

Deliberation and Intra-Attitudinal Complexity

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Abstract

American civil discourse suffers from the incivility of its rhetoric and the relative disengagement, ignorance, and bias of its citizenry. Without the space or motivation to discuss serious issues in a sober tone, discussion of serious topics devolves into name calling, sloganeering, and a general avoidance of the problems facing the country. Deliberative democratic theory – a normative model of democracy in which citizens engage in effortful, unbiased, reason-based deliberations with one another in service of finding and implementing a common good – has been advanced as a possible remedy to our civic shortcomings (Gutmann & Thompson, 2004). Extant research has shown that properly constructed deliberative environments increase participants' topic-specific knowledge and alter participants' attitudes. The study detailed here extends this line of research by examining deliberation's ability to induce complex attitudes, those with both a positive and negative evaluation of the attitude object. Further, it tests deliberation's ability to do so relative to non-deliberative alternatives in both a general sample and among those likely most and least ready to engage in deliberation. A process model of complexity induction and maintenance is presented and deliberation's relative ability to retain the complexity induced is assessed. Results indicate that deliberation yields comparable or lesser degrees of intra-attitudinal complexity in the short term and no advantage or deficit in the long term. Implications for the study of deliberation and measurement of intra-attitudinal complexity are discussed.

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Chapter 1: Introduction

“The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function.”

- F. Scott Fitzgerald (1936)

We do not live in a golden era of American civil discourse. Recent years have brought the subversion of legitimate campaign issues to sexist and Islamo-phobic screeds (Seelye & Bosman, 2008; Bellantoni, 2008), verbal aggression towards elected officials (“Health Care Town Halls,” 2009), a notorious and disrespectful outburst during a Presidential address to Congress (Hulse, 2009), the notable presence of automatic weapons at Presidential appearances (Stone, 2009), and a viable U.S. Senate candidate advocating “Second Amendment remedies” for a Congress with which one disagrees (Wolf, 2010). Calls for more reasoned discourse arose sporadically, as when President-elect Obama asked Americans to “disagree without being disagreeable” (Obama, 2008) or in the wake of the failed assassination attempt of an Arizona Congresswoman (Przybyla, 2011), but one is hard-pressed to find examples of reasoned, measured, substantive public discourse. Beyond the endless incivility, there exists a substantial gulf between the assumptions of normative democratic theories about citizen abilities and actual citizens’ habits and capabilities. Forty years of scholarship on the public’s political sophistication has called into question whether the public holds meaningful political preferences (e.g., Converse, 1964), has the basic knowledge to form them (Delli Carpini & Keeter, 1996), is chronically willing to engage in the effortful thought (Petty & Cacioppo, 1984) necessary to participate in self-government or even wants to (Hibbing & Theiss-Morse, 2002). Far from the thoughtful and rational actors portrayed by democratic theorists, actual citizens are

“strategic processors” (Fiske & Taylor, 2008) who selectively attend to congenial information (Eagly, Chen, Chaiken, & Shaw-Barnes, 1999), counter-argue uncongenial information (Eagly, Kulsea, Brannon, Shaw, & Hutson-Comeaux, 2000), process information only insofar as they feel insufficiently confident (Chaiken, Giner-Sorolla, & Chen, 1996), and hold attitudes to protect the self (Katz, 1960) or bolster self-esteem (e.g., Cialdini, et al., 1976). If the social discourse precludes reasoned consideration of policy alternatives and the public cannot accurately specify its policy preferences (Bartels, 1996; Lau & Redlawsk, 2001), meaningful democratic self rule is in considerable peril.

There may be hope, however. Deliberative democracy, a political system in which citizens actively engage in the decision-making processes of their community and are far more informed than are actual citizens, has become increasingly popular among political theorists and scientists (Chambers, 2003; Mutz, 2008; Thompson, 2008). The theory rests on the implicit assumption that a properly constructed deliberative setting can shut out uncivil and distracting rhetoric and override individuals’ tendency to process information superficially, thereby facilitating complex, unbiased reasoning (e.g., Chaiken, et al., 1996; Petty & Cacioppo, 1984; Tetlock, 1983). Political talk is thought to approach the deliberative ideal to the extent that citizens are more knowledgeable about the topic under consideration, recognize the legitimacy of uncongenial information, and are motivated to find solutions that respect the appropriately supported opinions offered by all participants (Chambers, 2003). By stressing the development of preferences rather than their mere expression, deliberative democracy requires citizens to engage in more thorough processing than they otherwise

might. Citizens in a deliberative democracy ought to accumulate, elaborate upon, and value information that supports and opposes their preferences; detect the various ways in which alternative proposals might affect society; engage in unbiased and considered discussion with other citizens; seek common ground or overarching values that might facilitate collective decision-making; remain willing to revise preferences in light of new evidence; and regard as legitimate those outcomes that run counter to one's preferences (Chambers, 2003; Gutmann & Thompson, 2004).

Engaging in these deliberative efforts, proponents claim, ought to remedy the twin challenges to meaningful democracy outlined above. By definition, deliberative sessions create space for dispassionate, reasoned consideration pertaining to a challenge facing a community. If followed, the guidelines for deliberation are thought to yield informed, engaging, contemplative, and unbiased discussion. Indeed, proponents argue that engaging in deliberation ought to yield a host of desirable outcomes, from improved decision quality to heightened perceived legitimacy of political decisions, from greater trust in government and one's fellow citizens to greater tolerance (Muhlberger, 2005). Evidence for these claims is thin. Moreover, deliberation's impact on participants' attitudes has not yet been fully explored. This dissertation extends existing research on the relationship between deliberation and policy attitudes by examining its impact on attitudinal complexity, assessing the extent to which situational forces can be marshaled to narrow the gap between the society deliberative democratic theorists foresee and the one in which citizens currently make political decisions.

Starting from deliberative democratic theory and drawing on basic social-psychological processes of attitude formation and retention, this dissertation goes

further than extant research on deliberation by pushing past its impact on attitude valence (Farrar, Fishkin, Green, List, Luskin, & Paluck, 2006; Fishkin, 1996). Instead, the focus of the current research is the complexity¹ of the attitudes deliberation creates. Complexity and nuance are critical if the rhetorical and participatory challenges detailed above are to be addressed. To wit, if deliberating persuades an individual to adopt or alter a policy preference but leaves him as biased, defensive, and unengaged as he was when he entered, then deliberation has only shifted the distribution of players in an unproductive democratic exercise: the same angry voices, now on different sides of the debate. For deliberation to provide a true counterweight to aggressive rhetoric and citizens' shortcomings, it has to change the nature of the attitudes they hold. It has to leave attitudes more considered, more nuanced, more complex.

This opening chapter has several aims. First, it provides a more thorough accounting of deliberative democratic theory and the deliberation process, as well as an overview of the empirical work on deliberation's impact. Second, attitudinal complexity is addressed and the nature of several specific instantiations considered. Third, the social-psychological evidence for deliberation's ability to induce complexity is reviewed; theory and evidence are marshaled in support of, and then in opposition to, theorists' notion that deliberation should create more sophisticated, thoughtful citizens. Fourth, in light of these two lines of argument, a double-mediated process model is proposed to link deliberation and attitudinal complexity. Fifth, the requirements for

¹ The terms "complex" and "complexity" will be used throughout to refer to attitudes formed from a broader class of information than one might expect from a biased or unmotivated information processor. Whether affording greater importance to attitude-inconsistent information, or considering a greater number of issues related to an attitude object (e.g., ice cream's taste, health benefits, and expense) than one might otherwise (e.g., taste), complex attitudes, as used here, incorporate information that might typically be discounted, discarded, or undervalued.

successful deliberation are revisited, and participants' "readiness" for the task is considered as a potential moderator of deliberation's impact. Finally, the prospects for a more deliberative society are considered by addressing the extent to which deliberation-induced complexity ought to persist over time. In each section, specific hypotheses – addressed empirically in subsequent chapters – follow a review of the relevant literature.

Deliberation: Theory and Practice

Although there is no consensus statement of deliberative democratic theory (see Mutz, 2008) or official guide for deliberative forums – and thus no formal declaration of the tasks and responsibilities incumbent upon participants (but see Muhlberger, 2007, for an initial attempt to quantify the practice) – most conceptions share several core features. These features are intended to create environments in which citizens jointly construct and articulate a *common* good, which is then used to choose between policy alternatives (Cohen, 1989). First, citizens must endorse the deliberative process itself, explicitly acknowledging its legitimacy and the legitimacy of the outcomes it will produce (e.g., Cohen, 1989; Estlund, 1997). Without an express understanding that the process is appropriate and binding, the policy recommendations it produces lack merit. Second, within the deliberation itself, effort should be expended to include individuals with varied interests and experiences (equality) so as to best capture the diversity needed to accurately define the common good. Third, powerful groups or majorities must be prevented from dominating and thereby derailing deliberation (non-tyranny). Fourth, each citizen must make available and comprehensible (Gutmann & Thompson, 2004) the reasons for his or her preferences (publicity). This is sometimes called the

“reason-giving” requirement (e.g., Gutmann & Thompson, 2004), and forms the backbone of deliberative democratic theory. Citizens are expected to provide logical arguments in service of their preferences and to be prepared for those arguments to be tested. If arguments are not provided they ought to be solicited, a process some theorists see as the true heart of deliberative democracy (Shapiro, 2002). Fifth, citizens must respect and consider others’ opinions and their underlying rationale (reciprocity) (Conover & Searing, 2005) and be willing to revise their own preferences in light of others’ arguments (Chambers, 2003).

Although the development of deliberative democracy has largely been a theoretical enterprise, a growing body of research supports theorists’ notion that individuals are capable of deliberation (Mendelberg, 2002; Reykowski, 2006). Under the right conditions, people can overcome the shortcomings detailed at the outset of this dissertation. Moreover, taking part in a properly-run deliberation has consistently been shown to impact policy preferences and involvement in democratic institutions (Farrar, Fishkin, Green, List, Luskin, & Paluck, 2006; Fishkin, 1991; Gastil & Dillard, 1999; Luskin, Fishkin, & Jowell, 2002; Schkade, Sunstein, & Hastie, 2006). Luskin and Fishkin’s Deliberative Polling paradigm constitutes the most sustained and systematic investigation (e.g., Fishkin, 1996) and their methodology merits closer examination. A random national sample of voting-age citizens report their political preferences and topic-specific knowledge during a phone interview. Respondents interested in participating in a weekend-long deliberative forum are mailed a packet of unbiased information about the topic to be discussed and are asked to review it in advance of the weekend. During the weekend itself, participants engage in moderator-facilitated

deliberation, hear from and ask questions of panels of experts, and may even interact with political leaders (Fishkin, 1991, 1996). At the conclusion of the weekend, participants complete the knowledge and preference instruments used in the initial phone survey. Thus, in most deliberative polls, the entire process serves as a pre-post within-subjects manipulation. In poll after poll, this gross manipulation yields knowledge gains that, in turn, are associated with attitude change (Farrar et al., 2006; Luskin et al., 2002).

There are, however, boundary conditions associated with these outcomes. Knowledge gains and the resultant attitude change are significantly greater for issues to which participants have likely not given considerable thought, or for which no decision-heuristic is readily available. For example, in one deliberative poll, participants considered changes to a local airport as well as a tax revenue-sharing proposal between a city and surrounding suburbs. The former had been widely covered in local newspapers, the latter largely unmentioned. Deliberation yielded substantially lower knowledge gains and attendant attitude change for the well-publicized airport proposal than for the previously-unknown revenue-sharing proposal (Farrar et al., 2006). A similar pattern was found when British participants considered low salience (defendants' rights) and high salience (capital punishment, making prison life more unpleasant) criminal justice issues (Fishkin, 1996; Luskin, et al., 2002). In short, pre-existing issue-relevant knowledge limits the impact of deliberation on attitudes.

Successful deliberation is also contingent upon the situation in which individuals deliberate. To date, no formal assessment has been conducted to determine the conditions necessary to generate knowledge gains and attitude change. Nonetheless,

comparisons of various deliberation-like settings suggests that citizens are better able to engage in deliberation to the extent that the deliberative setting matches the *desiderata* articulated by deliberative theorists. Mendelberg's (2002) review of group decision-making – in service of evaluating deliberation's potential – makes plain the pitfalls: pursuit of self- rather than group-interest, maintenance of *a priori* group allegiances, undue majority influence, reliance on emotion rather than reason, and the influence of pre-existing skills and competencies (e.g., education or command of language). In one poignant example of deliberation's potential to fail, researchers (Schkade et al., 2006) staged discussions that purposely failed to meet deliberative democratic ideals. In Sunstein and colleagues' effort (Schkade et al., 2006), small groups (5 people) of ideologically homogenous participants discussed a topic for 15 minutes with the explicit goal of reaching consensus. A "monitor" was appointed to keep the group on track (rather than encourage diversity of opinion and ensure equal involvement for all participants). No information was given before the deliberation began, and the issues discussed – environmental regulation, affirmative action, and gay marriage – were among the most salient in the public discourse. The result was "ideological amplification": movement towards attitudes that are more extreme but intellectually consistent with one's original position (e.g., Moscovici & Zavalloni, 1969; Schkade, Sunstein, & Kahneman, 2000). By purposefully failing to meet any of the criteria for deliberation, the organizers demonstrated that discussion by itself is insufficient for, and may even work against, deliberative democracy's aims.

In short, the extant literature demonstrates that deliberation, properly constructed and controlled, provides a forum in which individuals can and do

thoughtfully consider policy information and its implications, allows individuals to overcome their tendencies towards bias and/or disengagement, and influences policy preferences. To date this literature has focused primarily on the valence of participants' attitudes. Left unaddressed is whether such situations foster more complex, nuanced attitudes. Deliberative democratic theory does not explicitly address the complexity of beliefs that deliberators hold but its focus on articulating a common good (Gutmann & Thompson, 2004), logically implies the need to consider and reconcile alternative points of view and competing interests. Without an understanding and acceptance of the merits of alternative proposals, no truly common good can emerge. Moreover, a crucial yet largely ignored feature of deliberative democratic theory is that decisions made within deliberative sessions ought to be provisional: binding, but not final (Gutmann & Thompson, 2004). If conclusions are provisional, decisions ought to be reconsidered as novel evidence emerges. Citizens who hold more complex representations of issues – those who consider an issue from multiple perspectives or see merit on both sides of an argument – ought to be more sensitive to the emergence of novel information that would warrant reconsideration of the topic. When citizens ignore alternative perspectives, or discard and discount uncongenial information, they undermine the likelihood of future deliberation on the subject. In doing so, they undermine the broader deliberative enterprise itself. Indeed, the complexity of citizens' representations of issues may be a lynchpin in the successful execution of a deliberative session (Karpowitz & Mansbridge, 2005) and, over time, a deliberative society.

If complexity is truly so important, it is incumbent upon deliberation researchers to better understand the nature of attitudinal complexity and to assess the extent to

which deliberation affects it. The following section outlines several kinds of attitudinal complexity and makes the argument that three qualitatively different measures of intra-attitudinal complexity embody the kind of complexity deliberation ought to induce. After addressing complexity itself, the social-psychological rationale for deliberation's ability – and inability – to instill it is addressed in full.

Attitudinal Complexity

To fully assess deliberation's impact on attitudinal complexity, it is important to approach the concept broadly. Deliberation may yield certain types of complexity but not others; for example, deliberation may broaden the kinds of arguments one makes on behalf of a previously held position but fail to lead individuals to see greater validity in counter-attitudinal arguments. Any account of deliberation's impact must specify exactly what it can and cannot accomplish.

There are several forms of attitudinal complexity that could have been addressed here. From the broadest to the most narrow, the options include: (a) *vertical constraint*, the relationship between attitudes and broader, overarching values like egalitarianism or autonomy;² (b) *interattitudinal complexity (horizontal constraint)*, the consistency

² Complexity was not operationalized as a conflict of values or other higher-order constructs (Tetlock, 1986) or as the relationship between attitudes and higher-order constructs (vertical constraint; see Peffley and Hurwitz, 1985) because, although it is likely that concerns about egalitarianism, religiosity, freedom, and security underlie certain issues (e.g., abortion), they are further removed from the mundane topics likely to be addressed in deliberative forums. Participants might employ them if induced to link their beliefs to core values (Lavine, Thompsen, and Gonzales, 1997), but it is unclear to what extent such considerations arise spontaneously for issues like tax-revenue sharing or the expansion of a local airport (e.g., Farrer, et al., 2006). In that competing cognitions function like competing values (Alvarez and Brehm, 1995; Lavine, 2001) but only the former are explicit in any given deliberative forum, intra-attitudinal complexity was chosen over a value-based operationalization.

between participants' attitudes towards a variety of related attitude objects,³ (c) *inter-component complexity*, the relationship between attitude components (e.g., affect and cognition) within a single attitude⁴, and (d) *intra-attitudinal complexity*, the relationship between distinct positive and negative evaluations of a single attitude object. This dissertation adopts the final conceptualization.

Traditional attitude measurement and theory (e.g., Eagly & Chaiken, 1995; Fazio & Towles-Schwen, 1999) presume that an attitude object is tied to a single evaluative tag, theoretically precluding the kind of complexity investigated here. Within this model, were one interested in studying intra-attitudinal complexity, the phenomenon would have to be inferred from the endorsement of the midpoint of a bipolar scale. Of course, such inference is problematic in that one cannot determine whether such endorsement connotes ambivalence, indifference, or a truly neutral evaluation. Petty and colleagues' Meta-Cognitive Model (MCM) (Petty, Brinol, & DeMarree, 2007), by contrast, allows for the simultaneous possession of positive and negative evaluations of the same attitude object, making intra-attitudinal complexity not only possible but potentially commonplace. The model also adds a validity tag to each valenced evaluation and allows the links connecting each element to vary in accessibility. The model represents the latest salvo in a forty year effort to define the relationship between the positive and negative aspects of an attitude object as a

³ Inter-attitudinal complexity was not chosen because, by design, the deliberation topic was mostly unknown and unrelated to other policies, as in extant successful Deliberative Polling exercises.

⁴ Inter-component complexity (e.g., holding oppositely-valenced cognitions and affect) was not chosen because deliberative democratic theory places a heavy premium on rationality and reason-giving, but neither the deliberative situation nor topic discussed affords much room for the development of affect towards the policy issue.

bivariate rather than bipolar (Cacioppo & Berntson, 1994; Edwards & Ostrom, 1971; Klopfer & Madden, 1980). Consistent with early theoretical work in this tradition (Scott, 1966), when measures allow respondents to report separately their positive and negative evaluations of an attitude object, responses tend towards independence (Kaplan, 1972). Individuals can and do simultaneously hold attitudes that differ in valence about a given attitude object (de Liver, van der Pligt, & Wigboldus, 2007; Newby-Clark, McGregor, & Zanna, 2002). Within the MCM, intra-attitudinal complexity arises to the extent that an individual holds comparably extreme positive and negative evaluations of a single attitude object, both of which are valid, have comparably strong links between the attitude object and the evaluation, and have comparably strong links between the evaluation and the validity tag (Petty et al., 2007; Petty & Priester, 1996).

To understand the extent to which deliberation induces intra-attitudinal complexity, three operationalizations of the construct were employed in the current investigation.

Attitudinal ambivalence. Attitudinal ambivalence, also described as “potential ambivalence” (Newby-Clark, et al., 2002), is the most straightforward and face-valid measure of attitudinal complexity. It is simply a measure of the extent to which an individual holds both favorable and unfavorable evaluations of a given attitude object. By measuring each valence separately, factoring in the extremity of the two evaluations, and considering their similarity, researchers have proposed several formulas to determine the extent to which individuals are pulled in two directions by their evaluations (see Breckler, 1994, for comparison of formulas). Attitudes are considered

to be more ambivalent to the extent that both the positive and negative evaluations are more extreme and more similar to one another, topping out when an individual has a strong positive and strong negative evaluation of the same object.

