ground’ apparently more easily understood and accepted than consensus? And does this concept simply discount the value of pluralistic views from the outset, or does it offer a broader means than consensus by which to surface issues underlying a patina of general consensus? To what extent is representativeness and the form it takes important not only to equity but to the quality of deliberation? To what extent is influence critical to judicious deliberation? And finally, to what extent is the interconnectedness of all these elements essential for effective deliberation?

Key observations that have arisen include the pervasive importance of context (the practicalities of deliberating in a political environment) on every step of the deliberative process. Similarly ubiquitous are perceptions of equity, which in turn, determine perceptions of legitimacy. Different deliberative techniques as well as qualitative and quantitative deliberative methodologies can be contrasted in terms of the quality of deliberation and participant satisfaction. Less discussed in

theoretical literature are the roles that trust, reframing, and influence play in deliberation, and the extent to which the interconnectedness of the elements of deliberation is a key determinant of success.

One final observation has to do with the potentially positive implications of deliberative processes for those in positions of authority. Inclusive, influential deliberative processes have demonstrated their potential for improving the quality of decisions made, for enhancing their legitimacy, and hence for facilitating their implementation. This aspect of deliberation is largely absent from theory, making the case more compelling for additional real-world research.

**Janette Hartz-Karp** is Associate Professor at Curtin University, Perth, Western Australia.

### Notes

---

<sup>1</sup> Carson L., & Hartz-Karp J. 'Adapting and Combining Deliberative Designs: Juries, Polls and Forums'. In Gastil, G. & Levine, P. *The Deliberative Democracy Handbook: Strategies for Effective Civic Engagement in the Twenty-First Century*, (Jossey Bass, USA), 2006: 120-38.

<sup>2</sup> Habermas, J. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, T. Burger (trans.), (Cambridge, Mass, MIT Press), [1962] 1991; Cohen, J. 'Deliberation and Democratic Legitimacy'. In Alan P. Hamlin and Phillip Pettit (eds.), *The Good Polity*. (Oxford, Blackwell), 1989.

<sup>3</sup> Bessette, J.M. *The Mild Voice of Reason: Deliberative Democracy and American National Government*, (Chicago: The University of Chicago Press), 1994; Bohman, J. *Public Deliberation: Pluralism, Complexity and Democracy* (Cambridge, MA: MIT Press) 1996; Gastil, J. *By Popular Demand*, (University California Press, Berkeley) 2000; Burkhalter, S., Gastil, J., and Kelshaw T. A. 'Conceptual Definition and Theoretical Model of Public Deliberation in Small Face-to-Face Groups', *Communication Theory, Public Deliberation in Small Groups*, 12 (4) 2002: 398-422; Chambers, S. 'Deliberative democratic theory', *Annual Review Political. Science*. 6, 2003: 307-26; Gaventa, J. 'Strengthening Participatory Approaches to Local Governance: Learning the Lessons from Abroad', *National Civic Review*, 93, (4) 2004: 16-27; Mansbridge, J. Hartz-Karp, J. Amengual, M. and Gastil, J. 'Norms of Public Deliberation: An Inductive Study', *Journal of Public Deliberation*, 2 (1) Article 7, 2006; Dryzek, J. and Niemeyer, S. 'Reconciling Pluralism and Consensus as Political Ideals', *American Journal of Political Science*, 50 (3) 2006: 634-649.

<sup>4</sup> Scruton, Roger. *A Dictionary of Political Thought*. London and Basingstoke: Macmillan, 1982: 402.

<sup>5</sup> Scruton, Roger. *A Dictionary of Political Thought*. London and Basingstoke: Macmillan, 1982: 88.

<sup>6</sup> Dryzek, J. and Niemeyer, S. 'Reconciling Pluralism and Consensus as Political Ideals', *American Journal of Political Science*, 50 (3) 2006: 634-649.

<sup>7</sup> Elster, A. 'The Market and the Forum'. In *Foundations of Social Choice Theory*, J Elster and A Hylland (eds.), (Cambridge: Cambridge University Press), 1986:103-132.

<sup>8</sup> Bohman, J. *Public Deliberation: Pluralism, Complexity and Democracy* (Cambridge, MA: MIT Press), 1996.

