Understanding Deliberative Citizens: The Application of Q Methodology to Deliberation on Policy Issues

Simon Niemeyer
Australian National University
Selen Ayirtman
Curtin University
Janette HartzKarp
Curtin University

Abstract: *This article argues that deliberation provides a suitable method for understanding what the public ideally wants when it comes to decision making. Q methodology provides the basis for an ideal approach for understanding what is happening during deliberation and for developing a deeper understanding of the choices being made. The approach reported in this article involves using Q sorting in conjunction with a survey of policy preferences, both administered before and after deliberation. The focus is a deliberative process conducted to decide the future of the ageing Fremantle Bridge, where the issue involved conflicting values. The Q analysis revealed three main positions (factors) in relation to the issue, each tending to correspond to different kinds of options for replacing the bridge. Overall, deliberation resulted in a move away from concern about the heritage value of the old bridge and toward a safety-oriented position. There was also a corresponding change in preference in favour of options that participants believed would improve safety. The approach provides information that is useful for policy making because it identifies the main reasons driving the formation of public opinion and the circumstances in which opinions change when the public is given the chance to fully reflect on the outcome.*

Introduction

In democratic systems, decision makers who consult on policy matters are supposed to be interested in what the public wants as an outcome. But the way that this is done often treats democracy as an aggregation of 'pre-political' preferences formed independently of political context and in the absence of deliberate reflection of dimensions of the choice being made (Warren, 1992). Democratic consultation has traditionally been

Contact author: simon.niemeyer@anu.edu.au
Operant Subjectivity: The International Journal of Q Methodology, 2013, 36(2): 114–134

based on the immediate responses of citizens, without their substantive reflection on the implications of their choices. Preferred outcomes may be sought via opinion polls, usually in the form of an approach that allocates preferences between different policy options. But this is a narrow view of decision making, as well as of human subjectivity—by which we mean the range of perspectives, beliefs, values, and dispositions, which inform the political decisions that citizens make. There is considerable diversity in the 'public will', and the choices that people make are often prone to change, not only because circumstances change, but also because in some cases the subjective wants and desires of citizens are not well connected to the political choices that they make (Converse, 1970), although under ideal (deliberative) conditions this need not be the case (Niemeyer, 2011).

Deliberative democracy, by contrast, takes seriously the reasons why citizens make the choices they do. It takes place, ideally, under conditions involving reflection on all the relevant arguments in the absence of distorting influences such as power or coercion. Deliberative theory holds that political decisions are inclusive and that the input of citizens is consequential (Dryzek, 2009). Deliberation is supposed to involve the non-coercive exchange of arguments, where reciprocity requires that participants take competing views seriously and accommodate those found to be valid by adjusting their own preference.

The most practical manifestation of these deliberative ideals to date has been in the form of innovative forums that bring together randomly selected citizens to consider important public issues. There are many such innovations—often referred to by deliberative democrats as deliberative minipublics because they are meant to represent a microcosm of a wider (ideally) deliberative community—such as citizens' juries, deliberative polls and consensus conferences (see Smith, 2009). This article considers the impact of one particular minipublic based on the 21st Century Town Meeting model, which has been developed by the organisation America Speaks (see http://americaspeaks.org/services/21st-century-town-meeting/). This model involves between 200 and 5000 citizens who deliberate in small groups that are networked together via computer to facilitate the sharing of inputs from each group (Hartz-Karp, 2005). The advantage of this approach is that it involves relatively large numbers of citizens in meaningful deliberation, whereas many deliberative minipublics involve much smaller groups.

Participation in deliberation is supposed to, and often does, lead to changes in the policy preferences of citizens (Warren, 1992). A number of deliberative democrats have tested specific hypotheses to explain why this happens (Barabas, 2004; Farrar, Fishkin et al., 2010). Some have centred on a change in perspective from the self-interested

consumer to the more civic-minded citizen (Elster, 1986; Levasseur & Carlin 2001). However, these explanations tend to be imposed by the researcher, without looking at deliberation from the perspective of the participant. Neither do they help us to properly understand the content of what is changing during deliberation, or the impact on the subject. Using Q methodology in conjunction with deliberation, however, permits a potentially deeper understanding of the dynamics at play, and as will be explained below, of the underlying processes driving changes in preferences. The approach is phenomenological rather than hypothetical, and arguably, more consistent with the ideals of deliberative democracy (Dryzek, 1990; Blaug, 1997).

This article showcases an example of the application of Q methodology in conjunction with a policy-preference survey to the analysis of a deliberative process, the Fremantle Bridge Deliberative Forum. It begins with a background description of the case study and the deliberative forum itself. The article then moves on to outlining the rationale and methodology used in the analysis, before describing the results. The discussion and conclusions consider the merits of this approach for use in policy making.

Background

The Fremantle Traffic Bridge is one of two important road traffic links across the Swan River joining the port city of Fremantle to the Perth metropolitan area. The bridge was originally constructed in 1939 and was upgraded in 1974. The expected lifespan of the upgrade was around 30 years. The bridge's present condition has deteriorated to the stage that either upgrading or replacing is required.

The responsible department, Main Roads Western Australia (Main Roads) identified three concerns with respect to the current structure of the Fremantle Bridge. All three relate to safety and engineering: risk of collision by river vessels, structural integrity of the bridge and road-user safety. These concerns relate to serious problems for river navigation, which is impeded by both the low level of river clearance afforded by the bridge and the misalignment with a nearby railway bridge, making passage by larger river craft, in particular, a complicated and potentially dangerous proposition. Road-user safety is impaired by the narrowness of the bridge and by poor provision for pedestrians and cyclists. Additional concerns identified as part of preliminary public consultation included the heritage significance of the bridge, conservation of the Swan River and concerns of the indigenous Noongar people.