Traditionally, attitudinal ambivalence was assumed to be psychologically discomforting (Heider, 1946; Festinger, 1957). Indeed, even the anticipation of counterattitudinal information can induce discomfort (Priester, Petty, & Park, 2007). However, work on ambivalence *per se* has demonstrated that attitudinal ambivalence need not yield felt ambivalence. Only when an individual holds conflicting beliefs that are equally and highly accessible (de Liver, et al., 2007; Newby-Clark, et al., 2002) and the individual holds a high need for consistency (Newby-Clark et al., 2002) is the relationship between attitudinal and felt ambivalence moderate to strong ($r = .5$ to $.6$). Other work sets the bar higher. Attitudinal ambivalence has been shown to yield felt ambivalence ($r = .58$) only when individuals anticipate having to act on their attitudes (Armitage & Arden, 2007; see also de Liver, van der Plight, & Wigboldus, 2007a, as cited in van Harreveld, van der Pligt, & de Liver, 2009); the relationship between attitudinal- and felt-ambivalence is weak ($r = .16$) when one simply thinks about performing a behavior (Armitage & Arden, 2007). Accordingly, attitudinal ambivalence is regarded as distinct from felt ambivalence.

Integrative complexity. Integrative Complexity (Tetlock, 1986) – the extent to which individuals perceive multiple considerations when evaluating a policy (differentiation) and work to reconcile the resultant conflict (integration) – constitutes a related yet distinct conceptualization of intra-attitudinal complexity. Beyond simply acknowledging that there is merit to both sides of an argument, integrative complexity

measures the extent to which an individual demonstrates intra-attitudinal complexity when describing an attitude object. To illustrate, an individual who considers the economic, environmental, and national security implications of a policy has demonstrated greater differentiation than one who considers the issue solely in light of its national security implications. Presuming that one has identified multiple considerations for a given issue, one can then proceed to a) integrate them by offering decision rules for balancing the multiple, off-setting considerations, or b) articulate why people might reasonably choose different positions on the issue in light of the available evidence (e.g., people might rank the importance of the various considerations differently).

Although no extant research details the empirical or conceptual overlap of attitudinal ambivalence and integrative complexity, the operational definitions of the two constructs suggest they are similar yet distinct. First, consider the conceptual overlap between the two constructs. Integrative complexity's "differentiation" component closely resembles attitudinal ambivalence: Consciously acknowledging and specifying multiple considerations when weighing a policy's merits (differentiation) is not terribly different from holding a positive evaluation of a policy based on its economic implications but negative evaluation based on its environmental impact (attitudinal ambivalence). Furthermore, like attitudinal ambivalence, integrative complexity varies as a function of extremity and similarity: Differentiation and integration are more likely to the extent that the values implicated when considering an issue are important to the individual (extremity) and are similarly important (similarity) (Tetlock, 1986). Accordingly, an individual would demonstrate a more integratively

complex representation of a given policy if it invoked competing values that an individual ranked 3rd and 4th out of 12 possible values than if it invoked values ranked 6th and 7th (less important) or values ranked 1st and 8th (greater difference in ranked importance). With objectively and similarly important values implicated, individuals are simply more likely to acknowledge more than one side of an issue when addressing a topic.

Similarities notwithstanding, the two constructs likely differ. Explicitly labeling the considerations one employs in making an evaluation (integrative complexity) may make integrative complexity a more difficult task than is merely evaluating the positive and negative aspects of an attitude object (attitudinal ambivalence). Asking individuals to go further by reconciling competing beliefs (integration) further differentiates the attitudinal ambivalence and integrative complexity. Integrative complexity constitutes a “next step” in the assessment of deliberation’s impact on intra-attitudinal complexity, one that requires the implementation of complexity rather than its mere acknowledgement.

Organization of recall. A third conceptualization of intra-attitudinal complexity addresses how individuals structure topic-relevant information in memory. Assuming a semantic network model of memory (see Raaijmakers & Shiffrin, 1992, for a review), to the extent that an individual holds a complex representation of an attitude object, different categories of considerations (e.g., environmental and financial) should be linked in memory such that priming a consideration from one category (e.g., environmental #1) should make other considerations more accessible, be they in the same or another relevant category (e.g., environmental #2, financial #1). By contrast,

among individuals with less complex representation, priming a consideration from one category (e.g., environmental #1) should induce greater accessibility of same-category considerations (e.g., environmental #2) but not affect the accessibility of considerations from other categories (e.g., financial #1).

As the description above suggests, reaction times on lexical decision tasks following within- or between-category subliminal priming is one way to assess the structure of an individual's memory. Examining the order and pattern of recalled information is another, and the method employed here. To the extent that an individual holds a legitimately complex representation of an attitude object, that pattern should be reflected in the structure of individuals' memory. If the information recalled is ordered such that several items from one category precede several from a second (e.g., AAABBB), one can infer that the two sets of consequences are represented as qualitatively different entities (Cacioppo, von Hippel, & Ernst, 1997). If the items from several categories are recalled in a more alternating pattern (e.g., ABABBAB), one can infer that the two categories are linked in memory. By specifying the relevant categories *a priori*, the extent to which participants' memory is organized can be examined.

The complex organization of memory may be the most difficult form of complexity to induce in the current context. It is, however, the most important. To the extent that deliberative outcomes ought to be provisional and revisited periodically, complexity stored in memory would facilitate potential deliberators' ability to understand whether subsequently encountered information affects the balance of beliefs on which the attitude is based and therefore to call for re-examination of the topic.

Summary. Deliberation has been described, intra-attitudinal complexity detailed. The question, then, is whether deliberation conducted within situations that adhere to the prescriptive norms of deliberative democracy can imbue citizens with complex attitudes. In the section that follows, the relevant social-psychological literature is employed to make the case for, and against, deliberation's ability to instill intra-attitudinal complexity.

Question 1: Deliberation and Intra-Attitudinal Complexity Induction

Should deliberation instill intra-attitudinal complexity? In short, the answer is both unclear and unaddressed. Several psychological processes inherent in the deliberative setting suggest that deliberation can and should instill complex attitudes. By contrast, over a half century's worth of research on the power and importance of cognitive consistency, coupled with work highlighting low-effort and biased processing, make plain the difficulties of inducing complexity. Each argument is addressed in turn, after which non-deliberative alternatives are introduced as comparison standards; beyond the question of whether deliberation should induce complexity is whether it should do so more effectively than cheaper, simpler alternatives. In the end general hypotheses are offered; to foreshadow, the main premise of the dissertation is that deliberating ought to instill more intra-attitudinal complexity than other means of information acquisition and consideration.

Why deliberation should instill complexity. Quite separate from an investigation of deliberation's impact, Rudolph and Popp (2007) proposed a process model for the induction of ambivalence. Following from the elaboration likelihood model (Petty & Cacioppo, 1986), their model presumes that ambivalence is more likely

to arise to the extent that a) the information one considers is complex and b) individuals are motivated to systematically process that information and have the ability to do so. More thorough engagement with complex materials ought to increase the amount and diversity of information that informs an overall evaluation. According to the model, and in line with Petty et al.'s (2007) meta-cognitive model, ambivalence should arise when individuals "endorse" (i.e., tag as valid) favorable and unfavorable information about the attitude object in relatively equal measure.

If information and engagement drive complexity induction (Rudolph & Popp, 2007), deliberation ought to induce intra-attitudinal complexity. Deliberation's ability to provide each factor is addressed below.

Information. First, consider the information presented. As intimated above and detailed in Chapters 2 and 3, the information presented to participants explicitly argued for and against the topic under consideration (an urban public transportation proposal) from multiple perspectives. Considerable work – most of which relies on self-reported conversations with others who agree or disagree with one's political beliefs – supports the notion that the presence of a diverse set of information might, itself, yield more complex attitudes. Respondents in the 2000 American National Election Study were more attitudinally ambivalent about their presidential choice to the extent that their self-reported political discussion group was heterogeneous with regard to presidential preference (Huckfeldt, Mendez, & Osborn, 2004; Keele & Wolak, 2008). Members of heterogeneous networks were better able to offer reasons to support and oppose both candidates than were respondents from more homogenous networks, who were predominantly limited to offering arguments in support of their preferred candidate and

against his opponent (Huckfeldt, et al., 2004). Similarly, more frequent (self-reported) discussion and disagreement about politics is associated with greater ability to offer arguments in support of policy stances to which one is opposed (Price, Cappella, & Nir, 2002). Even simple exposure to two-sided messages can induce attitudinal ambivalence (Broemer, Jonas, & Diehl, 2000); heavy campaign spending by both parties – thus creating a situation with diverse opinions – is associated with greater citizen ambivalence (Keele & Wolak, 2008). Opinion diversity – whether encountered through discussion or media exposure – facilitates attitudinal complexity.

With complex information available, deliberation's ability to induce complexity rests with engagement. Following the ELM, that means considering participants' motivation and ability. Deliberation's ability to provide each requirement is addressed in turn below.

Engagement.

Motivation. Availability of complex information is no guarantee that participants will engage with it. To that end, and following from Rudolph and Popp's model (2007) and the ELM (Petty & Cacioppo, 1986), participants' motivation ought to play a critical role. If participants are motivated by accuracy, if they are driven to understand and "endorse" the diverse and nuanced information presented to them, deliberation ought to instill complex attitudes. There is some evidence that simply perceiving a complex reality could compel individuals to hold complex representations. The Elaboration Likelihood Model's "correctness postulate" stipulates that feeling that one holds the correct assessment of an attitude object is an individual's default motivation in an information-processing situation, and that given the time and ability,

individuals will work to hold subjectively correct attitudes (Petty & Cacioppo, 1986; Petty & Wegener, 1999). Moreover, this “reality-induced complexity” may be more likely to the extent that the individual rejects the notion that one’s beliefs *ought* to be consistent (Aronson, 1992). Even classical dissonance research leaves open the possibility of complex representations: “the reality which impinges on a person will exert pressures in the direction of bringing the appropriate cognitive elements into correspondence with that reality” (Festinger, 1957, p.11). In a deliberative setting – where individuals are instructed to seek truth rather than advance pre-existing preferences, to weigh and integrate the merits of competing arguments, to find solutions that reach a common good – the drive towards subjective accuracy should compel individuals to consider a broader set of the information being discussed and to form nuanced attitudes that line up with that complex reality.

The notion that participants would default to complex representations when faced with complex realities is, of course, undercut by the existence of the very problem deliberative theorists are trying to solve: Citizens tend not to understand or internalize the complexity of the issues they face. As it turns out, several aspects of the deliberative setting should push participants to engage with and “endorse” the complexity of the information they receive.

First, consider interpersonal accountability pressure. Participants in a deliberative setting are – and should feel – accountable to one another. Deliberators are expected to offer reasons for their opinions and to take seriously the opinions of others (Conover & Searing, 2005; Gutmann & Thompson, 2004; Shapiro, 2002). Rewards are offered to those who provide sufficient justification for their actions (e.g., moderator

praise, having one's preference adopted by group, interpersonal harmony) and punishment is possible when justification is insufficient (e.g., confederate or moderator questioning, disdain from other participants, failure of group to adopt preferences). When the ground rules for deliberation are explicitly addressed, as they were here (see Chapters 2 and 3), participants know that they are going to be held accountable to each other; individuals who know they will be accountable before making a decision are more likely to see valid arguments on multiple sides of an issue, form connections between ostensibly opposing views, and find a way to offset competing legitimate concerns (Tetlock, 1983). This push towards complexity is magnified to the extent that strong arguments are presented on multiple sides of an issue and the audience to which an individual is accountable has either mixed (Green, Visser, & Tetlock, 2000) or unknown preferences (Tetlock, Skitka, & Boettger, 1989). The opinion diversity in deliberative forums should ensure a mixed or even unknown audience preference, heightening the influence of accountability. Moreover, to the extent that individuals are held accountable for the *process* by which they arrive at their decisions rather than the outcome at which they arrive – as are those who have entered into a deliberative forum – knowing that one is accountable before making a decision reduces the likelihood of maintaining consistency with one's past actions (Simonson & Staw, 1992). That is, even when considering issues with which one already has some experience, the nature of the deliberative setting should pull for more nuanced consideration of the topic at hand.

Second, because of the novelty of a deliberative setting, participants' behavior ought to be subject to informational social influence. As detailed in Chapter 2,

participants in the deliberations staged for this dissertation entered a situation in which confederates expressed attitudinally complex evaluations. Unsure of the proper attitude to hold, participants may model their evaluations after those offered by the individuals around them who appear to understand the rules of engagement (e.g., Sherif, 1935). Important in the context of the policy proposal discussed in these deliberations, informational social influence has been shown to affect participant attitudes during facilitated group discussion (Werner, Sansone, & Brown, 2008), to influence attitudes towards ambiguous political attitude objects (Fein, Goethals, & Kugler, 2007), and to occur more frequently to the extent that decision-makers have little personal experience with the attitude object in question (Wooten & Reed, 1998). Insofar as participants enter a novel situation and attempt to find the proper way to behave when discussing an ambiguous (complex) topic with which they have little experience, we can expect them to pattern their behavior after their fellow deliberators. Here, that means mimicking confederates trained to provide nuanced, thoughtful evaluations of the topic being discussed. Over time, it is possible that these norms could be internalized and transmitted from seasoned to inexperienced participants (MacNeil & Sherif, 1976), ensuring the continued influence of the original informational social influence.

A third attribute of the deliberative environment, reciprocity norms, could enhance the impact of opinion diversity, accountability, and informational social influence on attitudinal complexity. Reciprocity has traditionally been conceptualized in terms of material generosity offered and repaid. But the currency exchanged can be less concrete, as when individuals offer reciprocal concessions (Cialdini, 2001). In deliberation, one actor's complex and effortful approach— an altruistic sign of

subverting one's own agenda (i.e., satisficing) in favor of the group's endeavor – may compel fellow deliberators to engage in a similarly effortful fashion. Although experimental work has not addressed the role of reciprocity in deliberative situations, extant reciprocity research suggests the power of the phenomenon: When one actor gives a benefit to another, the recipient reciprocates in comparable measure (Keyser, Converse, Wang, & Epley, 2008), even when they do not believe that the giver will know that the benefit was repaid (Burger, Sanchez, Imberi, & Grande, 2009). Analysis of real-world negotiations suggests that reciprocity norms operate in real time, creating a feed-forward mechanism whereby one person's (or group's) complexity is reciprocated by the adoption of more complex thinking among others. Examining policy statements made by the United States and USSR between 1945 and 1983, Tetlock (1985) demonstrated that the complexity of each country's rhetoric was influenced, in part, by the complexity of the other country's rhetoric in the same or previous three month period. The non-tyranny requirement of deliberation, which dictates that conversation cannot be controlled by a powerful individual or group, should prevent the mitigation of reciprocity's impact when complexity is initiated by a party with less power (e.g., Liht, Suedenfeld, & Krawczyk, 2005). In deliberative settings that preclude anonymity, where other participants' efforts are easily detected, and where those efforts are relatively easy to repay, deliberators ought to feed off of one another's complexity of thought.

Ability. With complex information available and participants driven toward accuracy motivation, the last remaining requirement for the induction of intra-attitudinal complexity is participant ability. Participants must be given the time and space in

which to properly engage with the material and must be able to comprehend the information they are expected to use. By definition, properly conducted deliberative sessions are a place apart from normal rhetoric, a space in which principled arguments supplant emotional appeals and the logic underlying preferences is prized above pre-existing beliefs or group allegiances. Moreover, deliberative sessions are geared towards identifying a common good and then developing a plan to implement it – time restraints would only subvert that process. Deliberation, then, ought to afford sufficient time and space to allow participants to fully engage with the materials.

Finally, participants ought to find the information presented wholly understandable. Properly executed, deliberation ought to provide information geared toward the population expected to deliberate. Deliberative Polls (e.g., Fishkin, 1991; Luskin, et al., 2002) attempt to draw a sample that mirrors the national population, requiring their materials to reflect the abilities of the least savvy participants. Moreover, the deliberative environment itself should facilitate comprehension. Participants are supposed to explain the rationale behind their preferences, and if they do not, other deliberators are empowered to ask for it. As a last failsafe, Moderators ought to draw out arguments if participants fall short. Together, these situational expectations should ensure that the bulk of the arguments participants wrestle with are presented in plain language. In short, the information provided ought to be comprehensible, but if it is not, the nature of the deliberative environment should lead that information to be recast in participants' vernacular, making it wholly digestible.

Is complexity induction futile? Assume for the moment that deliberation – with its complex information, accuracy-motivated participants, and ability-affording

structure – can induce intra-attitudinal complexity. Dissonance-minded readers will likely ask whether that complexity will simply be resolved by consistency pressures. After all, holding comparably extreme and equally valid positive and negative evaluations of an attitude object ought to be at least somewhat psychologically aversive. Although the threat of dissonance is real, were it to arise, ought not completely undo the intra-attitudinal complexity induced. First, consider the original mathematical framework for experienced dissonance ($\text{dissonance} = D / (D+C)$), where psychological aversion is maximized to the extent that an individual has fewer reasons to support a focal behavior or attitude (Festinger, 1957). In paradigms like the classic insufficient justification study (Festinger & Carlsmith, 1959), participants experienced dissonance when they had only one weak reason to justify their behavior. Intra-attitudinal complexity, in contrast, by definition involves a comparable number of dissonant and consonant beliefs/evaluations. That is, for a fixed number of dissonant cognitions, the presence of a comparable number of favorable cognitions ought to limit the extent of experienced psychological aversion to roughly half of the maximum possible amount. The most intra-attitudinally complex individuals ought to experience only a moderate amount of dissonance.

Moreover, not everyone may find the simultaneous possession of positive and negative evaluations aversive. More recent derivations of dissonance theory (e.g., Aronson, 1968; Steele, 1988) specify a more limited set of situations that induce dissonance; measures of modern racism (Katz & Hass, 1988) and sexism (Glick & Fiske, 1996) suggest that individuals simultaneously hold positive and negative beliefs about social groups without discomfort; and work on attitudinal and felt ambivalence

suggests that holding competing beliefs that are equally and highly accessible is only psychologically discomforting – and therefore only likely to undo extant complexity – when the individual has a high need for consistency (Newby-Clark, et al., 2002). Otherwise, attitudinal complexity need not yield felt ambivalence.

Summary. Attitudinal ambivalence arises when individuals are presented with complex information, have the motivation to thoroughly process that information, and are given the space and time in which to do so (Rudolph & Popp, 2007). By definition, a properly executed deliberation affords the first and last of these requirements, and considerable social- and political-psychology research suggests that deliberation ought to compel participants to adopt an accuracy motive during the process. In short, there is reason to believe that deliberation ought to induce intra-attitudinal complexity. There are, however, reasons to suspect that deliberation may not be as adept at this task as the research suggests.

Why deliberation should not instill complexity. Participants who engage with the diversity of information put before them will encounter information that argues for and against the policy under consideration. Roughly fifty years of dissonance research argues for the difficulty of forming complex attitudes from such information. From a classic dissonance perspective (Festinger, 1957), the psychological or affective discomfort (e.g., Harmon-Jones, 2000) experienced by individuals confronted with inconsistent information about an object should drive them to bring the elements into line with one another or to trivialize the discrepancy. The motivation underlying dissonance reduction was hypothesized to be so powerful that it would drive individuals to avoid situations that might engender it (Festinger, 1957, p.3). Although the degree of

dissonance participants experience was hypothesized to moderate in the section above, researchers have been able to induce dissonance in participants by exposing them to counterattitudinal information (Lavine, Borgida, & Sullivan, 2000) and a set of differing opinions (Visser & Mirabile, 2004) on a self-relevant topic. The same appears true for attitudes that are non-salient, non-central, and unimportant (Starzyk, Fabrigar, Soryal, & Fanning, 2009).

The social-cognitive literature on felt ambivalence tells a similar story: Participants actively counter-argue when presented with counterattitudinal information. Considering contradictory information – the crux of deliberation – is associated with moderate to strong levels of felt ambivalence (McGregor, Newby-Clark, & Zanna, 1999; Newby-Clark et al., 2002). Indeed, when individuals possess considerable information about a topic and are passionate – personally involved – knowledge prompts defensive, biased processing (Wood, Rhodes, & Biek, 1995). Whether participants actively counter-argue counterattitudinal information (Eagly et al., 2000) or actively seek congenial information to resolve felt ambivalence (Clark, Wegener, & Fabrigar, 2008), the net result remains: Uncongenial information is discounted and complexity precluded. To the extent that deliberation presents well-articulated arguments from multiple perspectives, the threat of dissonance cannot be ruled out.