<sup>9</sup> Cohen, J. 'Deliberation and Democratic Legitimacy'. In Alan P. Hamlin and Phillip Pettit (eds.), *The Good Polity*. (Oxford, Blackwell), 1989: 23.

<sup>10</sup> Chambers, S. 'Deliberative democratic theory', *Annual Review Political. Science*. 6, 2003: 321.

<sup>11</sup> Young, I. 'Communication and the Other: Beyond Deliberative Democracy.' In S.Benhabib (ed.), *Democracy and Difference*. Princeton, Princeton University Press 1996.

<sup>12</sup> Mansbridge, J. 'Using Power/Fighting Power: The Polity'. In S. Benhabib (ed), *Democracy and Difference*. Princeton, Princeton University Press 1996.

<sup>13</sup> Chambers, S. 'Deliberative democratic theory', *Annual Review Political. Science*. 6, 2003: 309.

- <sup>14</sup> Dryzek, J. and Niemeyer, S. 'Reconciling Pluralism and Consensus as Political Ideals', *American Journal of Political Science*, 50 (3) 2006: 647-648).
- <sup>15</sup> Mansbridge, J. Hartz-Karp, J. Amengual, M. and Gastil, J. 'Norms of Public Deliberation: An Inductive Study', *Journal of Public Deliberation*, 2 (1) Article 7, 2006: 27.
- <sup>16</sup> Cohen, J. 'Deliberation and Democratic Legitimacy'. In Alan P. Hamlin and Phillip Pettit (eds.), *The Good Polity*. (Oxford, Blackwell), 1989: 23.
- <sup>17</sup> Sanders, L. M. 'Against Deliberation', *Political Theory* 25, 1997: 347-76.
- <sup>18</sup> Dutwin, D. 'The Character of Deliberation: Equality, Argument, and the Formation of Public Opinion', *International Journal of Public Opinion Research*, 15 (3), 2003: 239-264.
- <sup>19</sup> Broome, J. 'Selecting People Randomly', *Ethics* 95 (October), 1984: 38-55; Burnheim, J. *Is Democracy Possible? The Alternative to Electoral Politics*. (London: Polity Press), 1985; Carson, L. 'Avoiding ghettos of like-minded people: Random selection and organizational collaboration', Chapter 20, In S. Schuman (ed.) *Creating a Culture of Collaboration*, (Jossey Bass/Wiley), 2006: 418-432.
- <sup>20</sup> Burkhalter, S., Gastil, J., and Kelshaw T. A. 'Conceptual Definition and Theoretical Model of Public Deliberation in Small Face-to-Face Groups', *Communication Theory, Public Deliberation in Small Groups*, 12 (4) 2002: 398.
- <sup>21</sup> Mansbridge, J. Hartz-Karp, J. Amengual, M. and Gastil, J. 'Norms of Public Deliberation: An Inductive Study', *Journal of Public Deliberation*, 2 (1) Article 7, 2006: 27.
- <sup>22</sup> Habermas, J. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, T. Burger (trans.), (Cambridge, Mass, MIT Press), [1962] 1991: 36.
- <sup>23</sup> Cohen, J. 'Deliberation and Democratic Legitimacy'. In Alan P. Hamlin and Phillip Pettit (eds.), *The Good Polity*. (Oxford, Blackwell), 1989: 23.
- <sup>24</sup> Lindeman, M. 'Opinion quality and policy preferences in deliberative research'. In *Research in Micropolitics: Political Decisionmaking, Deliberation and Participation*, M X Delli Carpini, L Huddy, R Shapiro, (eds.). (Greenwich, CT: JAI Press) 6, 2002:199.
- <sup>25</sup> Chambers, S. 'Deliberative democratic theory', *Annual Review Political. Science*. 6, 2003: 309.
- <sup>26</sup> Gastil, J. *By Popular Demand*, (University California Press, Berkeley) 2000: 20.
- <sup>27</sup> Burkhalter, S., Gastil, J., and Kelshaw T. A. 'Conceptual Definition and Theoretical Model of Public Deliberation in Small Face-to-Face Groups', *Communication Theory, Public Deliberation in Small Groups*, 12 (4) 2002.
- <sup>28</sup> Ryfe, D. M. 'Does Deliberative Democracy Work?' *Annual Review of Political Science* 8, 2005: 57.
- <sup>29</sup> Gastil, J. *By Popular Demand*, (University California Press, Berkeley) 2000: 20.
- <sup>30</sup> Gaventa, J. 'Strengthening Participatory Approaches to Local Governance: Learning the Lessons from Abroad', *National Civic Review*, 93 (4) 2004: 16-27.
- <sup>31</sup> Fishkin, J. *The Voice of the People*, (Yale Univ. Press, New Haven, Connecticut) 1995: 41.