The heritage significance of the bridge is highlighted by its listing in May 2006 on the interim listing of the State Register of Heritage places. The Swan River is also recognized as a place of value to Noongar people with respect to its past and current usage, as well as due to its

mythological and spiritual meaning.

In order to decide the future of the bridge, the Western Australian state government, through Main Roads, embarked on a large-scale community engagement process. The overall objective of the process was to identify public views on, and preferences for, six options developed by Main Roads (see Table 1) to help form Main Road's advice to government on the proposed future of Fremantle Bridge.

Table 1: Options Presented to the Community Engagement Process

		Options
1	*Repair*	Retain existing bridge, but replace the navigation spans and deteriorated components
2	*Repair and widen*	Retain existing bridge, but replace the navigation spans and deteriorated components and incorporate bridge widening
3	*New bridge, retain section*	Construct a new standard bridge next to the current bridge, leaving a section of the existing bridge as a heritage and recreation site
4	*New statement bridge, retain section*	Construct a new bridge that is visually appealing, providing a visually striking entry point into the town of Fremantle, leaving a section of the existing bridge as a heritage recreation site
5	*New bridge plus old cyclist bridge*	Construct a new standard bridge and retain the existing bridge as a pedestrian/cyclist facility
6	*New bridge, retain old*	Construct a new two-lane standard bridge and retain the existing bridge as a two-lane bridge with improved pedestrian/cyclist facilities

The Deliberative Forum

The culmination of the community engagement was the single-day Fremantle Bridge Deliberative Survey Forum ('deliberative forum'), based on the 21st Century Town Meeting model and involving approximately 200 residents from the nearby region. The aims of the deliberative forum were to provide participants with opportunities to consider information presented by expert panels, deliberate in small groups to determine outstanding issues and questions, listen to responses and increase their understanding of the different viewpoints. Participants were charged with considering their preferred options among those presented in Table 1 and the issues surrounding those options. There was no attempt to try to reach participant consensus on any of the bridge options.

The layout of the forum comprised a main stage and 25 round tables with approximately eight to 10 participants per table. Each table was assigned a facilitator. The small groups at each table constituted the main deliberation units within the wider forum.

The process began with a welcome and overview of the day, following which participants were asked to fill out the 'deliberative survey', which asked them to rank the six options in order of preference. Some participants also performed a Q sort, as described below. The first of the deliberative sessions then began, with the groups discussing what was most important to them about the issue.

To collate and organise views each group was equipped with a computer. A scribe volunteered to input the results of their discussion. Where members of groups did not agree on issues, both the majority and strongly held minority views were recorded. Each computer was connected to a six-member 'Theme Team', drawn from Main Roads, the community and industry. The 'themers' worked in pairs, examining all inputs as they were submitted. They condensed and collated the information, identifying emerging themes from the room.

After the introductory discussion, participants learnt about the Fremantle Bridge issue through testimony from a series of 'experts', consisting of representatives from the community, industry and government. Overall, there were three panels of expert presenters that addressed different themes regarding the bridge (see Table 2). Following the experts' short presentations, participants were asked, as groups, to express considered collective concerns and questions, also drawing on information pamphlets that were prepared by the steering group as part of the wider community consultation process (see MainRoads WA, 2006). Concerns and questions were then collated by themers and put to the experts for their responses. Then, to encourage expert–participant interaction following initial expert responses, additional questions or concerns were also taken from the floor. As experts responded to questions, their comments were summarised by two members of the deliberative forum steering group.

At the conclusion of the Forum, participants were asked again to fill out the deliberative survey containing identical questions to the first survey. Some also completed a second Q sort.

Outcomes and Role in Decision Making

As the deliberative forum concluded, each participant received a hard-copy report outlining what had occurred during the day, including the themed and specific questions and concerns put to the expert panels, as well as an overview of responses. Approximately one month later, participants received a synopsis of the findings from the survey analysis, and the full survey report was placed on the web, referred herein as the

Table 2. Topics Presented and Discussed During the Deliberative Process

Panel	*Topic*	*Presentations*
What is most important to you? (Participant Collective Responses)		
1st Panel	Bridge conditions and options	1. Bridge conditions/ weaknesses 2. Six bridge options
Participant Collective Concerns (Clarifications, Views to Test)		
2nd Panel	Marine and Road Safety, Cycling Interests	1. Marine Safety 2. Road Safety 3. Cyclist interests
Participant Collective Concerns (Clarifications, Views to Test)		
3rd Panel	Heritage, Indigenous and Nearby Community Issues, and Construction Impacts	1. Heritage 2. Aboriginal heritage 3. Community views 4. Construction impact
Participant Collective Concerns (Clarifications, Views to Test)		

consultant's report (Bruce, 2006). In addition, the results and analysis of the Fremantle Community Engagement Process were consolidated into a more comprehensive report by Main Roads to inform the decision made by the relevant government minister.

Understanding Deliberative Changes: The Role of Q Methodology

According to deliberative democrats, the kind of deliberation witnessed in the deliberative forum is supposed to induce reflection on preferences. These preferences were captured immediately before and after deliberation (via the 'deliberative survey'), which is common practice for many forms of deliberative minipublic events, such as deliberative polls (Fishkin 2003). But surveying preferences only tells us part of what is going on. Certainly changes in desired outcome are relevant to policy makers, but the underlying changes to the dispositions, values, or beliefs (or subjectivity) is, arguably, just as important, if not more so. In other words, it is not just relevant to understand what citizens come to want as a result of deliberation, it is also important to understand why they choose the way that they do.