Beyond a motivation to reconcile discrepant information, there is the possibility that participants in a deliberative setting will simply ignore information that challenges their preconceived notions and preferences. Although the evidence supporting a congeniality effect appears increasingly tenuous, a recent meta-analysis suggests that there may yet be an extremely small advantage in memory for attitude-consistent

information ($d = 0.08 - 0.23$) (Eagly et al., 1999). Moreover, mere exposure to uncongenial information may not be sufficient for recipients to perceive the information as counterattitudinal. Individuals perceive the information to which they are exposed interpersonally as more congenial and homogenous than those provided by mediated sources like television, and overestimate the homogeneity of friends' opinions (Mutz & Martin, 2001). That is, individuals are likely to fail to notice discrepancies between their views and those of their peers. Failure to detect counterattitudinal information early in a deliberative setting may preclude the recognition, incorporation, or retention of counterattitudinal information encountered later in the process. To the extent that individuals fail to encounter, recognize, and retain uncongenial information, they obviously cannot be expected to generate complex attitudes.

In sum, there is good reason to expect that deliberation will not yield complex attitudes. Individuals may fail to recognize counterattitudinal information when they confront it, fail to store it in memory (and therefore not incorporate it into their evaluations), or work to avoid or discount it. This, over and above the traditional assumption that elaborating congenial and uncongenial information simultaneously will induce a powerful motivation to resolve the inconsistency (see van Harreveld, van der Pligt, & de Liver, 2009, for a review of dissonance-reduction strategies). Deliberation may impact attitude valence, but there is good reason to suspect that it will not create more complex attitudes.

Summary. Deliberation, properly executed, ought to meet the requirements for attitudinal complexity: complex information as well as the motivation and ability to thoroughly process that information. Nonetheless, engaging with a complex set of

information can trigger dissonance-reduction processes. Deliberation's success rests with its ability to induce elaboration without triggering sufficient felt ambivalence to trigger dissonance reduction processes. If it does so, participants ought to leave the deliberative environment with relatively complex attitudes. The question, of course, is "relative to what?" Deliberation is a labor-intensive process. Insofar as intra-attitudinal complexity is the desired outcome, not just the practice of deliberation, researchers ought to consider whether non-deliberative alternatives can induce comparable levels of intra-attitudinal complexity. Two such alternatives are outlined below.

Non-deliberative alternatives and complexity induction hypotheses

Deliberative democracy's success depends on the establishment of environments sufficiently powerful to overcome individuals' tendency to satisfice and hold univalent representations. Undoubtedly, deliberation will induce some degree of attitudinal complexity. The true test is whether it engenders more complexity than other, less effortful means of considering relevant information. Accordingly, in this dissertation, deliberation's impact was compared to two common non-deliberative baseline conditions. The first, *elaboration*, involves the intra-individual consideration of unbiased, two-sided information; in essence, taking the time to learn about all sides of an issue before coming to a decision on one's own. Consider it deliberation without the deliberation. The second comparison condition, *argumentation*, is more common. It involves an individual considering two competing, one-sided, factually accurate arguments. *Argumentation* is a rhetoric- and vitriol-free version of the current political climate, disagreement without disingenuousness or disparagement.

Insofar as the induction of intra-attitudinal complexity requires complex information (Rudolph & Popp, 2007; Petty & Cacioppo, 1986), the structure of the non-deliberative alternatives should lead to significantly less elaboration and therefore less complexity relative to deliberation. First, consider ability. Simply removing the 30 minute deliberation session reduces participants' ability to think through the information they were presented. Additionally, the situational norms and behavioral models provided for *deliberation* participants may facilitate not just quantitatively more elaboration but, as theory dictates (e.g., Guttman & Thompson, 2004), qualitatively different consideration of the material. Second, consider motivation. Without the accountability and reciprocity pressures detailed above, participants in non-deliberative conditions have no additional, external motivation to thoroughly engage with the information provided. Accordingly, participants may satisfice (Krosnick, 1991) and hold a set of simplistic, univalent beliefs. Finally, participants in the *argumentation* condition should be at a particular disadvantage relative to deliberation. Beyond the structural deficits just detailed, these participants have to contend with two one-sided appeals presented sequentially. This structural change has been tied to biased processing as individuals favor information presented early or late in the sequence, depending on their Need for Cognition (Petty, Tormala, Hawkins, & Wegener, 2001; Kassin, Reddy, & Tulloch, 1990). Under these conditions, integrating the two sets of information is especially unlikely.

Despite these structural differences and the psychological differences they imply, one could argue that *deliberation* may not induce differentially large amounts of intra-attitudinal complexity. Because Deliberative Polling research has not yet

specified the mechanism(s) by which deliberation impacts attitudes, it may be that deliberation simply provides quantitatively more time for elaboration but not a qualitatively different psychological process by which participants engage with the material. If true, then participants in the non-deliberative conditions who have thoroughly engaged with the material on their own may hold comparably complex attitudes. There is some merit to this argument. Deliberative Polling researchers (Farrar et al., 2006) recently added a preference assessment between the information acquisition (here, the *elaborative* condition) and deliberative portions of their polling weekend. Several of the findings suggest that elaborating upon novel information is responsible for much of the deliberative poll's effects. First, researchers observed significant knowledge gains and attitude change *before* participants deliberated. Second, deliberation's impact on attitudes was largely contingent upon these pre-deliberation knowledge gains: when participants were already highly informed during the initial phone survey, there was little or no information gain during the pre-deliberation phase and no effect of deliberation. Finally, although the deliberation portion also yielded knowledge gains and attitude change, this "deliberation" included exposure to a balanced panel of experts in addition to a proper deliberative session. Accordingly, it is unclear whether deliberation *per se* is at all predictive of changes in knowledge or preference. If *deliberation* and *elaboration* offer comparable degrees of elaboration, differences between those conditions may not arise.

Hypotheses: intra-attitudinal induction. In light of the information processing model of ambivalence (Rudolph & Popp, 2007), the processes inherent in the deliberation session that should compel elaboration and possibly dissonance/felt

ambivalence, the structural differences between conditions of the manipulation employed here, and extant research that isolates when and how deliberation affects attitudes (Farrar, et al., 2006), the following hypotheses are set forth. First, engaging in deliberation should instill greater intra-attitudinal complexity than should engaging in the non-deliberative alternatives, and the effect should be more apparent when comparing the *deliberation* and *argumentation* conditions (**Hypothesis 1**). Second, where differences between the non-deliberative conditions arise, *elaboration* ought to induce more intra-attitudinal complexity than *argumentation* (**Hypothesis 2**).

Third, because the three classes of intra-attitudinal complexity measures employed here represent instantiations of the construct that may be increasingly difficult to induce, the pattern described in Hypotheses 1 and 2 should be most distinct for attitudinal ambivalence, somewhat less perceptible for the two integrative complexity measures, and least apparent among the recall-based measures (**Hypothesis 3**). Fourth, following from the description of elaboration as the primary cause of complexity induction and dissonance as the primary roadblock, the extent of intra-attitudinal complexity ought to be positively mediated by participants' degree of elaboration and negatively mediated by participants' felt ambivalence (**Hypothesis 4**).

The induction hypotheses just detailed ought to apply to any random sample of participants. However, in light of the difference between how citizens act and how deliberative democratic theory would have them act during deliberation, there is good reason to anticipate that deliberation will differentiate itself most clearly among individuals who are most capable of engaging in the process. Freed from the burden of those not capable of truly engaging in the process, deliberation might prove a more

potent creator of intra-attitudinally complex attitudes. The kinds of participant “expertise” that might maximize deliberation’s relative efficacy in inducing intra-attitudinal complexity are detailed below.

Question 2: The Moderating Role of “Expertise” in Complexity Induction

Deliberation imposes considerable constraints on participants. Deliberators need to set aside pre-existing group loyalties, provide rational arguments for their preferences that are not simply self-serving, and effortfully and dispassionately consider the arguments put forth in opposition to their preferences. As detailed at the outset, none of these activities is normative. It may be, then, that deliberation’s differential impact on intra-attitudinal complexity arises only among those most prepared to engage in the process. The political science literature has a long tradition of differentiating political “elites” from “novices” (Campbell, Converse, Miller, & Stokes, 1960; Jost, Federico & Napier, 2009; Luskin, 1987). Whether operationalized as constraint (Barton & Parsons, 1977; Peffley & Hurwitz, 1985), “level of conception” (Converse, 1964), or political knowledge (Federico & Schneider, 2007; Gilens, 2001), political science and political psychology have spent a half century determining whether ordinary citizens use sophisticated reasoning strategies (Goren, 2001, 2004) and, failing that, whether they can be induced to do so (Lavine, Thompsen, & Gonzales, 1997). The outcome: Those individuals who are more “prepared” – however defined – for political discourse set the parameters for national debate and function better within that debate than do those who are less politically savvy, knowledgeable, or engaged (see Jost, et al., 2009, for a review). In short, when engaging in traditional political behavior, some individuals are better equipped to participate in the tasks of citizenship.

Deliberation may be no different. Two sets of skills/tendencies should prove especially helpful in deliberations. First, consider the willingness to remain open to competing claims long enough to form a nuanced opinion. Normatively, deliberation requires participants to endorse the notion that everyone's voice should be heard and considered, to be capable of acknowledging the veracity of competing claims, to see value in alternative viewpoints, to seek out and actively listen to multiple points of view, and to incorporate diverse perspectives into a plan for action. To the extent that deliberators are unable to do so, their deliberation environment will have less in common with the theory-friendly operationalization employed in Deliberative Polls (e.g., Fishkin, 1991) than with the purposefully unsuccessful model employed in Sunstein's "Deliberation Day" (Schkade et al., 2006). Even if the quality of the deliberation did not suffer, closing one's mind before considering all of the evidence – by definition – precludes the formation of a maximally complex attitude. The hypothesized advantage for deliberation in inducing intra-attitudinal complexity ought to be more pronounced among those most (versus least) able to keep an open mind throughout the process (**Hypothesis 5**).

Second, consider the ease with which participants adopt normative deliberative behavior and attitudes (e.g., being content with not getting one's way so long as one got one's say). Individuals who tend to support deliberation's ideals, who tend to engage in deliberation-like behavior outside of deliberative environments, and those who have a general desire to understand the full nature of an issue should feel more comfortable in – and could therefore reap more from – a deliberative environment than should individuals for whom these behaviors and ideals are less familiar. Although measured

outside of a deliberative context, Rudolph and Popp (2007) demonstrated that individuals with a higher need for cognition – those driven to understand the nature of a complex issue – were more likely to hold ambivalent attitudes towards political candidates and parties. Because individuals who already support and engage in deliberative behaviors should be more adept in deliberative environment, they should be more likely (than those who do not) to demonstrate the hypothesized advantage for deliberation in inducing intra-attitudinal complexity (**Hypothesis 6**).

Question 3: Maintenance of Intra-Attitudinal Complexity

Up to this point, the arguments and hypotheses set forth have addressed the creation of intra-attitudinal complexity. This is, of course, a critical step and where most inquiries into deliberation's impact on attitudes end. But if deliberative theorists' goal is to create a deliberative society rather than haphazard and sporadic deliberative environments, an understanding of the half-life of deliberation's (relative) impact is in order. Consider two scenarios. In the first, Hypotheses 1-4 are borne out; deliberation induces significantly more intra-attitudinal complexity than do non-deliberative alternatives. If one week later that advantage evaporates, does it not call into question deliberative theorists' casting of deliberation as a panacea? Consider a second scenario, in which a moderate and comparable amount of intra-attitudinal complexity is created in all conditions. If one week later, only those who deliberated retain that degree of complexity, would we not be loathe to consider cheaper, easier alternatives to deliberation? Insofar as one is concerned with the practical application of deliberation, its ability to (differentially) induce *persistent* attitudinal complexity merits consideration.

In fact, the maintenance of complexity plays an implicit but central role in deliberative democratic theory. A deliberative society requires repeated revisiting of social issues, their consideration not confined to a single forum. Deliberation itself is no guarantee that a chosen outcome will be legitimate, nor is a decision's legitimacy at one point in time a guarantee of its merit at a later date. Realities change, new evidence emerges, and the relative importance of various considerations shifts, each of which may lead individuals to reconsider their positions. Most important, the assumption that preferences are not fixed and ought to change as a function of the available evidence underlies deliberation itself (Gutmann & Thompson, 2004).

Extant research has not explicitly addressed the stability of complexity, opting instead to highlight how complexity adversely affects the stability of attitude valence (Armitage & Conner, 2000; Hodson, Maio, & Esses, 2001; Zemborain & Johar, 2007). Nonetheless, there is considerable evidence that attitudinal complexity is a normal and persistent feature of attitudes. Congenial and uncongenial information can be equivalently accessible (Eagly, Chen, Chaiken, & Shaw-Barnes, 1999), and more recent conceptualizations of attitude structure allow for the continued existence – rather than replacement or incorporation – of “old” attitudes following persuasion (Petty, Tormala, Brinol, & Jarvis, 2006; Petty et al., 2007; Wilson, Lindsey, & Schooler, 2000). In fact, individuals hold complex attitudes towards topics as varied as abortion (Alvarez & Brehm, 1995), presidential candidates (Meffert, Guge, & Lodge, 2004), one's ingroup (Costarelli & Palmonari, 2003), one's friendships (Holt-Lunstad, Uchino, Smith, & Hicks, 2007), purchasing condoms (Dahl, Darke, Gorn, & Weinberg, 2005), and genetically-modified foods (Costa-Font & Mossialos, 2005).

So should deliberation induce differentially stable intra-attitudinal complexity?

It should. As detailed above, deliberation should lead to greater elaboration by increasing participants' accuracy motivation and by giving participants the time and space to consider the information to which they have been exposed. Elaborating more should result in greater knowledge, and greater knowledge is associated with greater attitude strength (Billiet, Swyngedouw, & Waeye, 2004). Indeed, political experts – those who ostensibly hold more (and more varied) knowledge – are better able to incorporate novel (Gilens, 2001) and schema-inconsistent (Fiske, Kinder, & Larter, 1983) information. Because attitudes formed or altered through greater elaboration should be more persistent (Petty & Cacioppo, 1986; Petty, Haugtvedt, & Smith, 1995; Petty & Wegener, 1999), participants who deliberate ought to show greater temporal stability in their complexity.

Moreover, there is a subjective component. Engaging in deliberation may make participants *feel* more thoughtful, more knowledgeable, and generally more confident. Elaboration has been shown to heighten attitude certainty (Fabrigar, et al., 2006; Smith, Fabrigar, MacDougall, & Wiesenhal, 2008), perceived thoughtfulness, and perceived knowledge (Smith et al., 2008), each of which is associated with stronger attitudes. Attitudes held with greater certainty are more resistant to persuasion (Tormala & Petty, 2002, 2004), predictive of behavior (Tormala & Petty, 2002) and, most important here, stable over time (Bassili, 1996). Relatively little work has examined perceived thoughtfulness or perceived knowledge, but at least one study demonstrated that subjective assessments of knowledge and elaboration predict attitude strength over and above actual elaboration (Barden & Petty, 2008). It may be these meta-cognitions –

thoughts participants have about their attitudes – that differentiate the kind of complexity sought after here – a structured, purposefully bivalent set of evaluations – and the haphazard complexity likely present among participants in the ambivalence-towards-political-issues literature noted above. Those individuals, armed with competing beliefs but not necessarily adamant that such complexity is reflective of reality, may construct their evaluations on the spot from a broad but disconnected set of beliefs accessible at any given moment (Hastie & Park, 1986; Zaller & Feldman, 1992). Such individuals often appear motivated to resolve the inconsistencies that arise; they are more likely to employ information from low-credibility sources (Zemboiran & Johar, 2007), to rely upon consensus information to determine preferences (Hodson, et al., 2001), and to be susceptible to subsequent persuasive messages (Armitage & Conner, 2000).

This is not the kind of complexity pursued here, and it need not be what is found: An individual can be certain about the complexity of his or her attitude. Consider the new homeowner who is wary of taking on such debt but excited by the prospect of independence, or the severely lactose intolerant ice cream aficionado who embraces summer's first cone with excitement and trepidation. Consistent with Zanna's view that complexity and strength are orthogonal (Zanna & Rempel, 1988), Armitage and Connor (2000) demonstrated that attitudinal ambivalence and stability are almost completely unrelated ($r = -.02$). If complexity is to persist, it ought to do so among those who are certain about their attitudes.

In short, greater elaboration and more positive meta-cognitions among *deliberation* participants ought to result in their intra-attitudinal complexity showing greater persistence than that produced in non-deliberative environments (**Hypothesis 7**).

Chapter summary and dissertation overview.

This introductory chapter set forth a theoretical framework by which to consider deliberation's differential ability to create attitudes that feature both positive and negative evaluative components. Because it provides participants with the time, space and motivation required for thorough and effortful consideration of the material presented to them, deliberation ought to yield more intra-attitudinally complex representations than should non-deliberative alternatives (**Hypothesis 1**). Where differences between the non-deliberative conditions arise, *elaboration* ought to induce more intra-attitudinal complexity than *argumentation* (**Hypothesis 2**). That pattern should be more apparent in the attitudinal ambivalence and integrative complexity measures than for the recall-based measures (**Hypothesis 3**); it should also be positively mediated by participants' degree of elaboration and negatively mediated by participants' felt ambivalence (**Hypothesis 4**). Moreover, "expertise" ought to play a role such that the pattern of results ought to be more prominent among individuals who are more comfortable with the kind of complexity required in deliberative environments (**Hypothesis 5**) or who tend to engage in deliberation-like behavior outside of deliberative settings (**Hypothesis 6**). Finally, because elaboration leads to objectively and subjectively stronger attitudes, deliberation ought to create more stable intra-attitudinal complexity relative to non-deliberative alternatives (**Hypothesis 7**).

The remaining chapters step through the process of establishing the deliberative environment and testing the hypotheses just detailed. Chapter 2 reviews two pilot studies designed to ensure the complexity of the information provided to all participants and assess the feasibility of creating a viable deliberation environment in a laboratory with undergraduate students. In Chapter 3, the main study is detailed and a series of manipulation checks conducted to verify the distinction between deliberative and non-deliberative environments. Chapter 4 addresses the induction of intra-attitudinal complexity, specifically testing Hypotheses 1-6. In Chapter 5, three operationalizations of complexity maintenance are employed to assess Hypothesis 7. Finally, Chapter 6 addresses the theoretical and practical implications of the analyses in the preceding chapters and lays out next steps for the study of deliberation's impact on attitudinal complexity.

Chapter 2: Pilot Tests

Assessing whether deliberation induces differentially greater and more stable intra-attitudinal complexity presumes that the deliberative experience created here is a viable replication of the deliberative environments in the extant literature. Accordingly, this chapter reviews two pilot studies designed to demonstrate that participants were provided with sufficiently complex information (Information Pilot) and that the deliberative environments created met deliberative democratic theorists' *desiderata* (Situation Pilot).

Information Pilot

Method.

Participants. Thirty students at a large Midwestern University participated in small groups, no larger than five participants, in exchange for course credit. Participants averaged 20.5 years of age ($SD = 3.16$), were largely Caucasian ($n = 27$), and predominantly female ($n = 21$).

Procedure. Participants were informed that the primary investigator was interested in attitudes towards transportation options and that they would be taking part in a project co-sponsored by the Minnesota Department of Transportation and the State Legislature. Specifically, they were informed that they would be participating in a survey designed to assess what students at the University think about a new transportation proposal being drafted in the State Legislature and that state legislators wanted to know what aspects of the proposal members of the University community find positive (and negative) in order to adequately address community concerns.