- <sup>32</sup> Bentson, K. M. 'Evaluating Public Participation' (Unpublished thesis, Faculty of San Diego State University) 2003, cited in Carson, L. & Hart, P. 'What Randomness and Deliberation can do for Community Engagement', *International Conference on Engaging Communities*, Brisbane, Australia, 14-17 August, 2005: 6.
- <sup>33</sup> Carson L., & Hartz-Karp J. 'Adapting and Combining Deliberative Designs: Juries, Polls and Forums'. In Gastil, G. & Levine, P. (eds.) *The Deliberative Democracy Handbook: Strategies for Effective Civic Engagement in the Twenty-First Century*, (Jossey Bass, USA), 2006: 122.
- <sup>34</sup> Fung, A. (Dec 2006). Varieties of Participation in Complex Governance *Public Administration Review*, Special Issue, Dec 2006: 66.
- <sup>35</sup> Ryfe, D. M. 'Does Deliberative Democracy Work?' *Annual Review of Political Science* 8, 2005: 49-71; Dutwin, D. 'The Character of Deliberation: Equality, Argument, and the Formation of Public Opinion', *International Journal of Public Opinion Research*, 15 (3) 2003: 239-264; Mansbridge, J. Hartz-Karp, J. Amengual, M. and Gastil, J. 'Norms of Public Deliberation: An Inductive Study', *Journal of Public Deliberation*, 2 (1) Article 7, 2006.
- <sup>36</sup> Ryfe, D. M. 'Does Deliberative Democracy Work?' *Annual Review of Political Science* 8, 2005: 57.
- <sup>37</sup> Mansbridge, J. Hartz-Karp, J. Amengual, M. and Gastil, J. 'Norms of Public Deliberation: An Inductive Study', *Journal of Public Deliberation*, 2 (1) Article 7, 2006: 34-36.
- <sup>38</sup> Hartz-Karp, J. 'How and Why Deliberative Democracy Enables Co-Intelligence and Brings Wisdom to Governance', *Journal of Public Deliberation*: <http://services.bepress.com/jpd> May 2007.
- <sup>39</sup> Carson, L. 'An inventory of democratic deliberative processes in Australia: An early finding from a report of three decades of deliberative designs in Australia', [www.actedemocracy.net](http://www.actedemocracy.net), accessed 16 February, 2007.
- <sup>40</sup> Ibid.
- <sup>41</sup> See [www.21stcenturydialogue.com](http://www.21stcenturydialogue.com) for publications analysing a number of different initiatives undertaken during this period.

<sup>42</sup> The MCA is a systematic, structured decision aiding tool that makes use of technical data together with community value judgements to reach a preference. The MCA involves participants (60 – 100s) in two Conferences over several months. At the first Conference (1 – 2 days), the alternative options are devised and a set of criteria are determined. In separate small meetings, selected ‘experts’ then assess the alternatives according to the criteria, using quantitative data where possible. Numerical assessments are input to the computer. At the final Conference (1 day), participants numerically weight the criteria; the information is submitted to a computer and a list of preferred options is produced.

<sup>43</sup> The multi criteria analysis conference is described in full, together with several examples on [www.21stcenturydialogue.com](http://www.21stcenturydialogue.com).

\* The internationally known Deliberative Poll was adapted in a number of ways, including reducing the usual duration of deliberation to one day; in most instances, not paying participants; using an initial broad community survey that was repeated again at the beginning and end of the deliberation to discern the representativeness of the sample in the room; and interconnected small group table computers to enable the theming of questions and issues, aiding deliberation. To avoid confusion, it has been called a Deliberative Survey

<sup>45</sup> Dryzek, J. and Niemeyer, S. ‘Reconciling Pluralism and Consensus as Political Ideals’, *American Journal of Political Science*, 50 (3) 2006: 642.