Analysing both the expression of preference and the underlying subjectivity of citizens in conjunction with deliberation also makes it possible to understand what is driving the changes to preferences and what it says about the issue under consideration.

Q methodology has been used to provide insights into reasons why participants might have changed their minds in relation to the options presented to them regarding the Fremantle Bridge. The research team was also interested in developing a deeper understanding of the 'public will' in relation to the issue, in ascertaining the extent to which participants' final positions reflect the underlying will of the public concerned and in assessing the role of the deliberative process in shaping final positions (see Niemeyer, 2011).

The use of Q methodology is consistent with the kind of discourse analysis advocated by Dryzek (1990, 1993). In this study, Q methodology was used to both identify the predominant discourses that relate to the future of the Fremantle Bridge, as well as to examine the extent to which particular discourses influenced subjectivity.

As previously mentioned, Q methodology was combined with an analysis of stated policy preferences, with two sets of data collected both before and after deliberation. This approach makes it possible to compare changes to subjectivity of participants and their bridge preferences over the same period. This test–retest approach is not particularly common among Q scholars and practitioners, although the approach has been used in a number of different ways (for instance, Cook, Scioli, & Brown, 1975; Expositor, 1992; Freie, 1997). The approach used here is similar to that of Freie (1997), which involves examining changes to the factor loadings of individual participants.

Implementation

The Q sort included 36 statements, shown in the Appendix, which were sorted from −5, denoting strongest disagreement to +5, denoting strongest agreement. The statements were collected during a stakeholders meeting in Fremantle in August 2006 and from local newspapers. They cover issues of safety, the environment, indigenous concerns, costs and aesthetics with regard to both the existing situation and the future of the Fremantle Bridge. The statements were piloted prior to the deliberative forum at a meeting of key stakeholders to test how well they could be used to identify the existing views on the Fremantle Bridge. Using the pilot analysis and participants' feedback a number of statements were modified and others added.

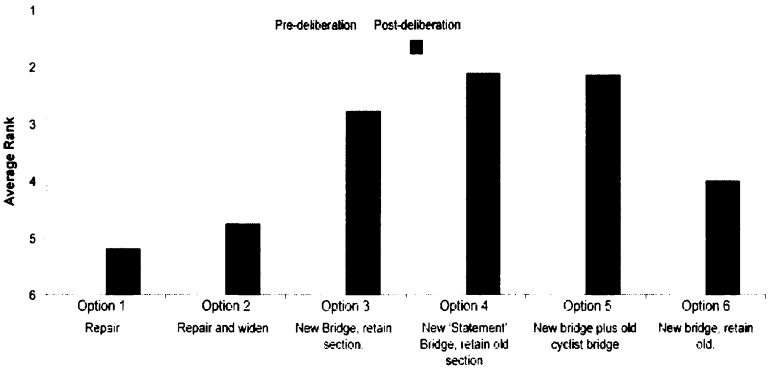
Results

The resulting data from the preference survey and Q sorts were analysed to determine the nature of changes that occurred to both policy preferences and subjectivity during the deliberative forum. The discussion below begins with the analysis of preferences, before moving onto the Q analysis.

Changes to Preferred Outcomes

The analysis of the preference survey data initially involved a straightforward aggregation of the data by averaging the rank given to the options by participants, which is sometimes referred to as a Borda Count. Figure 1 shows the results before deliberation (light bar) and after deliberation (dark bar). Based on average rank, Option 5 is preferred prior to deliberation and Option 4 after deliberation, but the pre- and post-results for Options 3, 4, and 5 have overlapping 95% confidence intervals. Moreover, the only significant change is the declining popularity of Option 2. Overall the changes are relatively small compared to what is often observed during comparable deliberative processes (for example, Niemeyer, 2011).

Figure 1: Pre- and Post-Deliberation Option Rank Averages



To explore whether there were changes to the different 'kinds' of preference positions held by participants during deliberation we adopted a similar analytic strategy to Q methodology. This involved applying an inverted factor analysis to the option rankings to see if a clearer picture of the changes emerged. This analysis was used since aggregate data does not capture well the trends in changes to preferences. Principal components extraction and varimax rotation was performed on the combined set of pre- and post-deliberative preference option data, involving all six options. The results produced three 'preference factors', shown in Table 3. The first of these factors ranks Option 4 first, followed by 5 and 6, all involving some combination of building a new bridge and retaining the old.

To examine the overall changes in preference positions in relation to the bridge, we used the average factor loadings and compared the pre- and post-results, shown in Figure 2. Unlike the aggregate, undifferentiated data, the inverted factor analysis did demonstrate what we had qualitatively observed: that there was an overall shift toward options that replace the original bridge, with retained sections of the

Table 3: Preference factor Scores: Fremantle Bridge

Option	*Description*	*Preference factor 1*	*Preference factor 2*	*Preference factor 3*
1	Repair	6	4	2
2	Repair and widen	5	3	3
3	New bridge, retain section	4	1	4
4	New statement bridge	1	2	5
5	New bridge plus old cyclist bridge	2	5	1
6	New bridge, retain old	3	6	6