Participants were first provided with a background flier ostensibly prepared by the Transportation subcommittee of the Minnesota State Legislature for the purpose of educating the public about the basics of the Lightrail transportation policy about which the participants would soon learn. The flier contained information about the volume of people who pass through the University daily, the location of proposed Lightrail stations on campus, statistics on the campus community's use of mass transit options, and a map of the route through campus. Participants spent five minutes looking over the flier before returning it to the experimenter.

Participants then rated 80 statements – across 9 categories – that were intended to argue for (*pro*) and against (*con*) the Lightrail proposal. Specifically, participants rated statements about a) impact on area businesses ($n = 13$, 8 *pro*); b) the ridership experience ($n = 9$, 4 *pro*); c) impact on student life ($n = 12$, 6 *pro*); d) project funding ($n = 6$, 2 *pro*); e) environmental impact ($n = 10$, 6 *pro*); f) impact on surrounding neighborhoods ($n = 10$, 5 *pro*); g) construction of the Lightrail line, stations, and rail cars ($n = 6$, 3 *pro*); h) how the proposal matched up against other possible mass transit proposals ($n = 7$, 3 *pro*); and i) how the adoption of the proposal would affect existing mass transit options ($n = 7$, 3 *pro*).

Participants were asked to consider what would be best for the University community as a whole, rather than what would benefit them personally, as they rated how forcefully each of the 80 items argued for or against the adoption of the Lightrail policy. Participants responded to each item using a nine-point scale, ranging from -4 to +4, anchored by the phrases “strong reason to oppose policy” and “strong reason to support policy”; the midpoint of the scale was labeled “does not affect my view”.

Results. The analyses determined which items make *strong* and *medium* strength arguments for and against the Lightrail proposal. Scores on *con* items were reverse coded such that higher scores indicate more forceful arguments. A one-sample *t*-test was conducted to assess whether item means differed significantly from each of two target values (2.5 for *strong*, 1.5 for *medium*). Statements that did not differ significantly from one target value, but did differ significantly from the other target value, were entered into a one-way repeated measure analysis of variance to ensure that the items of a given strength, within a given category, did not differ significantly from one another. For example, to be included as “strong” arguments about the Lightrail’s impact on business, two items must have a) not differed significantly from 2.5, b) differed significantly from 1.5, and c) not differed significantly from one another. In the event that two items met criteria a and b, but not criterion c, the item with the mean closer to the target value was retained.

The selection criteria rendered four lists: *strong-pro*, *strong-con*, *medium-pro*, and *medium-con*, which contained 19, 12, 4, and 14 items, respectively. To ensure equal exposure to information that supported and detracted from the proposal, each *strong* list was trimmed to twelve items and each *medium* list culled to four. The *strong-pro* and *medium-con* lists were shortened by removing the lowest and highest values to keep the center-most items within each list.

Finally, paired *t*-tests were run to ensure that the set of selected pro and con items at each level of strength did not significantly differ from one another. Analyses indicated that the pooled *strong-pro* ($M = 29.50$) and *strong-con* ($M = 29.14$) items did not differ from one another [$t(27) = -.15, p = .88$], nor did the *medium-pro* ($M = 6.39$)

and *medium-con* items ($M = 6.64$) [$t(27) = -.22, p = .83$]. The same was true for the total set of pro ($M = 35.89$) and con ($M = 34.86$) items [$t(27) = -.34, p = .74$]. In sum, the selected pro- and con-Lightrail items were almost identical in strength. Pilot study participants helped identify a set of reasonably strong arguments for and against the Lightrail, setting the table for fruitful deliberation. The selected items, as well as their mean and standard deviation, are listed in Appendix A; descriptive statistics for the resulting sets of information are provided in Appendix B.⁵

Situation Pilot

The Situation Pilot was undertaken to ensure that participants 1) are engaged during deliberation, 2) are driven by accuracy rather than impression-management motives, and 3) feel that their experience lined up with the *desiderata* set forth by deliberative democratic theorists. In short, the Situation Pilot verified that participants in the main study would be exposed to a situation that reasonably approximates theorists' conception of deliberation.

Method.

Participants. Thirty-three undergraduate psychology students at a large Midwestern university participated in exchange for extra credit toward introductory courses in psychology. Because the situation pilot study was conducted over the summer term, participants were somewhat older ($M = 25.35$ years, $SD = 10.75$, ranging from 19 to 66 years of age) and more highly educated ($M = 2.77$, $SD = 1.87$) than

⁵ The initial set of items was trimmed to ensure an equal number of *strong* and *medium* arguments for and against the proposal. When necessary, the lowest and highest values within each scale were removed in order to retain the center-most items within each category. Descriptive statistics for the final set of items is displayed in Appendix B.

typical student participants. Roughly two-thirds of participants were female ($n = 21$). Roughly two-thirds was white ($n = 21$), another third was Asian ($n = 9$); two were African American and one identified as “Other”. All participants engaged in small-group discussion with two confederates. Of the 23 deliberations conducted, 14 featured a single participant, 8 featured two participants, and one featured three.

Procedure. Participants arrived for the study and were welcomed by the researcher and his assistant (the Moderator) into a room that featured one large, square table surrounded by chairs. Participants were asked to sit anywhere as the group waited for the remaining participants to arrive. Each group of participants was joined by two confederates, who were instructed to arrive just before the designated start time, lest the participants feel they were walking into a pre-designed situation. After consent forms were signed and collected, the researcher introduced himself, the Moderator, and the project:

You will be participating in a survey designed to assess what students such as yourself at the University of Minnesota think about a transportation policy drafted by the Minnesota State Legislature.

In light of the 35W Bridge rebuilding, the reconfigured traffic pattern near the new Gopher Football Stadium, the coming Twins Stadium, population growth in and around the Twin Cities, and the central role the University plays in the region, various members of the legislature have been trying to re-imagine the way individuals travel to, and within, the University.

Because you and your fellow students will be directly affected by the proposals, and because you are intimately aware of the good, bad, and ugly of University life, the Legislature wants to hear what you have to say.

My name is Brad Lippmann, and I will be supervising this project for the Legislature. Let me start off by telling you a little bit about myself and why I’m here. I’m currently a doctoral candidate in Political Psychology

at the University, but I took all of 2008 off to work on the elections. During that time, I met and became friendly with a number of State Representatives and State Senators.

Several months ago, they approached me and asked if I would be able to get access to University students because, as I mentioned, they want your feedback on transportation around the University. It turned out that I could use the REP system to reward students for providing feedback, so here we are.

One thing I want to note up front is that this is not a typical “REP Study”. We’re using the REP system to get access to you, but it’s not a typical psychology study. In fact, you may have seen fliers around campus for a similar-sounding study. There are a number of people like me around the Twin Cities campuses that have been asked to conduct this exact survey. You may have been recruited through the psychology department, but you’re here as members of the University Community.

I also want to note that the Legislature was very specific about some of the things that they wanted us to say to you during this process. You may see me or my assistant refer to a binder as we go along. That’s to make sure we’re sticking to the agreed-upon protocol.

Ok? Great. Let’s talk about the survey.

Today, you will be introduced to the University Revitalization, Integration, and Development Effort, or U-RIDE. First, we’ll have you look over a brief summary of the U-RIDE proposal to give you some background. Once everyone has a sense of what the project will look like, we’ll look at some of the details.

After this introduction, the researcher walked participants through a PowerPoint overview of the project (Appendix C). At the conclusion of the presentation, the researcher again addressed the participants:

Legislators are seeking your input. They want to know what aspects of the proposal members of the University community find positive, and which they find negative, so they can be as prepared as possible to discuss people’s concerns. Your job today will be to consider the strengths and weaknesses of the proposal as it currently stands.

Because I have been briefed by the Legislature's Transportation subcommittee on what they hope to hear from you, I need to excuse myself from the remainder of the survey. My assistant, (name), will serve as the **Moderator** for the remainder of the session. He/She was purposefully left out of the Legislature briefing to avoid biasing these proceedings. If there are no questions, I will turn control over to (name). Thank you all for your participation today.

Once the researcher left the room, the Moderator introduced the idea of "briefing booklets," bound collections containing the 32 items that emerged from the Information Pilot as well as photographs that matched the content (Appendix D). The Moderator told participants that

The first thing you will do today is examine a number of specific anticipated consequences of the Lightrail's implementation. The items were selected from a larger list of considerations put before the State Legislature by two experts in transportation policy in the Twin Cities area. Both are highly respected and have done excellent work on past projects, like the new 35W bridge and the traffic pattern around the new football stadium on campus. Their comments and assessments reflect the plan as it currently stands.

Remember as we begin that just because elected officials created this plan doesn't mean it's perfect. Or even close. That's why they need you. The end product will be better to the extent that you can take the perspective of those members of the University community who would be affected but are not able to have their voices heard.

As your first task today, we would like you to read over several aspects or consequences of the proposal as it currently exists. As you do, try to think about what would be best for the University and Twin Cities community as a whole, not just what would be best for YOU. Please keep a broad perspective, taking into consideration topics and arguments that are presented but that you might not have otherwise considered.

Each participant (and confederate) was given a briefing booklet to look over.

After 15 minutes, the Moderator collected the booklets and shifted attention to the pending deliberation:

The state legislature is interested in multiple kinds of feedback on this project. Some want facts and figures. Other legislators want to hear what you have to say about the ideas, literally. Right now, we are going to engage in a discussion about the information you read.

The discussion will be videotaped. The comments from this discussion and a number of other discussions we hold will be transcribed and compiled into one written document. Your names will not be associated with any of the comments, and the videos won't be shown to anyone except Brad, myself, and another moderator who will be transcribing the tapes. The legislators just want a sense for what people have to say about the Lightrail. Ok? Ok, great.

The committee members would like to hear what you thought was good, and what you thought was bad. What did they miss? Please approach the discussion as if you were trying to move towards the details of a plan that most of you agree with. As a group, what are the features that you liked, what are the ones you didn't like? Does that make sense to everyone?

The Moderator then re-introduced himself/herself, noted that he/she was trained in focus group moderation, and asked participants to introduce themselves and indicate their dream job. The ice-breaker was intended to get participants comfortable speaking with each other and to simulate a public deliberation in which participants likely know a little, but not much, about one another. Once all participants had introduced themselves, the Moderator turned to the ground rules for discussion. Participants received a copy of the ground rules (Appendix E), were asked to read them as the Moderator read them aloud, and to sign the form if they agreed to abide by it. Participants were then instructed to keep the rules in front of them as a reference. The ground rules are the *desiderata* for deliberation, as detailed by several deliberative democratic theorists, and served as the first guide for participants to use in the pending discussion. Moderator prompts and confederate behavior served that purpose as well.

To begin the deliberation, the Moderator turned to one of the confederates and asked for his or her initial reaction. The confederate always replied with a pre-determined, two-sided response. During the deliberation, each confederate was asked to try to incorporate a set of eight facts about the Lightrail contained in the briefing booklets (Appendix F). Depending on the script the confederate was scheduled to use, he/she replied with either

Well, I like that Washington Avenue is going to become a pedestrian mall – I think that'll be really cool. But they're going to take away \$7 million in state funding for the University. That's 8% of the money we get, and that's a problem. I don't know, it seems like a mixed blessing.

or

Well, I like that the Lightrail is going to give students on campus easy access to the things the Twin Cities has to offer – like sports and music and cultural stuff. But they're shutting down the Washington Avenue Bridge for a YEAR for construction. I don't know, it seems like a mixed blessing.

The Moderator praised the nuance of the confederate's assessment, suggested that it serve as a starting point for the discussion, and opened conversation up to the larger group. Throughout the deliberation, the Moderator was tasked with following up participant responses if they simply provided an opinion without a corresponding rationale. Confederates engaged in similar behavior, asking participants for clarification if the comments offered were insufficiently thoughtful. Confederates also worked to appear open to both sides of the argument; indeed, the information they were required to bring up as part of the conversations raised points that supported and opposed the Lightrail. Sometimes the contradictory information came from separate categories (pro-Lightrail environmental, anti-Lightrail business); sometimes both came

from within a single category. The net intended effect was to convey to participants that both sides had merit and that it was both descriptively and prescriptively normative to hold a nuanced impression of the Lightrail proposal. After 25 minutes, or when the conversation wound down, the Moderator closed the discussion by indicating that they were running low on time and asking whether anyone had any remaining comments that they would like to share. When all remaining comments had been raised and addressed, the Moderator shifted the participants to the completion of several outcome measures.

We want to get a sense for your impressions of the Lightrail and for the discussion experience itself. There are instructions at the top of each section. Please read them carefully, and answer the items accurately and honestly. Feel free to ask questions as you go along. When you have completed your packet, please slide it into your envelope to ensure confidentiality.

When all participants had completed their outcome measures, the researcher was brought back into the room. He thanked participants for their participation and debriefed them with regard to the true nature of the study. Confederate identity was not revealed to protect the cover story for future groups, and no participants indicated any suspicion about the nature of the study.

Measures and Results.

Engagement. To address whether participants were actively engaged in their deliberation – i.e., not simply going through the motions, but actually interacting with one another and the materials provided – participants answered six items assessing the extent to which they saw the Lightrail proposal as self-relevant and personally important. Sample items include “To what extent do you agree with the statement, ‘I would like to learn more about the Lightrail proposal’?” and “How personally relevant

do you find the information about the Lightrail?” Participants also completed five items – from Brannon, Tagler, and Eagly (2007) – designed to assess (subjective) attitude importance. Participants responded to each of the eleven items using a Likert-type scale that ranged from 1 to 7, where higher scores reflect greater self-relevance and attitude importance.

Neither the personal relevance ($\alpha = .64$) nor the subjective measures of attitude strength ($\alpha = .51$) scaled well. An exploratory factor analysis conducted on all 11 items returned three meaningful factors: knowledge/personal relevance (5 items, 28.96% variance explained, eigenvalue of 3.19), importance (2 items, 19.64% variance explained, eigenvalue of 2.16), and certainty (3 items, 14.56% variance explained, eigenvalue of 1.6). One-sample t -tests, using the midpoint (4, indicating moderate importance) and high end of the scale (7) as points of comparison, indicated that participants were reasonably engaged and held strong but not intractable beliefs. The Knowledge/Personal Relevance scale ($\alpha = .80$, $M = 5.37$, $SD = .89$) differed significantly from the midpoint ($t(30) = 8.59$, $p < .001$) and high end of the scale ($t(30) = -10.16$, $p < .001$). The same is true of the Importance scale ($r = .84$, $M = 4.82$, $SD = 1.50$; $t(30) = 3.05$, $p = .005$, $t(30) = 8.07$, $p < .001$) and the Certainty scale ($\alpha = .64$, $M = 4.77$, $SD = 1.06$; $t(30) = 4.06$, $p < .001$, $t(30) = -11.66$, $p < .001$]. Overall, participants were engaged with the material presented and were somewhat certain about their attitude towards the Lightrail proposal but, as indicated by the mean value, not one wholly sold on their point of view.

Accuracy motivation. A second question in the Situation Pilot was whether participants would be driven by accuracy motives in the group discussion when

impression management concerns might arise. If participants would rather “get along” than understand a topic and question others’ opinions, the deliberation situation does not meet the criteria set forth by deliberative theorists. Participants completed five items to assess accuracy motivation. The five items scaled nicely ($\alpha = .86$), and the scale mean ($M = 6.55, SD = 1.42$) differed significantly from the midpoint of the scale (4.5), [$t(30) = 7.74, p < .001$]. Analyses confirm that participants were driven by accuracy concerns – or at least that they felt they ought to be. Participants also completed a single item, borrowed from Chen and colleagues (Chen, Shechter, & Chaiken, 1996), to assess impression motivation. A paired-sample t-test conducted on the transformed (to range from 0 to 1) Accuracy scale and the Impression Motivation item suggested that participants were significantly more motivated by accuracy than by impression management concerns [$M = .73, SD = .16; M = .40, SD = .28; t(28) = 6.28, p < .001$].

Deliberation desiderata. The third and crucial test of the Situation Pilot is whether participants report that their experience corresponded to the *desiderata* set forth by deliberative theorists. Participants completed four items designed to measure their ability to take the University’s perspective instead of, or in addition to their own. None of the four items correlated especially strongly with any other (all $r < .5$), nor did they scale well ($\alpha = .37$), so all four items were assessed individually. One-sample t-tests comparing means scores to the midpoint (4) indicated that participants believed that they set aside personal preference [$M = 5.06, SD = 1.48, t(30) = 4.00, p < .001$], that they worked on behalf of the entire University community during deliberation [$M = 5.32, SD = 1.08, t(30) = 6.84, p < .001$], that they did not simply advance a selfish

agenda [$M = 3.13$, $SD = 1.43$, $t(30) = -3.39$, $p = .002$], and that doing so was not difficult [$M = 2.90$, $SD = 1.49$, $t(30) = -4.10$, $p < .001$].

Participants also rated their deliberative experience with reference to five key criteria for deliberation: having an equal say ($M = 6.27$, $SD = 1.33$), others giving reasons for their preferences ($M = 6.18$, $SD = 1.40$), having one's opinions respected ($M = 6.79$, $SD = .42$), feeling accountable to others ($M = 5.72$, $SD = 1.55$), and being thoughtful about the topic ($M = 6.64$, $SD = .49$). In all five cases, scores were above the midpoint and, on occasion, approached a ceiling on a scale that ran from 1 to 7. On no item did more than 20% of the responses fall at or below the midpoint of the scale. Each item mean differed significantly from the midpoint of the scale (all $6.27 \leq t \leq 38.58$; all $p < .001$). In short, participants believed that their experience corresponded to the *desiderata* of deliberation.

Pilot Studies Summary

In order to develop complex attitudes, individuals must be given compelling information on at least two sides of an issue and the opportunity to combine that information into a nuanced representation of the issue. The results of the two pilot studies suggest that both criteria were met. Information Pilot study participants identified 12 strong and 4 moderate arguments both for and against the Lightrail proposal; the average evaluation of the strong arguments for and against the Lightrail are nearly identical, as are the average ratings of the medium-strength pro- and anti-Lightrail arguments. Situation Pilot participants reported that their experience lined up with the prescriptive guidelines set forth by deliberative democratic theorists, that they

were engaged during deliberation, and that they were driven more by accuracy motives than impression management concerns.

The joint results of the two pilot studies indicate that the materials and procedures tested are appropriate for use in a comparison of deliberation's ability to induce intra-attitudinal complexity. The table has been set. Chapter 3 lays out the Method employed in this comparison and walks through a series of manipulation checks designed to a) verify random assignment, b) establish the distinctions between measures of intra-attitudinal complexity, c) ensure that participants in each condition were sufficiently engaged with the task that comparison across conditions is appropriate, d) assess the similarity of the deliberative environment induced here to those in extant deliberative research, and e) compare the conditions' relative impact on attitude and memory indices to demonstrate that the manipulation created measurably distinct environments.

Chapter 3: Main Study Method and Preliminary Analyses

Having established that the materials to be presented argued for and against the Lightrail to a comparable degree and that the deliberation setting to be employed left participants engaged and acting in accordance with deliberative theorists' *desiderata*, this chapter details the procedure used in the main study and walks through a series of preliminary analyses designed to show that a) participants were successfully randomly assigned to condition, b) the intra-attitudinal complexity measures were distinct, as anticipated, c) participants were engaged with the task before them, d) the deliberative environments created were comparable to those in extant deliberative research, and that e) the different levels of the manipulation yielded measurably different experiences for participants. After laying that groundwork here, Chapter 4 details the impact of the manipulation on intra-attitudinal complexity.

Method

Design. Participants were assigned to one of three information acquisition conditions (*argumentation* vs. *elaboration* vs. *deliberation*) and completed three sessions, each separated by one week. The first session served as a screening protocol in which individual differences were assessed. During the second session, participants learned about the topic under consideration (Lightrail) and completed a battery of outcome measures. In Session 3, participants returned to complete the same battery of outcome measures. Accordingly, the primary design is 3 (*deliberation* x *elaboration* x *argumentation*) X 2 (assessment time) mixed-model design in which the latter variable is repeated within participants. Further, in one condition (*deliberation*), participants are

nested within discussion groups. Participants in the other two conditions did not undergo any joint tasks and are thus independent of one another.