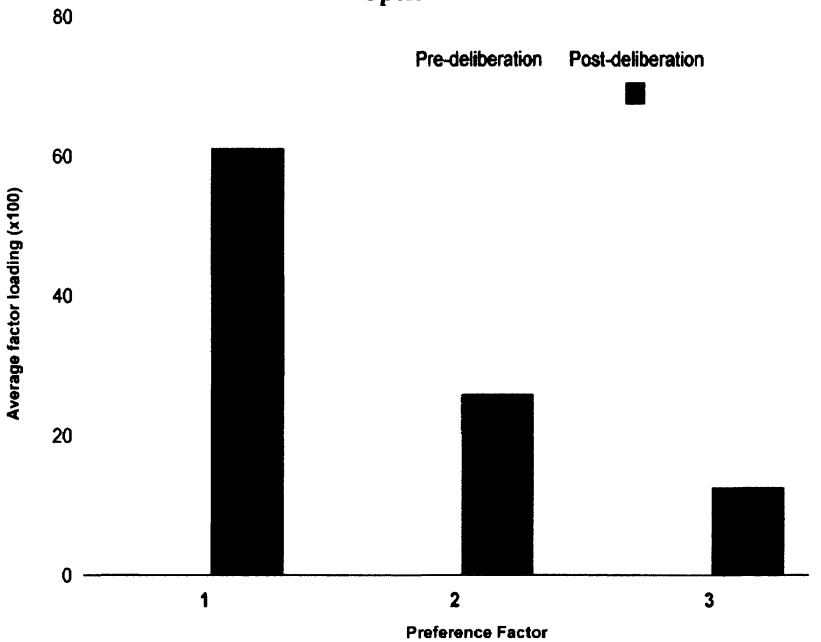
old. Even though such an analysis does not conform to the usual approach in Q methodology—particularly because of the small number *n*, in this case referring to the number of options—it did reveal changes that were hidden in the basic preference data.

Q Analysis

More important than the actual changes in preferences is the explanation of the underlying changes observed via the Q sorts. Longitudinal studies using Q methodology are relatively uncommon, but not unheard of. The primary consideration for the analysis concerns how Q sorts are grouped. Because there are two sets of data, there are a number of possible ways in which factors can be extracted. One approach is that adopted by Pelletier, Kraak, McCullum, Uusitalo, and Rich (1999), in which sets of data obtained at different deliberative phases are analysed as separate groups. This approach can also involve a second-order analysis to determine whether the structure of the Q factors has changed between treatments (Brown, 1980; Niemeyer, Petts, & Hobson, 2005). We adopted different approach, which combined all the data as part of a single analysis, comparing changes to factor loadings at different stages (Lipgar, Bair, & Fichtner, 2000). It was, thus, similar to the analysis performed on the preference data, and used factor loadings to track changes during deliberation, similar to Freie (1997).

The actual Q analysis is presented in Niemeyer, Ayirtman and HartzKarp (2008). It involved extracting an initial set of factors using principal components extraction followed by varimax rotation. In addition, a series of manual rotations were performed to maximise as far as possible the relationship between subjective factors and preferences.

Figure 2: Pre- and Post-Deliberative Factor Loadings: Preference Options



These theoretical rotations were driven by the assumption that there is a relationship between the Q sorts and preferences of participants, which can be viewed through the Q factors. As such, rotations were performed to maximize the difference between individuals with different preference positions in relation to the bridge, as identified by the analysis summarized in Table 3. This was done manually using PCQ.*

The analysis produced four factors that were originally reported for the study (Niemeyer et al., 2008), three of which are useful for understanding the changes that occurred during deliberation. The fourth factor, 'alternative transport' was not prominent and did not change significantly during deliberation. In brief, these factors are:

A Safety and Efficiency: *focussed on the development of a safe, efficient, modern and long-lasting bridge*

B Heritage Priority: *focussed on heritage issues with an emphasis on indigenous heritage*

C Conditional Alteration: *Interested in possible alteration after adequate consideration of the issues*

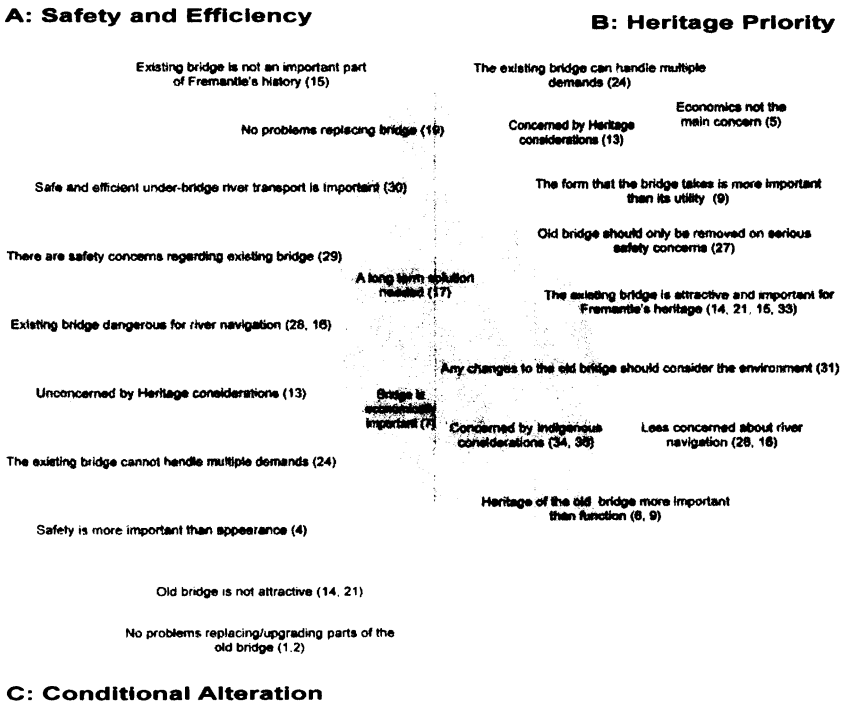
---

* More recently, we have used AdvanceQ software to more formally approach this task using least squares analysis to maximize the relationship between preference and Q factors (Moten & Niemeyer, 2008).

The factors themselves are depicted schematically in Figure 3 where they are represented by shaded circles that contain representative statements paraphrased from the Q study (with the corresponding number shown in brackets). The statements are placed according to whether they are significantly associated with one or more factor. Where a statement is uniquely associated with a factor it is located uniquely within that factor's 'space'. Otherwise it is placed in the overlap between two more factors.

Taken together these statements characterise the discourse or story told by that particular factor. The factor scores can be found in the Appendix. The factors are not completely orthogonal. Factors A and B and B and C do not strongly overlap (with a 0.17 and 0.20 correlation between the pairs respectively). Factors A and C do overlap (0.58), but there are important differences between them that help to explain the different perspectives of participants.

Figure 3: Factor Description Diagram



Although Figure 3 provides a useful snapshot of the main features of each factor, the following provides a description of each of the factors.

Safety and Efficiency

Factor A is most strongly associated with emphasis on the safety of the bridge and the necessity of a long-term solution (Statements 30, 29 and 4). The main concern for this factor is the critical infrastructure of the bridge. Compared to other factors, Factor A suggests, as for C, a strong position that is open to modern design options when deciding about the future of the bridge (Statement 13).

Factor A is a utilitarian view. It perceives the bridge neither to be an iconic landmark in Fremantle nor aesthetically pleasing. The Bridge is replaceable (Statement 15). It should be upgraded or replaced to provide safe and efficient movement for all road and river users. Heritage related issues are not particularly important.

Those individuals who loaded strongly on Factor A tend to prefer Option 3 or 4. (While Options 1 and 2 address issues related to safety concerns, they do not offer a long-term solution.) Both Options 3 and 4 ensure a long-term solution with a minimum of 100 years bridge life. Both options are about constructing a new bridge and leaving a section of the existing bridge as a heritage recreation site. The main difference between these two options is that Option 4 emphasizes the importance of appearance and making a statement. Given this and the high factor score for statement 13 (being open for modern design options) it is possible to conclude that those who are highly loaded on this factor would tend to go for Option 4—which, as will be seen, is indeed the case.

Heritage Priority

This factor places an emphasis on the heritage significance of the bridge with respect to its historical structure (Statement 27) and its meaning for indigenous people (Statement 34). Factor B shows strong sensitivity about the significance of the bridge for indigenous people. But it is not an absolute position; there is apparently a willingness to make trade-offs. Indeed, the perspective concedes that the Fremantle Traffic Bridge is not the most iconic landmark in Fremantle, although it is a strong, enduring part of the history (Statement 15). However, unlike Factor A, this position does not seem to be open for modern design options. It tends to favour a bridge with a heritage outlook.

Those who are highly loaded on Factor B tend to prefer an option emphasizing the heritage significance of the bridge. They are more likely to feel that retaining the old bridge is important. When it comes to the indigenous issues, which are strongly emphasized by this factor, among the six possible options developed by Main Roads, there is no single option addressing the inclusion of indigenous concerns as an advantage.

Conditional Alteration

In many respects Factor C is similar to Factor A. It is also concerned about the safety of the bridge but in more general terms. For instance,

compared to A, C is not strongly concerned about cyclists' safety. This factor emphasizes that the safety of the bridge is more important than its appearance. However, it should not mean that Factor C is indifferent with respect to the appearance of the bridge. As the high factor score for statement 13 reveals, Factor C is open for modern design options. The preferred option associated with Factor C is similar to that of Factor A (Option 4 or 5). Indeed, as the high factor loadings for this Factor show that those who are highly loaded on Factor C have tended to choose Option 4 or 5. Another similarity between Factors A and C is a preference that the bridge underpin the economic activities in the region (Statement 5), in contrast to a negative score in Factor B.

One of the main differences between Factors A and C is that C has the highest factor score (+5) for the statement emphasising that indigenous concerns should be given adequate consideration when deciding about the future of the bridge (Statement 34). Again compared to Factor A, Factor C seems to be more sensitive regarding the heritage significance of the bridge (see factor scores of both factors for statement 27, 35).

Given the main issues addressed by Factor C, it seems like this factor covers the basic issues raised by Factors A and B. Similar to Factor B, Factor C is concerned about the heritage significance of the bridge particularly for indigenous people, and like Factor A, Factor C is strongly driven by a conviction that alterations are both necessary and desirable. As such, Factor C can be seen as a synthesis factor.