Participants. Two hundred fifty-four (254) participants were recruited from undergraduate psychology courses: 59 participants in the *argumentation*, 50 in the *elaboration* condition, and 145 in the *deliberation* condition ($k = 54$). Special effort was made to recruit students from “online” introductory psychology classes that require students to attend weekly discussion sections but allow them to view lectures from home over a course website. This recruitment strategy was employed for several reasons. First, the limited schedule might minimize the likelihood that participants would interact with other students in the sample pool, thereby helping to maintain the cover story once the first round of data collection ended and participants had been debriefed. Second, in service of the deliberative ideal of diversity, students were recruited from these non-traditional classes in hopes of finding participants with a broader variety of life experiences, concerns and commuting habits. Participants were recruited face to face, and each class was only targeted for recruitment once.

The recruitment strategy yielded a sample similar to the stereotypical undergraduate sample. Although participants ranged in age from 18 to 52, the large majority (90.1%) was 21 years or younger ($M = 19.48$, $SD = 2.64$). Participants were predominantly female (61.4%), White (79.9%), and early in their educational careers (49.4% were in their first year; only 6.8% were in their fourth or fifth year of study). Despite the demographic homogeneity, participants did employ a variety of modes of transportation in their daily commute. When asked how they commuted to class, work, and activities in an average seven-day week, the average participant reported that (s)he

walked 2.76 days ($SD = 2.7$), biked 0.80 days ($SD = 1.69$), rode mass transit (bus or Lightrail) 2.60 days ($SD = 2.31$), and drove a motorized vehicle 1.05 days ($SD = 1.72$). The sum of the means exceeds 7 days, as participants were encouraged to indicate using multiple modes of conveyance if it best described their commute (e.g., car and bus, a.k.a. “park and ride”). Nearly one third (31.7%) of all participants had a total number of commuting days that exceeded 7.0, indicating a sizeable minority of participants used more than one mode of conveyance on at least one day in an average week; 5.8% totaled at least 14 commuting days, indicating that at least two modes of conveyance each day of the week.

Participants were compensated with extra course credit for completing each portion of the study, and compensation was back-loaded to minimize attrition. The retention strategy was successful: of the 254 participants who completed the first session, 240 returned for the second session (94.5% retention), and 233 came back for the third session (91.7% of Session 1, 97.1% of Session 2). As a result, the final sample contained 53 *argumentation* participants, 48 *elaboration* participants, and 132 *deliberation* participants across 53 groups. Nine of the fourteen participants who failed to complete Session 2 had, unbeknownst to them, been assigned to the *deliberation* condition; one had been assigned to the *elaboration* condition and four to the *argumentation* condition. Demographically, they resembled those who were retained by the study: 64.3% were female, 50% were White (49.2% Asian), and 50.0% had completed one year or less of college. The seven participants who completed Session 2 but not Session 3 were also demographically similar to the final sample – 71.4% female,

and 71.4% White – but had somewhat more college experience (57.1% had completed at least two full years).

Procedure and Materials.

Session 1 – Individual Differences. At the outset of Session 1, the Investigator – who was not blind to condition, but who was present for all groups to ensure a similar experience – interacted with participants professionally but warmly to help participants feel comfortable in the setting and to establish a rapport that would reduce attrition. To officially begin the session, participants were situated within a narrative that provided justification for their participation and made sense of the esoteric attitude object they would soon evaluate. The Investigator delivered the following monologue:

My name is Brad Lippmann, and I will be supervising this project. Let me start off by telling you a little bit about myself and why I'm here. I'm currently a doctoral candidate in Political Psychology at the University, but I took all of 2008 off to work on the elections. During that time, I met and became friendly with a number of State Representatives and State Senators. It turns out that a number of them serve on the Transportation Subcommittee at the State Legislature.

Several months ago, they approached me and asked if I would be willing to survey University students to get feedback on transportation around the University. It turned out that I could use the REP system to reward students for providing feedback, so here we are.

One thing I want to note up front is that this is not a typical "REP Study". We're using the REP system to get access to you, but it's not a typical psychology study. In fact, you may have seen fliers around campus for a similar-sounding study. There are a number of people like me around the Twin Cities campuses that have been asked to conduct this exact survey. You may have been recruited through the psychology department, but you're here as members of the University Community.

The survey takes place over three sessions. Today, we are just going to get a sense of who you are and how you think. This will help us better understand your opinions of the proposal. We'll address the proposal itself next week, at the same time, on the same day, in the same place.

Does anyone have any questions? Ok, great. Let me hand out the survey. Please answer the questions accurately and honestly; raise your hand if you have questions along the way. When you have finished, please place your survey into the envelope in front of you to ensure confidentiality.

As is clear from the script reproduced above, participants were not informed about the nature of the transportation project during Session 1. Instead, they were simply asked to provide information about themselves and their commuting habits so that the Legislators could more easily “slice and dice the data” to be collected over the following two weeks. Several psychological questionnaires were embedded in a single battery that participants completed at their own pace. The battery included measures of participants’ Need for Cognition (Cacioppo et al., 1996; see Haugtvedt and Petty, 1992, for rationale), Need for Closure (Webster & Kruglanski, 1994), political knowledge, Preference for Consistency (Cialdini, Trost, & Newsom, 1995), and normative and personal deliberative beliefs (see Borgida, Worth, Lippmann, Ergun, & Farr, 2008). Participants also provided their age, gender, ethnicity, annual income, number of semesters completed, and the number of days (in an average week) that they commuted by walking, biking, mass transit, and using motorized vehicles (e.g., cars, motorcycles, mopeds), respectively.

All participants were run in small groups. Participants in the *deliberation* condition were run in groups of three to six students, of whom two were confederates. Participants in the two comparison conditions – *elaboration*, *argumentation* – participated in sessions containing 3 to 7 participants. Participants did not talk with one another during Session 1, and confederates were instructed to simply follow the

Investigator's instructions as they would if they were actual participants. After completing all measures and placing the questionnaire in a "privacy envelope," participants were assured that they would receive a reminder email 24 hours before the next session, thanked, and dismissed.

Session 2 – Lightrail Introduction and Dependent Measures. Participants (and confederates) returned one week later – on the same day, at the same time, in the same room – to learn about and evaluate the transportation project alluded to during Session 1. Upon arriving, all participants were informed that they were going to be evaluating a Lightrail project co-sponsored by the University of Minnesota, the Metropolitan Council, the State Legislature, and the Minnesota Department of Transportation. Specifically, they were told that:

Today you will be participating in a survey designed to assess what students such as yourself at the University of Minnesota think about a transportation policy drafted by the Minnesota State Legislature.

In light of the 35W Bridge rebuilding, the reconfigured traffic pattern near the new Gopher Football Stadium, the coming Twins Stadium, population growth in and around the Twin Cities, and the central role the University plays in the region, various members of the legislature have been trying to re-imagine the way individuals travel to, and within, the University.

Because you and your fellow students will be directly affected by the proposals – and because you are intimately aware of the good, bad, and ugly of University life – the Legislature wants to hear what you have to say.

I was asked to supervise this project for the Legislature. As I mentioned last week, this is not a typical REP Study. We're using the REP system to get access to you, but it's not a typical psychology study. In fact, you may have seen fliers around campus for a similar-sounding study. There are a number of people like me around the Twin Cities campuses that have been asked to conduct this exact survey. You may have been

recruited through the psychology department, but you're here as members of the University Community.

Ok? Great. Let's talk about the project.

Today, you will be introduced to the University Revitalization, Integration, and Development Effort, or U-RIDE. First, we'll go through a brief PowerPoint summary of the U-RIDE proposal to give you some background. Once everyone has a sense of what the project will look like, we'll look at some of the details.

After running through a PowerPoint detailing the route, timing, funding, and rationale for the Lightrail project (Appendix C), the Investigator excused himself from the room by noting that:

Legislators are seeking your input. They want to know what aspects of the proposal members of the University community like and want to keep, and which they want to change or have concerns about. Your job today will be to consider the strengths and weaknesses of the proposal as it currently stands.

I want to mention two last things.

First, the Legislature was very specific about some of the things that they wanted us to say to you during this process. You may see me or my assistant refer to a binder as we go along. That's to make sure we're sticking to the agreed-upon protocol.

Second, during our sessions with the Legislature to create this protocol, a number of Legislators let slip what they hoped you guys would say and what they expected that you would say. Sometimes those two things were very similar, sometimes they were dramatically different. Either way, the last thing you want to know – when you're doing survey and focus group work – is what the person who hired you actually wants to hear. There's a chance I could bias the results because I know too much, so I need to excuse myself from the remainder of the session. My assistant, (name), will serve as the Moderator for the remainder of the session. (Name) was purposefully left out of those sessions so that he/she could serve as a neutral arbiter, a moderator of sorts. I'm going to step out now, and I will return at the end of the session. Thank you all for your participation today.

Here, the Moderator – a professionally dressed undergraduate research assistant blind to the study’s hypotheses and uninvolved in the collection of data in the other conditions – took over the session and addressed the participants and confederates:

The first thing you will do today is examine a number of specific anticipated consequences of the Lightrail’s implementation. The items were selected by two experts in transportation policy in the Twin Cities area from a larger list of considerations put before the State Legislature. Both are highly respected and have done excellent work on past projects, like the new 35W bridge and the traffic pattern around the new football stadium on campus. The information reflects the plan as it currently stands.

Remember as we begin that just because elected officials created this plan doesn’t mean it’s perfect. That’s why they need you.

As your first task today, we would like you to read over several aspects of the proposal as it currently exists. As you do, try to think about what would be best for the University and Twin Cities community as a whole, not just what would be best for you. Please keep a broad perspective and consider all aspects of the plan.

Please take the next 15 minutes to look over the information in the booklet I give you. Make sure you are familiar with the material presented inside.

At this point, participants were provided with either a) a single briefing packet outlining the favorable and unfavorable attributes and consequences of the Lightrail project, or b) two briefing packets containing the same information as the single packet mentioned above, but divided by the valence of the information (Appendix D).

Participants in the *deliberation* and *elaboration* conditions received the single briefing packet and spent 15 minutes considering its content; participants in the *argumentation* condition received the first of two briefing packets, spent roughly 7 minutes with it, and then traded it in for the second packet. The order in which participants in the

argumentation condition received the supportive and oppositional briefing packets was counterbalanced. Regardless of condition, all participants received the same information. Within each packet, information was organized by content category: what it is like to ride the Lightrail, its impact on business, who will pay for the project, the environmental impact, the impact on nearby neighborhoods, and the impact on commuting in the Twin Cities.

After 15 minutes had elapsed, participants in the *elaboration* and *argumentation* conditions moved on to complete a series of dependent measures. Participants in the *deliberation* condition were told that they would be taking part in a brief discussion about the Lightrail project. Specifically, the Moderator informed them that:

Ok, next we are going to engage in a discussion about the information you read. Please approach the discussion as if you were trying to move towards the details of a plan that most of you agree with. As a group, what are the features that you liked, what are the ones you didn't like? Does that make sense to everyone?

As we get started, I'll serve as a neutral moderator. Basically, I'm going to make sure that the conversation keeps going if we hit a quiet spot. I am also going to make sure that everyone has a chance to speak.

There are a number of ground rules that should guide our discussion today. These are very important, so I would like you to read along with me as I read them aloud."

The Moderator then handed out a sheet of ground rules based on deliberative democracy's *desiderata* for discussion. The Moderator read the ground rules (Appendix E) aloud and asked participants to read along:

In order to make sure we have a productive discussion, there will be several ground rules in place. First and foremost, it is important that every participant's view be heard. Each of you likely comes in with a different background, different concerns, and different transportation needs. The University community is exceptionally diverse, and it is

important that as many different voices be heard as possible. In order to ensure that all voices be heard, I will exercise some control over the discussion. If I haven't heard from someone, I will solicit their opinion. If someone has said a lot already, I may ask that he or she hold off for a moment while others voice their opinion. This is not meant to put anyone on the spot or to silence anyone; it is only meant to ensure that all perspectives are taken into account.

Second, it is important that we all understand and acknowledge that each of our perspectives is valid and valuable. Just because we may disagree about, say, whether one aspect of a proposal is more important than another doesn't mean that either perspective is wrong. Certainly, you should feel free to follow up on each others' statements and question the rationale behind each others' preferences. This is, after all, a discussion. But, as you do so, it is important to recognize that each of our perspectives is valid and deserves respect.

However, you do need to offer reasons for your preferences. As you do so, it is important that you take a broad, collective view of who might benefit from the policies. This is a community-based project and you should take a community-based approach. That is, supporting one policy over another for selfish reasons should be discouraged. For example, if U-RIDE would make your commute easier but make commuting harder for a large area around the University, you should not argue in support of U-RIDE solely because it favors you.

By signing below, you agree to adhere to these ground rules to the best of your abilities and to work to make this an engaging, informative, and enjoyable experience for everyone involved.

Participants signed the document if they agreed to comply with the statement – all did. Each participant's signed statement remained in front of them throughout the discussion to remind them of the ground rules. The Moderator then continued:

The point of this discussion is for you, as a group, to isolate what aspects of the current proposal you would like to keep and what you would like to see changed. There are a number of issues at play – including the environmental impact, impact on neighborhoods and businesses, how the project is funded and built, and the features of the Lightrail itself – and we would like to address as many of them as possible. What kinds of outcomes do you want in each area, do you think the current proposal

accomplishes them, and if not, what kinds of changes would you like to see? These things should be determined as a group. To begin our discussion, I'd like to hear someone's initial reaction.

The Moderator then turned to one of the two confederates and asked, "(Name), what's your first impression?" The Confederate's reply (and the Moderator's reaction) was crafted to illustrate that the issue was complex and to set a norm within the group that addressing that complexity was both acceptable and desirable.

Confederate: Well, many of the features seemed like positive outcomes. But others seemed less desirable. It seemed like a mixed blessing. Can we start by talking about the businesses along the Lightrail line?

Moderator: Absolutely, let's use that as a jumping off point for our discussion. What did you think (said to confederate who suggested the topic)?

As the discussion unfolded, the two Confederates served two functions. First, they acted as informal facilitators, ensuring that there would be no lull in the conversation. Second, they were each equipped with four pieces of information to bring up during the conversation. The information came directly from the briefing packets and covered four of the six topics the packets addressed. Each participant had two pro-Lightrail and two anti-Lightrail pieces of information, and the valence of one confederate's information offset the valence of the others. For example, one confederate was trained to note that the Lightrail was projected to raise the revenue of businesses along the Lightrail by roughly 15% (Business, Pro), the other raised how the Lightrail might adversely impact small, local businesses who cannot afford the higher lease rates along the Lightrail line (Business, Con). The desired effect was to emphasize that a) each issue had both positive and negative attributes/consequences, and b) the two confederates were supportive of but also had reservations about the

Lightrail project. Although relatively subtle, the intention was to emphasize the complexity of the issue and to make complex representations normative.

After 30 minutes, the Moderator brought the discussion to a close. After the deliberation – or, in the other two conditions, after reviewing the briefing packet(s) for 15 minutes – the Moderator introduced the assessment materials:

The state legislature is interested in multiple kinds of feedback on this project. Some want facts and figures. Other legislators want to hear what you have to say about the ideas. Accordingly, we'll complete multiple kinds of measures. When you have completed each packet, please slide it into your envelope to ensure confidentiality. When everyone is done with the packet at hand, we'll move on to the next one.

The first set of questions has to do with what you thought about the proposal and what stood out for you.

The Moderator then handed out the first set of measures, which assessed participants' attitudinal ambivalence and recall of the information presented in the briefing booklets. Once all participants completed those measures and placed them in their personal data privacy envelope, the Moderator introduced the next task.

Next, you are going to write a letter to the Transportation subcommittee in which you let them know what you think about the proposal, and why. Please print legibly, we will be typing these letters and sending them to the Legislature. Your names will not be included with the letter.

Again, once all participants completed the task and placed their materials in their personal data privacy envelope, the Moderator introduced the next task:

Finally, we have a few traditional survey questions about the U-RIDE proposal. Again, when you are done, slide the form into your envelope.

When all participants had completed the final block of outcome measures and placed them in their personal privacy envelope, the Moderator brought the Investigator back into the room. The Investigator reminded participants that there was one final

session, to be held the following week at the same time, on the same day, in the same location. Participants were then thanked and dismissed.

Session 3 – Outcome Measures. Participants returned one week later for Session 3. Participants in the *deliberation* condition were told that the other students (i.e., the confederates) had either come in earlier that week to complete the session or had notified the Investigator about an illness or conflict and had scheduled a make-up session. The Investigator then laid out a cover story to explain why participants would be completing the same set of outcome measures in Session 3 as in Session 2:

Last week, we walked through the background of the Lightrail project and you learned a number of anticipated outcomes. We then asked you what you thought about the Lightrail. In the polling and focus group world, we call that “immediate opinion” because we get it immediately after you learn about the object. And usually, that’s how these things work.

The problem is, nobody makes decisions that way. Whether you’re buying a new phone, voting for a President, or deciding who you want to date, you don’t learn about something and make an immediate decision. You live with the information for a while. In polling and focus groups, we call this “settled opinion” because the information has had a time to “settle in” and congeal.

So today, we’re going to see what you think about the Lightrail now that you’ve lived with the information for a week. Some of the measures you complete today will be just like last week’s, others a little different. As before, I will need to step away and (Moderator) will run the session. I’ll see you all shortly.

At this point, the Moderator took control and delivered the outcome measures following the same script and procedure employed in Session 2. When all participants had completed the three blocks of outcome measures, the Investigator returned to the room and debriefed the participants. Special care was taken to explain the cover story, why deception was used, which aspects of the project were real and which concocted,

and where additional information about the Lightrail could be found. Participants were asked to remain quiet about the study's true nature, as data collection was ongoing. Finally, they were thanked and dismissed. Only one participant expressed any doubt in the cover story, having tried to find additional information about the Lightrail online and found it difficult. Her data were retained, as her experience was consistent with the cover story that the Lightrail planning was not yet finished and therefore official information not easily found. She was not able to find any information that would have altered her experience as a participant or provided her with unique knowledge.

Measures. All participants completed an initial battery of individual difference measures as well as questions assessing demographic characteristics and commuting habits (Appendix G). In Sessions 2 and 3, all participants completed a base set of outcome measures (Appendix H). Session 2 also included a set of manipulation check measures modeled on the tenets of deliberative democracy. All participants completed four non-deliberation based questions; participants in the *deliberation* condition completed an additional 9 items to assess the extent to which their deliberation matched the *desiderata* set forth by deliberative democratic theorists.

Session 1.

Need for Cognition. Participants completed the short form (18 items) of the Need for Cognition scale (Cacioppo, Petty, Feinstein, & Jarvis, 1996; see Haugtvedt & Petty, 1992, for rationale). Representative items included “I would prefer complex to simple problems,” “I only think as hard as I have to (reverse-coded),” “I usually end up deliberating about issues even when they do not affect me personally,” and “Learning new ways to think doesn't excite me very much (reverse-coded).” Participants endorsed

each statement on a 5-item Likert scale anchored by 1 = *Extremely Uncharacteristic* and 5 = *Extremely Characteristic*. Participant scores were moderate ($M = 3.53$, $SD = .59$) and internally consistent ($\alpha = .88$).

Need for Closure. Participants completed the Need for Closure Scale (Webster & Kruglanski, 1994) by indicating agreement with each of 47 items. The 6-point response scale was anchored by 1 = *Strongly Disagree* and 6 = *Strongly Agree*. Sample items include “I dislike questions which could be answered in many different ways,” “I find that a well ordered life with regular hours suits my temperament,” “When faced with a problem I usually see the one best solution very quickly,” and “I tend to struggle with most decisions (reverse-coded).” Scores indicated moderate need for closure among participants ($M = 4.63$, $SD = .46$) and reasonable internal consistency reliability ($\alpha = .85$).

Political knowledge. Participants completed eight items designed to assess a general level of political knowledge. Political knowledge scores were created by calculating the number of correctly answered items (range 0-8). Sample items included a) identifying Nancy Pelosi’s job (Speaker of the House of Representatives, half-credit for Congresswoman), b) indicating the number of Senators from California, c) identifying which branch of the federal government is tasked with nominating federal court judges, and d) indicating which party currently controls each house of Congress. On average, participants correctly answered 3.75 of 8 items ($SD = 1.95$).