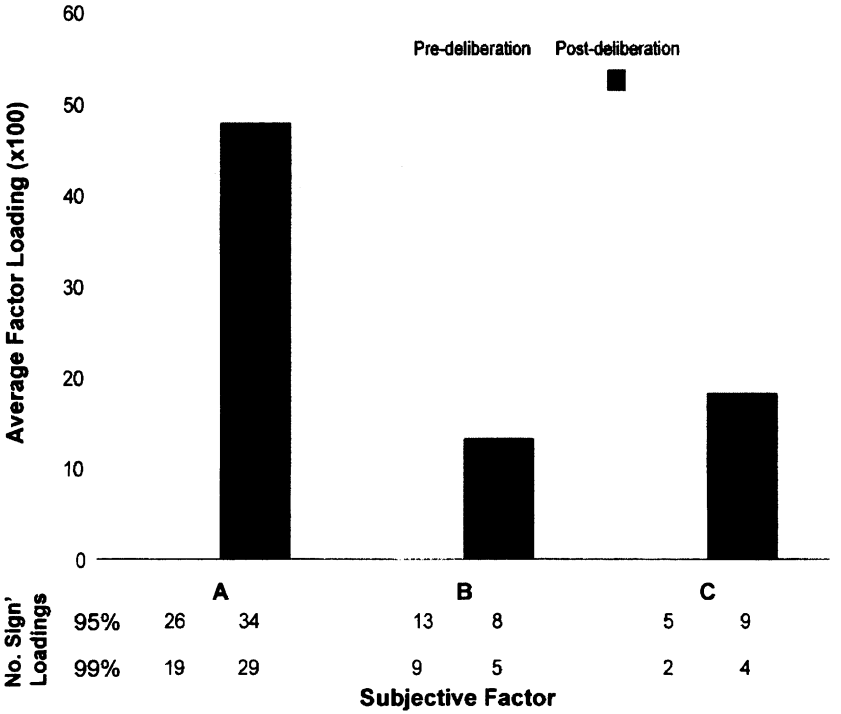
Changes Due to Deliberation

We now explore the changes that occurred to the Q sorts during the deliberative process. Figure 4 shows changes to average factor loadings. The bars in the Figure show the average factor loadings for each factor pre- and post-deliberation. A paired *t*-test shows that in each case there has been a significant change in the mean factor loading ($p<0.01$). However, mean factor loadings can be ambiguous, because they can include multiple small changes in factor loading or large changes for a small number of individuals.

Another way to look at the changes that occurred during deliberation involves counting those individuals who are significantly loaded on each factor pre- and post-deliberation. This approach entails determining the factor loading threshold beyond which an individual is deemed to be in concordance with a given factor. Using a 95% significance threshold, before deliberation there were 26, 13 and 5 individuals significantly loaded on factors A, B and C respectively. Following deliberation, the numbers were 34, 8 and 9. The results for the 99% level are 19, 9 and 2 pre-deliberation and 29, 5 and 4 post-deliberation. When individuals with confounded Q sorts excluded the pre- and post-deliberative numbers of individuals uniquely loaded on

each factor are 18, 9 and 1 and 21, 4 and 0. The results paint a slightly more dramatic picture than that using average factor loadings, particularly in the case of Factor A, for which both the number of individuals in agreement with the factor and average factor loading has increased.

Figure 4: Changes to Factor Loadings and Number of Significant Loadings



Overall these observations indicate that there has been an increase in agreement with the subjective position expressed by Factor A during deliberation, and to a lesser extent by Factor C. Factor B, by contrast, has experienced a decline in agreement. This is true both in terms of the average factor loading and the number of participants who can be said to be individually in agreement with each factor. In more descriptive terms there has been a shift in the subjectivity away from the position described by Factor B, involving concern for the heritage of the old bridge toward the more pragmatic concerns encapsulated by Factor A in the form of safety issues (particularly in respect to river navigation) and traffic flow.

If we look back at the analysis of preferences, there is a concurrent move in preference away from options that involve retaining the existing bridge in favour of options that replace it. The implications of these two observations are considered in the following discussion.

Discussion

The above analysis has shown that changes to the positions of participants in the Fremantle Bridge deliberative forum changed at both the preference and subjective levels. Preferences moved strongly in the direction of the position described by the first preference factor (Table 3), reflecting a preference for options that involve constructing a new bridge capable of catering for increased traffic as well as for river navigation. At the same time, there has been an increase in agreement with Factor A at the subjective level, which is primarily concerned with meeting the public safety and transport needs.

The concurrence of these two kinds of movement make sense to the extent that heritage issues are related to a desire to retain the bridge, which is less feasible if safety concerns are considered of uppermost importance. The actual correlations between factor loadings between the preference and subjective factors are shown in Table 4 for both the pre- and post-deliberative data. At both stages, Factor A is positively correlated to both the first and second preference factors, but by the end of deliberation the relationship is much stronger for the first preference factor. What this means is that, while both preference positions involve a new bridge, there is a move away from options that simply involve repairing the old bridge (and thereby failing to address fundamental safety issues).

Table 4. Correlation between Preference and Subjective Factors

		Subjective Factors		
		A	***B***	***C***
		Pre–Deliberation		
Preference Factors	***1***	0.50**	−0.31*	0.42**
	2	0.44**	−0.12	0.18
	3	−0.47**	0.35*	−0.23
		Post–Deliberation		
	1	0.78**	−0.35*	0.30
	2	0.51**	−0.17	−0.00
	3	−0.52**	0.57**	−0.01

Factor B, by contrast, tends to hold an opposing preference position to Factor A, the former being associated with the third preference factor, involving retaining the old bridge in its entirety. The relationship before

deliberation, however, is relatively weak, although it does get stronger afterward. But the position as a whole has declined.

In most cases, those who moved from the heritage position advocated by B simply moved to Factor A (and preference factor 1), although a small number did move toward C. The move reflected a decrease in salience in heritage concerns about the bridge in favour of more pragmatic issues such as safety and efficiency (Factor A).

Elsewhere, Niemeyer (2011) has explained this change in salience of issues in terms of what is more readily communicated in political situations that are less defined by ideal forms of deliberation, where individuals tend to take cognitive and intuitive short-cuts in arriving at their positions in relation to public issues. In the example of the Fremantle Bridge, the heritage issue is intuitively appealing—most participants had previously witnessed the aesthetics of the existing bridge. But the safety dimension, particularly in relation to river navigation, had been less salient, and not prominent in public discourse up to that point. Testimony and discussion around images of river traffic trying to negotiate the waters underneath the bridge led many to take seriously these issues. Consequently, there was a strong move in favour of options that address these safety issues, even to the detriment of heritage questions.

Conclusion: Role for Public Policy

If we consider that policy makers might have ordinarily based their decisions on the pre-deliberative information available in this study, it would be difficult to discern a way forward on the Fremantle Bridge issue. The pre-deliberative situation was contentious, with strongly competing claims. The application of a standard Q study would have gone some way to addressing the impasse, by clearly identifying the kinds of positions in operation, where they overlap and where they disagree. However, combining Q methodology with a deliberative process, where members of the public have the opportunity to engage with the issue and consider the implications of different alternatives provides a potentially powerful window into public policy making under ideal conditions. And combining the analysis with changes to preferences among policy options provides a more complete picture of the mind of the public.

Moreover, from a deliberative perspective it is arguable that the post-deliberative outcomes are more legitimate than those that would be obtained using standard voting or opinion surveys (Manin, 1987). However, there still remains a problem where the remainder of the community have not been able to engage with the issue at the same level (Parkinson, 2003). There is mixed evidence concerning whether wider acceptance of a deliberative process is likely to occur (Warren, 2009)—

and certainly there is often resistance from wider interest groups (Hendriks, 2006).

However, the application of Q methodology, particularly in the manner that has been reported here, does open up avenues for policy makers in progressing contentious public issues. First, the outcomes of a deliberative process provide a window into how the public might respond to the implementation of a decision in the future. Even if there is wider public resistance, there is usually a change in position once the actual impacts are realized, particularly if the community feels that it has been adequately engaged (for example, Devine-Wright, 2005).

In using Q methodology in conjunction with deliberation, it is not only possible to engage with, but also to understand, the mind of the public, both as it stands and how it might evolve. In the case of the Fremantle Bridge, decision makers were able to discern a relatively shallow commitment to heritage issues and the potential salience of safety, once effectively communicated and digested by the public. Focussing on those facets made salient during deliberation (and identified using Q methodology) facilitates the 'scaling up' of the outcome of deliberation to the wider public, although it is more difficult to replicate the ideal conditions found within the deliberative forum (Niemeyer, 2012).

References

Barabas, J. (2004). How deliberation affects policy opinions. *American Political Science Review, 98*(4): 687–701.

Blaug, R. (1997). Between fear and disappointment: Critical, empirical and political uses of Habermas. *Political Studies, 45*: 100–117.

Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. New Haven, Yale University Press.

Bruce, D. (2006). *Future of the Fremantle Traffic Bridge: Calibrated deliberative survey results: Full Report*. Perth: Main Roads Western Australia.

Converse, P. E. (1970). Attitudes and non-attitudes: Continuation of a dialogue. In E. R. Tufte (Ed.), *The quantitative analysis of social problems* (pp. 168–189). Reading, MA: Addison-Wesley.

Cook, T. J., Scioli, F. P. J., & Brown, S. R. (1975). Experimental design and Q methodology: Improving the analysis of attitude change. *Political Methodology, 2*(1): 51–70.

Devine-Wright, P. (2005). Local aspects of UK renewable energy development: Exploring public beliefs and policy implications. *Local Environment, 10*(1): 57–69.

Dryzek, J. S. (1990). *Discursive democracy: Politics, policy and political science*. Cambridge: Cambridge University Press.

Dryzek, J. S. (1993). Reconstructive democratic theory. *American Political Science Review, 87*(1): 48–60.

Dryzek, J. S. (2009). Democratization as deliberative capacity building. *Comparative Political Studies, 42*(11): 1379–1402.

Elster, J. (1986). The market and the forum. In J. Elster & A. Hylland (Eds.), *Foundations of social choice theory* (pp. 103–122). Cambridge: Cambridge University Press.

Expositor. (1992). A note on measuring changes in Q factor loadings. *Operant Subjectivity, 15*(2): 56–61.

Farrar, C., Fishkin, J. S., Green, D. P., List, C., Luskin, R. C., & Levy Paluck, E. (2010). Disaggregating deliberation's effects: An experiment within a deliberative poll. *British Journal of Political Science, 40*(2): 333–347.

Fishkin, J. S. (2003). Consulting the public through deliberative polling. *Journal of Policy Analysis and Management, 22*(1): 128–133.

Freie, J. F. (1997). The effects of campaign participation on political attitudes. *Political Behavior, 19*(2): 133–156.

Hartz-Karp, J. (2005). A case study in deliberative democracy: Dialogue with the city. *Journal of Public Deliberation, 1*(1): Article 6. Available at: http://www.publicdeliberation.net/jpd/vol1/iss1/art6.

Levasseur, D. G., & Carlin, D. B. (2001). Egocentric argument and the public sphere: Citizen deliberations on public policy and policymakers. *Rhetoric & Public Affairs, 3*: 407–431.

Lipgar, R., Bair, J. P., & Fichtner, C. G. (2000). Integrating research with conference learning: Ten years of Q methodological studies exploring challenges, insights and implications. *Operant Subjectivity, 24*(1): 1–24.

MainRoads WA (2006). *Future of Fremantle Traffic Bridge. Community engagement process.* Perth: Main Roads Western Australia.

Manin, B. (1987). On legitimacy and political deliberation. *Political Theory, 15*(3): 338–368.

Moten, D., & Niemeyer, S. J. (2008). AdvanceQ [Java based computer program]. The Australian National University.