Preference for Consistency. Participants’ preference for consistency (Cialdini et al., 1995) was assessed through nine 9-point Likert items. Participants indicated the extent to which they agreed with each item by selecting a score on a scale anchored by

Strongly Disagree (1) and *Strongly Agree* (9). Sample items include a) It is important to me that those who know me can predict what I will do, b) I typically prefer to do things the same way, and c) I want to be described by others as a stable, predictable person. Participant scores ($\alpha = .89$) indicated a moderate preference for consistency ($M = 5.23$, $SD = 1.39$).

Normative deliberative beliefs. Respondents' endorsements of different deliberative norms were assessed with 8 items (see Borgida et al., 2008). Participants were asked to indicate the extent to which they agree with each of the statements using a 5-point scale anchored by (1) *Strongly disagree* and (5) *Strongly agree*. Sample items include "Different points of view need to be included and consulted in making decisions," "Everyone should have an equal say when making important decisions that affect everyone," "It is important to question, maybe even to change, the rules of discussion, not just follow them," and "Listening to other people's views can broaden and enrich my own views." The items formed a scale with moderate internal reliability ($\alpha = .61$); participants strongly endorsed the normative belief items ($M = 4.25$, $SD = .41$).

Personal deliberative beliefs. Participants indicated how often they believed each of seven statements characterized their recent discussions of political and community issues. Participants responded on a 9-point scale with the following labels, *None of the time* (0), *About half of the time* (4), and *All of the time* (8). Sample items included, "I participate in discussions with people who have very different views from my own," "When people have different viewpoints from me, I try to look at things from their perspectives," and "As long as I get a say in things, I go along with decisions even

if I don't get my way." Participants indicated that they engaged in deliberative behaviors to a moderate degree ($M = 5.45$, $SD = .86$); the scale showed moderate reliability ($\alpha = .58$).

Session 2.

Tenets of deliberative democracy. Several questions assessed whether participants' experience matched the ideal deliberative setting laid out by deliberative democratic theorists. To assess opinion diversity, all participants rated, on separate 7-point Likert scales, the extent to which they "encountered multiple points of view" and "were provided with substantive reasons to support (oppose) the Lightrail". All participants also reported the extent to which they "actively evaluated the information presented" to them. Additionally, participants in the *deliberation* condition were asked to assess the extent to which they felt that they had an equal say in the discussion (equality of voice), gave and received reasons for their preferences (reason-giving), gave and received respect for their opinions (respect for the process), felt accountable to other participants (accountability), and were thoughtful when listening to information discussed (reciprocity). The nine deliberation-only items inquire about deliberative norms and processes that ought to have been operative in the deliberation condition.

Sessions 2 and 3.

Attitude content. Participants' evaluative, cognitive and affective attitude components were each assessed by four semantic differential scales taken or adapted from Crites, Fabrigar, and Petty (1994). Sample items include the extent to which "implementing (the Lightrail) is Extremely undesirable/Extremely desirable," participants "think of (the Lightrail) as Extremely harmful/Extremely beneficial," and

“considering implementing (the Lightrail) makes (participants) feel Extremely sad/Extremely happy.” All twelve items employ a nine-point scale (1 to 9) where higher scores reflect more positive assessments. The mean of each four-item set was used to create participants’ evaluative, cognitive, and affective scores in Session 2 ($\alpha = 0.88$, $\alpha = 0.80$, and $\alpha = 0.77$, respectively) and Session 3 ($\alpha = 0.89$, $\alpha = 0.85$, and $\alpha = .78$, respectively).

Attitude structure. Based on the premise that the size of the correlation between an attitude component and the global evaluation indicates the contribution of the component to the attitude (Eagly & Chaiken, 1995), attitude structure was measured by generating two partial correlations. The correlation between the global evaluation scale and the cognitive component scale, controlling for the influence of the affective component scale ($r_{EC.A}$), determined the extent to which respondents’ Lightrail attitudes were consistent with their thoughts about the Lightrail. The correlation between global evaluation and affective component scales, controlling for the cognitive component scale ($r_{EA.C}$), assessed the extent to which respondents’ Lightrail attitudes were consistent with their feelings about the Lightrail.

Subjective attitude strength. To assess the strength of participants’ attitudes towards the Lightrail, participants described how certain they were in their attitude about the Lightrail (attitude certainty), how thoughtful they thought they had been in considering the information presented (perceived thoughtfulness), and how much they thought they knew about the Lightrail project (perceived knowledge). Attitude certainty was assessed using a 7-item measure (Petrocelli, Tormala, & Rucker, 2007); sample items include “How certain are you that you know what your true attitude toward U-

RIDE really is?” and “How certain are you that your attitude toward U-RIDE is the correct attitude to have?” Participants marked their responses on nine-point Likert type scales anchored by *Not at all Certain* (1) and *Very Certain* (9). The scale showed solid internal consistency reliability in Session 2 ($\alpha = 0.85$) and Session 3 ($\alpha = 0.91$).

Self-perceptions of thoughtfulness were assessed with three items, including “How carefully did you think about U-RIDE?” (Session 2 $\alpha = 0.83$, Session 3 $\alpha = 0.88$). Perceived knowledge was assessed by four items, including “How knowledgeable do you feel about U-RIDE?” (Session 2 $\alpha = 0.91$, Session 3 $\alpha = 0.91$). Participants completed the thoughtfulness and knowledge items by endorsing a value on seven-point (1-7) Likert type scales (see Smith et al., 2008).

Attitudinal ambivalence. Participants separately assessed the extent to which the Lightrail project was positive and negative, completing three items for each valence (favorable, positive, beneficial; unfavorable, negative, harmful). Participants chose one of four response options (e.g., not at all favorable, slightly favorable, quite favorable, extremely favorable; not at all unfavorable, slightly unfavorable, quite unfavorable, extremely unfavorable).

Each participant’s mean response within each valence was scaled to range from 0 to 1 and used to calculate attitudinal ambivalence with formulas proposed by Scott (1966)⁶ and Thompson and colleagues (Thompson, Zanna, & Griffin, 1995)⁷. Consistent with extant research (Breckler, 1994), the two formulas generated remarkably similar ambivalence scores ($r = .96$ at Session 2, $r = .95$ at Session 3,

⁶ (Weaker Attitude Mean)²/(Stronger Attitude Mean)

⁷ ((0.5(Weaker Attitude Mean + Stronger Attitude Mean)) - (|Weaker Attitude Mean - Stronger Attitude Mean| + 0.5) / 1.5).

Breckler (1994) $r = .97$).⁸ Because the Thompson formula is more sensitive to variance when ambivalence scores are low (Breckler, 1994), the Thompson equation was used in order to discriminate between the low levels of ambivalence induced in participants. The resulting scores have a theoretical range of 0 to 1, where higher scores reflect greater attitudinal ambivalence.

Deliberative and elaborative complexity. Participants' letters, ostensibly sent to the state legislators who serve on the Transportation and Transit Policy and Oversight subcommittee, were coded for integrative complexity (see Baker-Brown, Ballard, Bluck, de Vries, Suedfeld, & Tetlock, 1992, for manual), as well as dialectical and elaborative complexity (see Conway et al., 2008, for manual). Integrative complexity assigns greater values to participants' written statements to the extent that they recognize (differentiation) and attempt to reconcile (integration) competing considerations, but rewards equally the use of multiple arguments in service of one point of view and the presentation of multiple points of view. Conway and colleagues (Conway et al., 2008) distinguish between dialectical and elaborative complexity, allowing coders to independently assess the presentation of multiple view points (dialectical) and multiple arguments within a viewpoint (elaborative). Dialectical and elaborative complexity scores range from 1 to 7. For dialectical complexity, a score of 1 indicates that only one point of view was offered, a score of 3 indicates that at least

⁸ Although the Scott formula has two advantages over the Thompson revision – the Scott formula is curvilinear and so yields greater ambivalence at more extreme attitude values and always yields an ambivalence score of zero when either attitude score is zero (regardless of the other attitude score) – both formulas satisfy the three desiderata for measures of ambivalence: a) holding the more extreme value constant, increasing the lesser value increases ambivalence, b) holding the less extreme value constant, increasing the more extreme value decreases ambivalence, and c) when the two ratings are equal, ambivalence increases with the extremity of the scores (Breckler, 1994; Thompson, et al., 1995).

two points of view are offered, and scores of 5 indicate that the multiple points of view are explicitly integrated or reconciled. For elaborative complexity, a score of 1 indicates that only one argument is set forth for each point of view offered, a score of 3 indicates that at least two arguments are set forth for at least one of the points of view offered, and a score of 5 indicates that those multiple arguments have been integrated into an overarching or summary argument on behalf of the point of view. Scores of 2 and 4 represent half-way points between these bright lines; scores of 6 and 7 indicate thinking in terms of structural processes and interrelations among variables and are not applicable here.

Clustered Recall. Participants were asked to recall everything they could about the proposal, and to place each recalled item in a separate box. Participants were initially provided with 17 boxes and were allowed to ask for more if needed.

Two coders, trained using in-house definitions and examples, evaluated the accuracy of each recalled item and assigned one of five codes: *complete*, *gist*, *partial*, *inaccurate*, or *unrelated*. The first three codes denote differences in the extent of detail in items that are correctly recalled. An item was coded as *complete* if it was a nearly verbatim recount of the information presented in the informational booklet(s) presented to participants. If the recalled item involved percentages, only minimal deviation from the correct percentage was allowed for an item to be coded as *complete* (e.g., “15% (to 19%) reduction in traffic on I-94 between the two downtowns” when the proper percentage was 17%). To be coded as *gist* recall, an item had to retain the basic idea presented in the booklet but did not need to use perfectly accurate statistics (e.g., 8% instead of 15%) or provide all of the detail in the original item (e.g., “they talk about

pedestrian malls in near the U of M campus but don't talk about the sidewalk cafes or performance spaces mentioned in the item"). Coders labeled an item as *partial* recall when it satisfied one of two criteria. First, the item was accurate but overly simplistic and almost without detail (e.g., "Washington Ave Bridge closed"). Alternatively, an item could be coded as a *partial* recall if it met the qualifications for a *gist* code but also contained some information that was inaccurate or absurd (e.g., "Washington Ave Bridge closed for one year during construction except for unicycles"). That additional piece of absurd/inaccurate information could not invalidate or reverse the main idea of the item; it had to simply add an element that suggested less complete or accurate recall.

The fourth code, *inaccurate* indicates that the participant misremembered the main point of the item he or she was attempting to recall. If a statement listed during the recall task clearly referenced an item in either the initial PowerPoint or informational booklet(s) but misrepresented that information completely (e.g., "increase I-94 traffic" when the booklet indicated a 17% reduction was anticipated), the item was coded as *inaccurate*.

The fifth, *unrelated*, designates that the statement cannot be linked back to either the initial PowerPoint introduction or the informational booklet(s) provided to participants. An item was coded as *unrelated* if it was commentary rather than recall (e.g., "this is a great idea") or if it constituted a statement that did not come from (and did not contradict, as with an *inaccurate* statement) the initial PowerPoint or the informational booklet(s) provided to participants (e.g., this project should mean more jobs for the area).

The recall task was used to create an *adjusted ratio of clustering* (Roenker, Thompspon, & Brown, 1971), an assessment of the organization of participants' memory for information related to the Lightrail. An individual with a high content clustering score would recall several pieces of information tied to one issue regardless of valence before moving on to information about a second issue (e.g., positive and negative environmental, then positive and negative economic). An individual with a high valence clustering score would recall several items of the same valence in a row, regardless of the topic of the information (e.g., positive environmental and economic, then negative environmental and economic). Adjusted Ratio of Clustering scores range from 0 to 1, with higher scores reflecting greater clustering.

To create the adjusted ratio of clustering scores, items from the recall task were first coded for accuracy (see above), then coded with regard to content and valence. Two coders individually identified the statement in either the PowerPoint or informational booklet(s) that most closely matched the participant's recalled statement and assigned the appropriate content and valence category to the item. Content categories included a) what it was like to *ride* the Lightrail, b) the impact on *business*, c) who would *pay* for the construction and maintenance, d) what impact the Lightrail would have on the *environment*, e) the project's impact on *neighborhoods*, f) how the plan would tie into or disrupt the existing *commute* in the Twin Cities, g) background information contained in the initial *powerpoint*, and h) *other* information not derived from material presented to participants.

Statements could receive a valence code of *pro*, *con*, *neutral*, and *unrelated*.

Statements from the first six content categories could be coded as *pro* or *con*, depending

on the statement being referenced. All codes were assigned based on the statement to which the recalled item was referring, not the tone of the participant's statement. For example, if a participant decried a piece of information that pilot-tested as a reason to support the Lightrail, the item was coded *pro* rather than *con*. All *powerpoint* statements were coded as *neutral*. Statements that received the *other* content category code were coded as having an *unrelated* valence, as it was impossible to verify how favorable any given statement would be rated by a broad set of participants.

The two independent raters – who were blind to the condition to which participants were assigned – demonstrated an acceptable degree of absolute agreement with regard to content (85.3%) and valence (88%) category coding. Restricting the valence category coding to include only those items on which coders agreed on the initial content category (which then directs the valence code) substantially improved the rate of agreement (96.7%). All discrepancies between coders were resolved by the author, who was blind to which participant's response was being coded and the condition to which the participant was assigned.

The final codes were combined to create the raw data needed to create adjusted ratios of clustering: the total number of recalled items, the number of categories employed, the number of recalled items within each category, and the number of times two consecutively recalled items fell within the same category. Following McGraw, Pinney, & Neuman (1991), the adjusted ratio of clustering (ARC) was computed by dividing the difference between the observed and expected number of repetitions⁹ by

⁹ The expected number of repetitions is a function of the number of items recalled from each category (m), the number of categories (k), and the total number of recalled items (N); $(\sum m(k^2)/N - 1)$.

the difference between the maximum number of possible repetitions¹⁰ and the expected number of repetitions. ARC represents the proportion of the possible number of repetitions that actually occur, controlling for the repetitions expected due solely to chance. Separate content and valence ARC scores were calculated for each participant.

Felt ambivalence. Participants completed five items designed to assess how ambivalent they felt with regard to the Lightrail project. Participants indicated on an 11 point scale [-5 (strongly disagree) to +5 (strongly agree)] the extent to which they found themselves “having strong emotions for and against,” “feeling torn between the supporting and opposing,” “feeling conflicted when deciding to support or oppose,” “experiencing indecision about,” and “having mixed reactions to” the Lightrail proposal. The felt ambivalence scale showed solid internal consistency reliability in Sessions 2 and 3 ($\alpha = 0.88$ and $\alpha = 0.90$, respectively).

Elaboration. The recall task on which clustered recall is based was also used to approximate the extent to which participants elaborated upon the information with which they were presented. Elaboration was measured by taking the mean of the proportion of a) items correctly recalled from the briefing booklets at Session 2 and b) categories from the briefing booklet represented in those correctly recalled items. Proportions were used to put the two items on the same scale (0-1). The two measures were related but not identical ($r = .59$); the variate encompasses both the breadth and depth of participant recall.

Manipulation Checks and Preliminary Analyses

¹⁰ The maximum number of repetitions is equal to the difference between the total number of recalled items and the total number of categories into which those items fall, or $N - k$.

Verification of random assignment. Participants' scores on each screening scale – Need for Cognition, Need for Closure, Preference for Consistency, political knowledge, normative deliberative beliefs, personal deliberative beliefs, and commuting habits – were regressed onto the dummy-coded manipulation and cluster-robust standard errors employed to control for the non-independence of individuals in the *deliberation* condition. Analyses confirmed that experimental condition was not significantly associated with participants' Need for Cognition [$F(2,162) = 0.93, p = .40$], Need for Closure [$F(2,162) = 0.13, p = .87$], Preference for Consistency [$F(2,162) = 0.58, p = .56$], political knowledge [$F(2,162) = 2.26, p = .11$], personal deliberative beliefs [$F(2,162) = 0.86, p = .43$], or normative deliberative beliefs [$F(2,162) = 0.51, p = .60$]. Additionally, there were no differences by condition in the number of days each week that participants commuted by walking [$F(2,160) = 1.08, p = .34$], biking [$F(2,160) = 0.29, p = .75$], taking mass transit [$F(2,160) = 0.93, p = .40$], or operating a motor vehicle [$F(2,160) = 0.03, p = .97$].

Dissimilarity of complexity measures. Internal consistency reliability analyses indicate that the five measures of complexity were not related to one another at Session 2 ($\alpha = .10$) or Session 3 ($\alpha = .03$); most zero-order correlations were non-significant (Table 1). Moreover, putting all five complexity measures onto the same scale (0-1)¹¹

¹¹ Attitudinal ambivalence and the two clustering measures (content- and valence-based recall) all have a maximum value of 1.0; attitudinal ambivalence has an absolute zero point (0), but the clustering measures do not. A value of 1 was subtracted from dialectical and elaborative complexity scores (possible range 1-7), which were then divided by 6. Content- and valence-based clustering were transformed by recoding all values below zero to zero; all values below zero reflect clustering at chance levels.

The recoded complexity measures ranged from .19 to .40 in Session 2 and from .20 to .39 in Session 3 [Session 2: attitudinal ambivalence ($M = .40, SD = .06$), dialectical complexity ($M = .29, SD = .19$), elaborative complexity ($M = .30, SD = .12$), content-based recall ($M = .24, SD = .25$), valence-based recall ($M = .19, SD = .24$); Session 3: attitudinal ambivalence ($M = .39, SD = .06$), dialectical complexity

and comparing mean levels (collapsing across experimental condition) indicated that some measures of complexity were, as anticipated, more difficult to induce. Repeated-measure ANOVAs with a Greenhouse-Geisser correction indicated significant differences between complexity measures in both Session 2 [$F(3,707.18) = 44.23, p < .001$] and Session 3 [$F(3.03,690.75) = 32.30, p < .001$]. Pairwise comparisons indicated that in Session 2, attitudinal ambivalence was significantly larger than all other outcome measures (all $ps < .001$); followed by dialectical and elaborative complexity, which did not differ from one another ($p = .34$) but were each significantly larger than the two clustering measures (all $ps < .01$); followed by content-based recall and then valence-based recall, which differed significantly from one another ($p = .015$). In Session 3, attitudinal ambivalence was again significantly larger than all other outcome measures (all $ps < .001$); followed by elaborative complexity and content-based recall, which did not differ from one another ($p = .65$) but were each significantly larger than elaborative complexity and content-based recall (all $ps < .02$); followed by dialectical complexity and valence-based recall, which did not significantly differ from one another ($p = .35$). Consequently, the analyses presented in Chapters 4 and 5 address each of the five measures of complexity separately.

Engagement. Several measures of engagement suggest that participants were attending to, learning about, and forming distinct attitudes toward the Lightrail. The most direct evidence of engagement comes from the *amount* of information participants

($M = .22, SD = .18$), elaborative complexity ($M = .28, SD = .15$), content-based recall ($M = .27, SD = .28$), valence-based recall ($M = .20, SD = .25$).

were able to recall in both Sessions 2 and 3.¹² Recall that participants were given 15 minutes to consider 32 discrete pieces of information about the Lightrail. Collapsing across conditions, in Session 2, the average participant correctly recalled one-third of the items contained within the information booklets ($M = 10.62$, $SD = 3.02$, $Median = 10.5$); participants validly recalled between 2 and 22 items. One week later, in Session 3, the average participant recalled more than one quarter of all booklet-based information ($M = 8.68$, $SD = 3.63$, $Median = 9.0$); participants recalled between 2 and 17 items.

The *breadth* of information recalled also suggests that participants were engaged in the task. In Session 2, the average participant recalled at least one item from more than 5 of the 6 categories ($M = 5.33$, $SD = 0.80$, $Median = 6.0$); in Session 3, one week later, the average participant still recalled information from almost five categories ($M = 4.87$, $SD = 1.04$, $Median = 5.0$).