Niemeyer, S., Petts, J., & Hobson, K. (2005). Rapid climate change and society: Assessing responses and thresholds. *Risk Analysis, 25*(6): 1443–1456.

Niemeyer, S. J. (2011). The emancipatory effect of deliberation: Empirical lessons from mini-publics. *Politics & Society, 39*(1): 103–140.

Niemeyer, S. J. (2012). From the minipublic to a deliberative system: Is scaling up deliberation possible? Deliberative Democracy in Action. 7–8 June. University of Åbo.

Niemeyer, S. J., Ayirtman, S., &. HartzKarp, J. (2008). Achieving success in large scale deliberation: Analysis of the Fremantle Bridge Community Engagement Process. Canberra: Centre for Deliberative Demcracy and Global Governance, Research School of Social Sciences, The Australian National University. http://deliberativedemocracy.anu.edu.au/sites/default/files/niemeyeretal2007.pdf.

Parkinson, J. (2003). Legitimacy problems in deliberative democracy. *Political Studies, 51*: 180–196.

Pelletier, D., Kraak, V., McCullum, C., Uusitalo, U., & Rich, R. (1999). The shaping of collective values through deliberative democracy: An empirical study from New York's north country. *Policy Sciences, 32*: 103–131.

Smith, G. (2009). *Democratic innovations: Designing institutions for citizen participation*. Cambridge: Cambridge University Press.

Warren, M. E. (1992). Democratic theory and self-transformation. *American Political Science Review, 86*: 8–23.

Warren, M. E. (2009). Two trust-based uses of mini-publics in democracy. Conference on Democracy and the Deliberative Society. 24–26 June, University of York. http://papers.ssrn.com/sol3/papers.cfm?abstract_id_=1449781.

Warren, M. E. (1992). Democratic theory and self-transformation. *American Political Science Review, 86*: 8–23.

Appendix: Factor Array

No	*Statements*	*A*	*B*	*C*
1	Replacing timber elements with steel components would destroy the authentic appearance of the bridge.	0	0	−5
2	Alterations will lead to nothing but the uglification of the bridge.	−1	−3	−4
3	The bridge has stood the test of time for the past 67 years; there's no need for major changes to it.	−4	−2	−3
4	The safety of the bridge is more important than its appearance.	3	0	4
5	The main concern is to have a bridge that underpins the economic activities in the region.	1	−3	2
6	The function of the Fremantle Bridge as a transport gateway is more important than its heritage.	1	−4	−1
7	There are no specific economic benefits for Fremantle from the bridge.	−1	−3	−2
8	The problem is not the vulnerable structure of the bridge but excessive traffic, which should be reduced.	−2	0	0

No	*Statements*	*A*	*B*	*C*
9	As long as there is a bridge that I can cross, I don't care about its structure.	−2	−5	−2
10	We should definitely preserve the heritage value of the bridge, but only if it is financially viable.	0	−1	0
11	Taxpayers' money should be spent on services that are more essential than upgrading the bridge.	−2	−2	−1
12	It is worth spending money to retain the iconic status of the bridge	−1	2	−2
13	We shouldn't stick to the past when deciding about the future of the bridge, we should be open for modern design options.	3	−2	4
14	The bridge is certainly an attractive entry statement to Fremantle and without doubt far more important than trucks.	−2	1	−4
15	The Fremantle Bridge is irreplaceable. It is a strong, enduring part of our history.	−3	3	−1
16	Reducing the risk of vessel collision on the Swan River should be the main consideration when deciding about the future of the bridge.	2	−2	3
17	It is most important that the solution is a long term one.	4	3	3
18	River craft deserve better traffic conditions on the Swan River.	1	−1	1
19	Altering or replacing the existing Fremantle Bridge means diminishing Fremantle.	−5	−1	−3
20	Whatever works are undertaken, the heritage value of the old bridge will be affected.	0	1	−2
21	The old bridge provides a scenic entrance to Fremantle that attracts tourists.	−3	1	−1
22	The cost of maintaining the old timber structure is too high.	2	−1	0
23	Providing better pedestrian and cycle traffic should be the main consideration when deciding about the future of the bridge.	0	0	2
24	The old bridge will never be able to handle vehicles, bikes and pedestrians at the same time.	2	−1	2
25	The most important thing is that access to Fremantle from its north is maintained in the most undisturbed manner as possible.	1	1	0
26	The most important issue for cyclists is safety, which means they need access across the bridge which has a good surface.	2	1	−1

No	*Statements*	*A*	*B*	*C*
27	Since the traffic bridge has important heritage significance, the only grounds for its removal should be on the grounds of serious safety issues and verified by heritage engineers.	−1	5	2
28	The existing bridge is too low; archways too narrow and do not line up with the railway bridge making navigation dangerous.	3	0	3
29	The critical infrastructure of the bridge raises serious safety concerns.	4	2	1
30	Safe and efficient movement of all road and river users across and under the bridge should be the main considerations.	5	2	1
31	Any changes to the bridge should give right consideration to the environment.	1	4	1
32	We just got traffic calming in Town Centre after 25 years effort. I don't want bridge to be built bigger, better faster to reverse the gains of the last 25 years.	−1	0	0
33	This magnificent timber bridge is a rare and beautiful sight in today's world, it should be preserved.	−3	2	−3
34	When deciding about the future of the bridge, indigenous concerns should be given adequate consideration.	0	4	5
35	The Fremantle Traffic Bridge is the most iconic landmark and the main tourist attraction in Fremantle.	−4	−4	1
36	Indigenous people would want to minimize impact on the Swan River, a registered site that is of importance and significance to them.	0	3	0