Beyond recall, participants' assessment of their attitudes toward the Lightrail suggests that they were engaged enough with the material to know whether they were experiencing conflicting emotions about the proposal. By examining participant scores on a folded version the 11-point felt-ambivalence scale – creating an item on which higher scores reflect greater certainty about the extent to which one did (or did not) feel ambivalent (maximum folded score is 5) – it is clear that participants were not half-hearted in their assessments. The average participant's score on the folded measure differed significantly from 0, the score of pure indifference, in both Session 2 [$M =$

¹² Informal conversations with participants following debriefing revealed that some participants did not consider the powerpoint background information “fair game” for the recall task. Accordingly, to provide scope for the number of items recalled and to thereby assess the extent of participant engagement, recall here is confined to the items contained within the information booklet only.

2.55, $SD = 1.48$; $t(239) = 26.74$, $p < .001$] and Session 3 [$M = 2.52$, $SD = 1.56$; $t(232) = 24.66$, $p < .001$]. Some were torn, others wholly convinced of one side's merits, but almost all were sufficiently engaged to offer an opinion on their emotional state.

Finally, there is some evidence that participants were sufficiently engaged that they behaved as if they were high in the Need for Cognition regardless of their actual Need for Cognition scores. Recall that *argumentation* participants are unique in that they received two oppositely valenced information booklets, the order of which was randomized and tracked. Extant research (Petty et al., 2001) has proposed and demonstrated that individuals high in the Need for Cognition will show a primacy effect when material is presented in discrete segments, the earlier material leading to biased processing (e.g., Eagly et al., 2000) of later material. Participants low in the Need for Cognition show a recency effect, their attitudes influenced by the only information they can recall – that which is still in short-term memory. Following Petty and colleagues' work on information consolidation among individuals high and low in the need for cognition (Petty et al., 2001), *argumentation* participants' attitudes were examined for a primacy effect by regressing their overall evaluation of the Lightrail plan on a dummy variable indicating order of presentation (1 = positive first, 0 = negative first), centered Need for Cognition, and their interaction. Participants showed a main effect of order (primacy) ($B = 1.39$, $S.E. = 0.47$, $p = .005$) and a marginal main effect of the Need for Cognition ($B = 1.12$, $S.E. = 0.59$, $p = .06$) that went unqualified by their interaction ($B = -.31$, $S.E. = 0.78$, $p = .70$), suggesting that the task was sufficiently engaging for all participants to act as if they were dispositionally high in the propensity to engage in effortful thought.

Although none of these analyses on its own definitively demonstrates that participants were deeply engaged in the task before them, they collectively suggest that participants were not mindlessly muddling through the procedure.

Replication of deliberative polling. Descriptively, the deliberation in this setting lacked the impact and scope of existing deliberation research. Rather than a full day or long weekend – complete with long intervals between information acquisition and deliberation during which participants could conduct their own inquiries, panel discussions with experts or candidates, and informal interaction among participants – participants’ engagement with the material lasted under an hour. By design, deliberation was meant to be targeted, informed, and brief. The distinction is not unimportant. Sunstein and colleagues (Schkade et al., 2006) have shown the danger of ill-conceived deliberation. Accordingly, the deliberations created here were compared to theorists’ expectations and extant research on deliberation’s empirical consequences.

Deliberation participant self-report. Deliberative theorists have argued that deliberation will be more successful to the extent that people have equal access to and power in the deliberation; give reasons to support their preferences and require others to do so as well; listen to others’ reasons and remain open to their influence; thoughtfully consider all information presented; and hold one another accountable to the process and to each other (Chambers, 2003; Cohen, 1989; Conover & Searing, 2005; Estlund, 1997; Gutmann & Thompson, 2004; Shapiro, 2002). Accordingly, participants who deliberated were asked to assess the extent to which they felt that they had an equal say in the discussion, provided reasons for their preferences, listened respectfully when others voiced their opinion, felt that their opinions were respected, felt accountable to

other participants, and tried to be careful and thoughtful about the matter at hand.

Participants also rated the extent to which they felt that the other participants provided reasons for their preferences, were accountable to them, and were careful and thoughtful about the matter at hand. Participants responded to all items using a 7-point Likert scale anchored by “strongly disagree” (1) and “strongly agree” (7).

The self-report measures suggest that participants (believed themselves to have) complied with the normative guidelines for deliberation. One sample *t*-tests confirmed that the average assessment for each item was significantly greater than target values of 4.0 (the midpoint) and 5.0. In fact, for seven of the nine items, participants’ ratings were significantly greater than 6.0; the two accountability items were significantly smaller than 6.0 (see Table 2). Although suggestive, these data are subject to self-enhancement motives; moreover, participants have little, if any, objective standard by which to evaluate their experience. Accordingly, objective measures of deliberation’s impact were addressed.

Breadth of topics deliberated. First, consider what actually happened during deliberation sessions. Did participants take the instructions to heart and engage with the breadth of the material or did they hone in on a single piece of information? Moderators’ notes indicate the former. In fact, nearly every deliberation session addressed nearly every category of information to which participants were introduced. Deliberation topic information from 48 of the 54 deliberation groups was properly collected and stored. Examination of the notes indicated that the average deliberation addressed between 7 and 8 ($M = 7.65$, $SD = 1.18$) of the nine pre-determined topics available for discussion.

Moreover, group size did not affect the number of topics addressed. Of the 48 groups for which records were properly collected and maintained, four had only one participant, 16 groups had two participants, 23 groups had three participants, and five groups had four participants. Again, all deliberation groups also included two confederates. On average, groups with one participant discussed 8.50 topics ($SD = .58$); groups with two ($M = 7.69, SD = .95$) and three ($M = 7.61, SD = 1.31$) participants addressed more than 7.5 topics; groups with 4 participants covered 7.0 topics ($SD=1.41$). An independent samples t-test comparing groups with 1 or 2 ($M = 7.85, SD = .93$) participants to those with 3 or 4 ($M = 7.50, SD = 1.32$) was not significant ($t(46) = 1.08, p = .29$). Regardless of group size, deliberation sessions addressed the majority – if not nearly all – topics put forth in the briefing booklets and PowerPoint introduction. If one criterion of successful deliberation is consideration of the breadth of relevant information on the topic – and the diversity *desideratum*, aimed at bringing unique voices into the discussion, is thought to accomplish just that – the deliberation sessions that took place were a success.

Similarity within and between deliberation groups. A second consideration of the deliberations' success is the extent to which participants within groups emerge with similar views. If each deliberation is a unique environment in which pieces of information are given specific degrees of importance, in which some topics take precedence over others, and in which the idiosyncratic personalities of group members matter, there should be evidence that group members are more similar to one another than they are to randomly selected participants who deliberated in other groups. Intraclass correlations (ICC) were calculated for the five outcomes in Session 2 for

deliberation groups with two and three participants.¹³ Recall that ICC values range from $(-(n-1))$ to 1. For groups of two, scores can range from -1 to 1; for groups of three, the ICC can range from -0.5 to 1.0. Scores above zero indicate more variance within groups than between groups, evidence that groups matter.

Examining the ICC of participant scores on the five main outcome measures among groups of 2 and 3 participants indicated that for seven of ten items, within-group variance outweighed between-group variance. Moreover, groups of three participants showed higher within-to-between-group variance ratio, indicating the greater importance of group (see Table 3). Nearly half of all groups (25 of 54) had three participants; nearly three quarters had two or three participants (43 of 54). That a supermajority of deliberation groups showed greater within- than between-group variance on the key outcome measures – even though most deliberations covered most, if not all, of the same topics – suggests that deliberation was a cohesive, binding process that differs from individual consideration of information.

Attitudes. Two additional investigations, pertaining to the origin and extremity of participants' attitude towards the Lightrail, add further evidence that deliberation was successfully invoked.

First, past deliberation research consistently documents attitude change as a function of information gains. To replicate this effect and provide assurance that similar processes are operative in the deliberations conducted here, *deliberation* condition participants' attitude (the mean of participants' cognitive and evaluative attitude components, $r = .82$ in Session 2 and $r = .85$ in Session 3) toward U-RIDE was

¹³ Too few groups had four participants, precluding analysis; groups of 1 don't allow for measures of similarity.

regressed on to the ratio of the proportion of all recalled items that were positive to the proportion that were negative. To the extent that the deliberations conducted here were similar to those conducted within Deliberative Polls, the valence of participants' attitudes should reflect the balance of positive-to-negative recalled information. Consistent with expectations, the positive-to-negative ratio of recalled items was significantly and positively related to participants' attitude toward the Lightrail project in Session 2 [$F(1,133) = 4.27, p = .04; \beta = .18$] and Session 3 [$F(1,133) = 5.85, p = .02; \beta = .21$]. As in extant deliberation research, attitudes toward the topic of deliberation were a function of the information participants learned.¹⁴

The second attitude-related inquiry addresses the extremity of deliberation participants' attitudes. Poorly-designed deliberation – exemplified by Sunstein's (Schkade et al., 2006) purposeful failure to follow deliberative theorists' prescriptions – results in attitude polarization. Because the short discussion time employed here is similar to that used by Sunstein and colleagues, it is imperative to show that these deliberations did not yield differentially extreme views of the Lightrail. *Deliberation* participants' scores on a folded version of the overall evaluation of the Lightrail (absolute value of difference between participant score and midpoint, scores could range from 0 to 4) were compared to *elaboration* and *argumentation* participants' by regressing the folded scale on the two manipulation dummy-codes and using cluster-robust standard errors to control for the nonindependence within the *deliberation*

¹⁴ For participants in the *argumentation* condition, the ratio of positive to negative recalled items was not related to participant attitudes in Session 2 [$F(1,54) = .55, p = .46, \beta = .10$] but was at Session 3 [$F(1,52) = 6.77, p = .01, \beta = .34$]. For participants in the *elaboration* condition, the ratio was significantly related to participant attitudes at Session 2 [$F(1,48) = 6.07, p = .02, \beta = .34$] and Session 3 [$F(1,47) = 4.82, p = .03, \beta = .31$].

condition.¹⁵ Results indicate that *deliberation* ($M = 1.36, SD = 1.05$), *elaboration* ($M = 1.36, SD = 0.94$), and *argumentation* ($M = 1.45, SD = 1.09$) participants had comparably extreme overall evaluations of the proposal (all $ps > .60$) in Session 2. The same pattern emerged one week later in Session 3 [*deliberation* ($M = 1.49, SD = 1.09$), *elaboration* ($M = 1.63, SD = 0.95$), and *argumentation* ($M = 1.53, SD = 1.16$); all $ps > .43$].

Summary – Deliberation Replication. The deliberation sessions employed in this investigation differed markedly from the more expansive protocols employed by other deliberation researchers. Nonetheless, the deliberations conducted can be thought of as “true” deliberation inasmuch as they operated similarly to other operationalizations that wear that distinction. First, participants’ reports of the deliberations matched theorists’ prescriptive recommendations: participants felt that they had an equal say in the discussion, that they and others gave reasons for their preferences, that they and others were thoughtful and considered the arguments put forth, and that they and others seemed accountable to the process at large. Second, during deliberation, all groups covered most if not all topics brought up by the briefing booklets and PowerPoint overview. Third, deliberating made participants within the session more similar to one another than they would have otherwise been. Fourth, consistent with extant deliberation research, participant attitudes were a function of the information they learned. And fifth, deliberating did not result in the kind of attitude

¹⁵ All participants within a given deliberation session were assigned the same code on the variable, “group”. Individuals in the *argumentation* and *elaboration* conditions examined materials individually, and so received a unique identifying code. Cluster-robust standard errors – with “group” acting as the clustering factor – were employed to account for non-independence in the *deliberation* condition. The adjustment yields larger standard errors and a more conservative assessment of deliberation’s effect on complexity.

polarization or extremity that emerges when theorists' *desiderata* fail to be implemented.

In all, the evidence suggests that deliberation occurred in these sessions. But before comparing deliberation to alternative means of information acquisition, the three levels of the manipulation must be shown to be distinct from one another. The manipulation's impact on participants' evaluations of, and memory for, the Lightrail proposal is examined below; analyses indicate that three distinct learning environments were created.

Comparing levels of the manipulation.

Analysis Strategy. Multiple linear regression analyses were used to compare participants in the three conditions on a host of attitude and memory measures. Experimental condition was represented by two dummy codes (one for each non-deliberation condition); the *deliberation* condition served as the reference condition. Accordingly, the constant in the regression equation indicates the mean for the *deliberation* condition and the unstandardized regression coefficient for each dummy-coded condition reflects the difference between the mean for that condition and the mean for deliberation; positive coefficients indicate that the non-deliberative condition under consideration has a higher mean than the *deliberation* condition. The *p*-value associated with the dummy code indicates whether the mean of that condition differs significantly from the mean of the *deliberation* condition. Results are reported in this way: the *deliberation* condition mean (the constant in the regression equation) is reported, as are the unstandardized regression coefficients for each non-deliberation condition and their *p*-values. In rare occasions, for the sake of clarity, a condition other

than *deliberation* serves as the reference condition. Those situations are clearly indicated, and the rules for calculating the non-reference condition means and interpreting differences across conditions just detailed apply.

Because individuals in the *deliberation* condition participated in a joint activity, their responses are not independent from those provided by individuals within the same discussion group. Accordingly, all participants within a given deliberation session were assigned the same code on the variable, “group.” Individuals in the *argumentation* and *elaboration* conditions examined materials individually, and so received a unique identifying code. In all regression analyses, cluster-robust standard errors – with “group” acting as the clustering factor – were employed to account for non-independence in the *deliberation* condition. The adjustment yields larger standard errors and a more conservative assessment of deliberation’s effect on complexity.

Perceptions of information provided. Participants in all conditions went through a basic protocol in which they were exposed to neutrally valenced, informative PowerPoint presentation and then exposed themselves to 16 pieces of information supporting and 16 opposing the Lightrail. Insofar as complexity requires valid arguments on two sides of an issue, it is important to assess participants’ perception of the information to which they were exposed. If participants – overall or within a given condition – feel that one or both sides of the argument is weak, complexity is significantly less likely to be induced. During Session 2, before completing any outcome measures, all participants rated on a seven-point scale the extent to which they were “provided with substantive reasons to support the Lightrail proposal,” were “provided with substantive reasons to oppose the Lightrail proposal,” and felt “that I

actively evaluated the information presented to me”); higher scores indicate greater agreement.

Results suggest that, ignoring condition, participants felt well informed and actively evaluated the information presented to them. Participants felt that they were presented with strong reasons to support ($M = 5.37, SD = 1.32$) and oppose ($M = 5.48, SD = 1.32$) the Lightrail, and that they actively engaged with that information ($M = 6.29, SD = 0.81$). Nonetheless, not all participants felt equally well-prepared: *deliberation* participants tended to report that they were less well briefed than did non-deliberating participants. Regressing evaluation of the pro-Lightrail information on the dummy-coded manipulation indicated that *deliberation* participants ($B = 5.21, M = 5.21$) were less likely to say that they were provided with substantive reasons to support the Lightrail than were *argumentation* participants ($M = 5.74; B = .53, p = .02$). The same analysis on the anti-Lightrail information revealed a similar pattern: *deliberation* ($M = 5.52, B = 5.52$) participants were significantly less likely to say that they were provided with substantive reasons to oppose the Lightrail than were *argumentation* participants ($M = 6.33, B = .81, p < .01$).¹⁶

Moreover, *deliberation* participants ($B = 6.21$) were marginally less likely than *elaboration* participants ($M = 6.41, B = .20, p = .10$) to endorse the notion that they actively evaluated the information presented to them. This occurred despite thoroughly addressing the information during deliberation: The average deliberation group covered more than seven topics ($M = 7.65, SD = 1.18$); 29 of the 48 groups covered at least eight of the nine topics. By making salient the number of dimensions on which the proposal

¹⁶ *Elaboration* participants ($M = 5.58$) were also significantly less likely to say that they were provided with substantive reasons to oppose the Lightrail than were *argumentation* participants ($p < .01$).

could be evaluated, and making plain the tradeoffs built into each topic, deliberating may have reduced participants' confidence in the material provided.

Attitude valence, structure and perceptions. The most straightforward comparison across conditions involves attitude valence. Comparison of participants' overall evaluation of the proposal indicated that, as with Muhlberger's (2005) Virtual Agora Project, participants' overall assessment did not differ as a function of condition in either Session 2 (all $p > .42$) or Session 3 (all $p > .26$). The same pattern held for participants' cognitive (Session 2, all $p > .27$; Session 3, all $p > .30$) and affective components (Session 2, all $p > .45$; Session 3, all $p > .87$). See Table 4 for means and standard deviations.

A second consideration of potential differences across conditions is the structure of the attitudes participants hold. Deliberation is ostensibly a hyper-cognitive activity in which participants ought to supply reasons for their argument, consider the merit of alternative views, and integrate competing claims in service of achieving a common good. Accordingly, one might expect a stronger evaluative-cognitive relationship among those who deliberate than among those who do not. Alternatively, deliberation rarely meets all criteria set forth by theorists (Grimes, 2008; Mansbridge, Hartz-Karp, Amengual, & Gastil, 2006; Polletta, 2008;) and so may not yield attitudes more firmly rooted in participants' cognitions.

Comparing the partial correlations of attitude components – the correlation between participants overall evaluation and one attitude component (e.g., affect or cognition), controlling for the other – across conditions using Fisher's z statistic (i.e., r') indicated that the manipulation did not affect the magnitude of the evaluative-cognitive

or evaluative-affective partial correlations. In Session 2, the relationship between *elaboration* participants' evaluative and cognitive components ($r_{EC.A} = .71$) was marginally stronger than that for *deliberation* participants ($r_{EC.A} = .53$, $p = .09$), an effect driven by the considerable number of participants in the *deliberation* condition. All other comparisons failed to reach even a trend level (for $r_{EA.C}$, all $p > .34$). In Session 3, no comparisons approached the trend level (for $r_{EC.A}$, all $p > .20$; for $r_{EA.C}$, all $p > .47$). See Table 5 for zero-order and partial correlations.

Attitude structure did not differ across condition. Similarly, within each condition, participants' overall evaluation was a function of both cognition and affect. Following Williams (1959), non-independent zero-order correlations (r_{EC} versus r_{EA}) were compared within each condition¹⁷. In no condition, in no Session, did the zero-order correlation differ significantly¹⁸. In short, deliberating did not lead to differently structured attitudes, and all participants relied comparably on cognition and affect when evaluating the Lightrail.

A final consideration of participant attitudes involves their subjective impressions of the attitudes they hold. Objective criteria like valence and structure notwithstanding, it may well be that participants who deliberate are more confident in the attitudes they hold, having spent an additional 30 minutes addressing the subject. Participants' attitude certainty, attitude clarity, attitude correctness, perceived

¹⁷ Because the Williams (1959) formula explicitly takes all possible correlations between components into account, essentially correcting for their relationship and factoring them out, I chose not to use the partial correlations for this analysis. Doing so likely factors out the relationship between the components twice, exaggerating the differences between them. Accordingly, I conducted the comparison of affect and cognition's impact using zero-order correlations. The same analyses, but with partial correlations, does not change the pattern of results.

¹⁸ Session 2: *argumentation* $t(54) = .02$, $p > .50$; *elaboration* $t(48) = 1.52$, $p > .10$; *deliberation* $t(135) = 1.14$, $p > .10$. Session 3: *argumentation* $t(53) = .33$, $p > .50$; *elaboration* $t(47) = 1.27$, $p > .20$; *deliberation* $t(135) = 1.20$, $p > .20$.

knowledge about the Lightrail, and perceived thoughtfulness were each separately regressed onto the dummy-coded manipulation; cluster-robust standard errors were employed. For no outcome, in either Session, did any condition differ even marginally from any other (see Table 6 for means and standard deviations).

As with attitude valence and structure, subjective impressions of one's Lightrail attitudes did not vary across conditions. This is, perhaps, not surprising. Insofar as the impact of deliberating – at least in the Deliberative Polling protocol – stems from the information to which participants are exposed before the deliberations begin (Farrar et al., 2006) and an information-filled day/weekend rather than from deliberating *per se*, attitudes shouldn't vary by condition. The set of information presented a) included an equal number of pilot-tested arguments for and against the Lightrail proposal, b) incorporated topics that are likely cognitive (impact on sales figures and traffic patterns) and affective (impact on the environment and neighborhoods), and c) addressed a topic that was novel for most participants. Participants were led to believe that they were being briefed with information provided by two transportation experts who were hired by a consortium of interests that included the state legislature and state department of transportation. Finally, were participants to look for additional information between Sessions 2 and 3, the paucity of news coverage at the time and the relatively early stage of the project (final, minor negotiations with institutions and citizen groups in advance of the beginning of construction) would have left them without additional data. As a result, it is not surprising that participants held attitudes towards the Lightrail that hovered near the midpoint and were neither overwhelmingly cognitive nor affective, or that participants were quite confident in their assessment of the project.

Memory. Deliberating and non-deliberating participants did not hold significantly different attitudes, possibly because all participants were exposed to the same set of information. However, deliberation should affect participants' recall. On the one hand, giving participants up to 30 extra minutes to engage with the Lightrail information should provide more opportunity to encode more information. Moreover, interacting groups recall more information than do individuals (Blumen & Rajaram, 2008), in part because group members' recall does not perfectly overlap; deliberation may make salient to one individual that which he or she had forgotten or overlooked initially, thereby broadening the base of information for all participants. On the other hand, this kind of social retrieval has been tied to memory deficits: When others voice their recalled information, it interferes with one's own retrieval process (Basden, Basden, Bryner, & Thomas, 1997; Coman, Manier, & Hirst, 2009). To the extent that participants within a given deliberative session organize Lightrail information differently in memory before deliberating, the collaborative voicing of that information may interfere with any given participant's normal retrieval processes, thereby disrupting or severing existing connections and driving down a given participant's total amount of recall. The analyses detailed below favor this latter expectation – that *deliberation* participants ought to suffer from “socially shared retrieval-induced forgetting” – as *deliberation* participants differ from those who do not deliberate in the amount of information recalled, the kind of information recalled, the distribution of recalled information across topics, and the extent to which participants are able to retain that information over time.

Total recall. Consider the number of items from the briefing booklets recalled in Sessions 2 and 3. A 2x3 mixed-model analysis of variance, in which Session (2 vs. 3) was repeated within-subjects and the experimental condition served as the between-subject factor, revealed a main effect of Session ($F(1,227) = 136.35, p < .001, \eta^2 = .38$) that was qualified by a Session x Condition interaction ($F(2,227) = 7.95, p < .001, \eta^2 = .07$); participants recalled fewer items in Session 3 than in Session 2, and the pattern of differences across conditions differed in the two Sessions. In Session 2, *deliberation* participants ($M = 10.26$) recalled significantly fewer pieces of information than did *elaboration* participants ($M = 11.51, B = 1.25, p = .03$).¹⁹ In Session 3, *deliberation* ($M = 8.85$) participants' recall was nonsignificantly greater than *argumentation* ($M = 8.66, B = -.19, p = .43$) or *elaboration* participants' ($M = 8.23, B = -.62, p = .22$), and the two non-deliberating conditions did not recall different amounts of information ($p = .46$).

Notice that in Session 2, *deliberation* participants recalled fewer items than did participants in the other two conditions, but that in Session 3 they recalled (nonsignificantly) more. That shift signals greater stability in the quantity of recall among *deliberation* participants. To assess whether the amount of information recalled in the two sessions was significantly more similar among those who deliberated, Session 3 recall was subtracted from Session 2 recall and divided by Session 2 recall to create a measure of the proportion of initial recall lost between Sessions 2 and 3 (higher scores reflect greater instability). Regressing the proportion of recall lost between

¹⁹ *Deliberation* and *argumentation* participants ($M = 10.68, p = .43$) did not recall significantly different amounts of information, nor did the two non-deliberating conditions ($p = .19$). Pooling the non-deliberative conditions and comparing them to the *deliberative* condition yielded a marginal effect: non-deliberating participants recalled an additional 4/5ths of a piece of information than did deliberating participants ($M = 11.06$ v. $10.26, B = -.80, p = .07$).

sessions on the two manipulation dummy codes (with cluster-robust standard errors) yielded significant differences among all conditions. Specifically, *deliberation* participants ($B = .0824$) lose a significantly smaller proportion of their initial recall (8.24%) than do *argumentation* (17.10%, $B = .0890$, $p = .04$) or *elaboration* participants (27.95%, $B = .1971$, $p < .001$); *argumentation* participants showed greater stability in total recall than did *elaboration* participants ($p < .01$).

Categories recalled. *Deliberation* participants recalled information from a greater number of categories than did participants who did not deliberate. Examining the manipulation's effect on the number of categories from the briefing booklets invoked during the recall task in Session 2 – with number of validly recalled items controlled – *deliberation* participants ($B = 4.80$) tended to recall items from roughly half an additional category relative to *elaboration* ($B = -.49$, $p = .01$) or *argumentation* participants ($B = -.53$, $p < .001$) [$F(15,156) = 10.12$, $p < .001$, $R^2 = .31$]. The differences fail to reach significance by Session 3 (*deliberation* $B = 4.11$; *elaboration* $B = -.19$, $p = .31$; *argumentation* $B = -.20$, $p = .21$), but they remain in the same direction and the two non-deliberative conditions underperform by the same margin as they did in Session 2.

Recall within and across categories. Examining the number of recalled items within each topic, *deliberation* participants recalled different kinds of information than did participants in other conditions (see Table 7). The number of items recalled within a given topic in Sessions 2 and 3 was separately regressed onto the dummy-coded manipulation and, in light of the difference in overall recall just detailed, total Session 2 recall. Cluster-robust standard errors were employed. In Session 2, a) *deliberation* (B

= 1.82) participants recalled significantly more items pertaining to who would be paying for the Lightrail than did *argumentation* participants ($B = -.47, p < .001$), b) *deliberation* participants ($B = 1.43$) recalled more items about environmental impact than did *elaboration* participants ($B = -.36, p = .01$), and c) *deliberation* participants ($B = 1.82$) recalled significantly fewer items about the Lightrail's impact on business²⁰ than did *argumentation* participants ($B = .31, p = .03$) and marginally fewer than did *elaboration* participants ($B = .28, p = .08$).

One week later, with Session 3 recall serving as a control, participant recall again differed as a function of condition. As before, *deliberation* participants ($B = 1.34$) recalled significantly more items pertaining to who would be paying for the Lightrail than did *argumentation* participants ($B = -.30, p = .05$), and *deliberation* participants ($B = 1.44$) recalled significantly less information about the Lightrail's impact on business than did *argumentation* participants ($B = .30, p = .03$). *Deliberation* participants' differentially heavy focus on environmental issues disappeared, replaced by a significantly greater recall for information about the impact on neighborhoods than seen among *argumentation* participants (*deliberation* $B = 1.20$; *argumentation* $B = -.31, p = .02$) but marginally less recall about neighborhood impact than among *elaboration* participants ($B = .23, p = .06$).

As a result of this pattern of differential recall, *deliberation* participants were more likely to remember equivalent amounts of information across all topics than were non-deliberating participants. By computing the standard deviation of the number of

²⁰ The "impact on business" finding is especially interesting, as each deliberative session started out with a confederate bringing up two pieces of information about the Lightrail's impact on business before asking to start the discussion by addressing this particular topic.

recalled items across topics for each participant, then regressing those scores onto the two manipulation dummy codes and using cluster-robust standard errors, it becomes clear that in Session 2 *deliberation* participants ($B = .94$) had significantly more similar recall across topics than did *argumentation* participants ($B = .14$, $p = .002$) and marginally more similar recall across topics than did *elaboration* participants ($B = .12$, $p = .08$). In Session 3, the pattern was weaker but consistent: *deliberation* participants ($B = .97$) had marginally more similar recall across topics than did *argumentation* participants ($B = .10$, $p = .06$) and comparable recall across topics relative to *elaboration* participants ($B = -.04$, $p = .56$). Deliberating, it seems, yields more equivalent consideration of all information presented than do non-deliberative approaches.

The manipulation was associated with consistent and significant differences in participant recall. Deliberating led to less overall recall initially, to greater stability in the quantity of information recalled, to differential (and at times, diminished) focus on some information topics, and to more consistent recall across topics. In short, deliberation led to a more balanced and stable memory for Lightrail information.

Summary: comparing conditions. Participants assigned to different conditions were exposed to the same set of information but walked away with subjectively different impressions of and objectively different knowledge about the Lightrail. Individuals who were asked to deliberate went through a process that left them feeling less well informed about the Lightrail. And although *deliberation* participants recalled significantly less information at Session 2 than did some non-deliberating participants, they recalled information more evenly across topics and recalled more similar quantities

of information in Sessions 2 and 3 than did non-deliberating participants. Despite these differences, the manipulation did not yield appreciable differences in the content or structure of participants' attitudes about the Lightrail.

The impact on participants' memory suggests that deliberating may yield greater and more stable intra-attitudinal complexity after all. *Deliberation* participants recalled information across topics in a more balanced fashion than did participants who did not deliberate, possibly laying the groundwork for the formation of more complex attitudes towards the Lightrail. *Deliberation* participants also demonstrated more stable recall – at least in terms of quantity – between Sessions, suggesting that they may also hold an advantage in terms of maintaining complexity over time.

Manipulation check summary. A series of manipulation checks demonstrated that participants did not differ in *a priori* characteristics across conditions, that deliberation was successfully operationalized within a laboratory setting, that participants were sufficiently engaged with the task that the procedural distinctions between conditions ought not to have been lost on them, and that the deliberative and non-deliberative conditions had differential impact on participants' memory of information about (but not attitudes toward) the Lightrail. Moreover, the complexity measures employed for the main analyses in Chapters 4 and 5 were demonstrably distinct from one another. The demonstration of deliberation's successful induction and of the differences across conditions is critical before comparing their impact on intra-attitudinal complexity. It is more important to the extent that those comparisons yield nonsignificant or ambiguous results. In light of the analyses detailed in this chapter, a lack of differences in intra-attitudinal complexity across conditions ought to be

interpreted as evidence that deliberation is not unique in its ability to induce and maintain complexity rather than as evidence that meaningfully different environments were not created. In Chapter 4, deliberation's capacity to induce (differentially greater) intra-attitudinal complexity is addressed in earnest.

Chapter 4: Complexity Induction

Extant research has made plain deliberation's capacity to affect participants' attitudes (Farrar et al., 2006; Fishkin, 1991; Luskin, et al., 2002). As yet unaddressed is deliberation's ability to induce intra-attitudinal complexity. This chapter investigates whether deliberation can induce five kinds of intra-attitudinal complexity, the extent to which it is unique in its ability to do so, and whether that uniqueness is contingent upon who deliberates. Finally, the processes by which intra-attitudinal complexity is induced are addressed.

Intra-Attitudinal Complexity in Session 2

Analysis strategy. Multiple linear regression analyses for each of the five measures of complexity were used to compare the intra-attitudinal complexity of individuals in each condition. Experimental condition was represented by two dummy codes (one for each non-deliberation condition); the *deliberation* condition served as the reference condition. Accordingly, the constant in the regression equation indicates the mean for the *deliberation* condition and the unstandardized regression coefficient for each dummy-coded condition reflects the difference between the mean for that condition and the mean for *deliberation*; positive coefficients indicate that the non-deliberative condition under consideration has a larger or more positive mean than the *deliberation* condition. The *p*-value associated with the dummy code indicates whether the mean of that condition differs significantly from the mean of the *deliberation* condition. Results are reported as follows: The *deliberation* condition mean (the constant in the regression equation) is reported, as are the unstandardized regression coefficients for each non-deliberation condition and their *p*-values. In rare occasions,

for the sake of clarity, a condition other than *deliberation* serves as the reference condition. Those situations are clearly indicated, and the rules for calculating the non-reference condition means and interpreting differences across conditions just detailed apply.

To control for individual-level factors that might yield complexity, participants' mean-centered Need for Cognition, Need for Closure, Preference for Consistency, normative deliberative beliefs, personal deliberative beliefs, and political knowledge served as covariates in all analyses. Moreover, the interactions between the dummy-coded manipulation and the motivational indices (Need for Closure, Need for Cognition, Preference for Consistency) were included in all analyses to examine their impact at different levels of the manipulation (e.g., Need for Cognition increases attitudinal ambivalence only among participants in non-deliberation conditions). The main effect of the control variables indicates their effect on *deliberation* participants' complexity scores; the interaction between each motivational index and a given manipulation dummy variable indicates the difference between that index's effect among the implicated dummy-coded group and its effect on the deliberation group. A significant interaction term indicates that the motivational index works differently in the condition implicated by the interaction term than in the *deliberation* condition.

Because individuals in the *deliberation* condition participated in a joint activity, their responses are not independent from those provided by individuals within the same discussion group. Accordingly, all participants within a given deliberation session were assigned the same code on the variable, "group." Individuals in the *argumentation* and *elaboration* conditions examined materials individually, and so received a unique

identifying code. In all regression analyses, cluster-robust standard errors – with “group” acting as the clustering factor – were employed to account for non-independence in the *deliberation* condition. The adjustment yields larger standard errors and a more conservative assessment of deliberation’s effect on complexity.

Where clarity demands, regression analyses are supplemented by one-sample and paired t-tests. Table 8 contains unadjusted Session 2 and Session 3 outcome measure descriptive statistics; Tables 9-13 contains the regression coefficients for each Session 2 outcome.

Results.

Attitudinal ambivalence. Overall, a moderate degree of attitudinal ambivalence was induced²¹ (Scott $M = .10$, $SD = .07$; Thompson $M = .40$, $SD = .06$); the average attitudinal ambivalence in each condition differed significantly from zero [using the Scott formula: *deliberation* $M = .09$, $t(135) = 17.55$, $p < .001$; *elaboration* $M = .11$, $t(48) = 10.57$, $p < .001$; *argumentation* $M = .12$, $t(53) = 12.63$, $p < .001$].

Contrary to expectations, participants in the *deliberation* condition ($B = .39$) held significantly less attitudinally ambivalent evaluations of the Lightrail than did participants in the *argumentation* condition ($B = .02$, $p = .03$); *deliberation* and

²¹ Because the Scott and Thompson models of attitudinal ambivalence are highly correlated at both Session 2 ($r = .96$) and Session 3 ($r = .95$), each is used when its strengths suggest it is the more appropriate measure. The Scott formula has a fixed minimum of zero, and so is used for one-sample t-tests assessing whether a significant degree of attitudinal ambivalence has been generated. However, because the Scott formula is a positively accelerating function it reduces the range of scores at low levels of ambivalence. The Thompson formula is linear and so does not; it is therefore used in the regression equations detailed above. The concern with the Thompson formula is that it assumes that there is more ambivalence, at a given value of the weaker valence, to the extent that the stronger valence is less extreme. If the weaker value is zero, this convention does not make sense – there should be no ambivalence if the weaker value is at its minimum; if the three conditions differed significantly in the strength of the stronger valence, it could bias the main analyses. One way ANOVAs indicate that whether the positive [$F(2,128) = 1.28$, $p = .28$] or negative [$F(2,83) = .06$, $p = .95$] valence is stronger, the conditions do not differ in the magnitude of the stronger valence.

elaboration condition participants did not hold differentially attitudinally ambivalent attitudes ($B = .01, p = .26$) [$F(14,155) = 1.80, p = .04, R^2 = .07$].

Dialectical and elaborative complexity. Participants demonstrated a moderate degree of integrative complexity. The average Session 2 dialectical ($M = 2.74, SD = 1.13$) complexity score fell between 2 and 3; almost two in five (38.8%) explicitly addressed at least one argument for and against the Lightrail (dialectical complexity = 3) and fewer than 1 in 5 essays (18.3%) failed to acknowledge the existence of more than one point view (dialectical complexity = 1). The concentration of scores between 2.0 and 3.0 indicates that the average participant was able to acknowledge that one could have more than one point of view, even if he or she did not fully articulate an argument for each side.

Elaborative complexity scores also hovered between 2 and 3 ($M = 2.83, SD = 0.72$), with more than three quarters (77.5%) providing at least two arguments on at least one side of the debate (elaborative complexity = 3) and fewer than 1 in 10 (9.2%) giving, at most, one reason for one or both sides of the argument (elaborative complexity = 1). In each condition, the average participant showed significantly more dialectical and elaborative complexity than the minimum possible value (1) [dialectical complexity: *deliberation* $t(135) = 17.64, p < .001$, *elaboration* $t(48) = 12.52, p < .001$, *argumentation* $t(54) = 10.63, p < .001$; elaborative complexity *deliberation* $t(135) = 29.37, p < .001$, *elaboration* $t(48) = 21.91, p < .001$, *argumentation* $t(54) = 16.43, p < .001$]. In no condition did dialectical and elaborative complexity differ from one another: *deliberation* ($t(135) = -1.53, p = .94$), *elaboration* ($t(48) = 0.68, p = .50$), *argumentation* ($t(54) = -0.52, p = 0.30$). In short, the average participant was able to

fully articulate (in nearly all cases) at least two reasons to support at least one – but more often, two – sides in the debate over the Lightrail.

Contrary to the expectation that *deliberation* would yield greater dialectical complexity, *deliberation* participants ($B = 2.63$) crafted essays that merited marginally lower dialectical complexity scores than those produced by participants in the *elaboration* condition ($B = 0.39$; $p = .06$); *deliberation* and *argumentation* condition essays did not differ ($B = 0.14$, $p = .47$) [$F(14,156) = 1.69$, $p = 0.06$, $R^2 = .07$].

Participants in the three conditions wrote essays that merited comparable elaborative complexity scores [*deliberation* $B = 2.79$; *elaboration* $B = 0.06$, $p = .59$, *argumentation* $B = 0.09$, $p = .48$; $F(14,156) = 0.89$, $p = 0.57$, $R^2 = .04$].

Content- and valence-based recall. An adjusted ratio of clustering score of 0 indicates chance agreement, a score of 1 perfect clustering. Participants' content-based recall scores were modest [$M = 0.19$, $SD = 0.31$], but participants in each condition demonstrated significantly more content-based recall than expected by chance [*deliberation* $M = .20$, $t(133) = 7.15$, $p < .001$; *elaboration* $M = .21$, $t(48) = 4.98$, $p < .001$; *argumentation* $M = .15$, $t(54) = 3.52$, $p < .001$]. Participants' valence-based recall scores were also modest [$M = 0.08$, $SD = 0.36$]; *deliberation* participants ($M = .03$) showed chance levels ($t(133) = 1.16$, $p = .12$) of valence-clustering whereas *elaboration* ($M = .14$, $t(48) = 2.45$, $p = .009$) and *argumentation* ($M = .13$, $t(54) = 2.81$, $p = .003$) showed significantly more valence-based recall than would be expected by chance.

There was no difference between the content-based recall of *deliberation* participants ($B = .20$) and *elaboration* ($B = .03$, $p = .57$) or *argumentation* participants ($B = -.06$, $p = .25$) [$F(14,156) = 1.88$, $p = 0.03$, $R^2 = 0.08$]. However, *deliberation*

participants ($B = 0.04$) showed significantly less valence-clustering than did *elaboration* participants ($B = .13, p = .04$); *deliberation* and *argumentation* participants did not differ ($B = .08, p = .13$) [$F(14,156) = 1.06, p = 0.40, R^2 = 0.06$]. As a result, *deliberation* participants' recall was significantly more organized by content than by valence, ($t(133) = 4.96, p < .001$) whereas content and valence clustering scores did not differ among *elaboration* or *argumentation* participants ($t(48) = 1.02, p = .16$; $t(54) = 0.24, p = .40$, respectively).

Session 2 complexity summary. For all operationalizations of complexity, across each of the three levels of the manipulation, the degree of complexity induced was small to moderate. That notwithstanding, and contrary to expectations, *deliberation* consistently led to comparable or lower levels of attitudinal complexity relative to other modes of information acquisition. Participants in the *deliberation* condition showed significantly lower levels of attitudinal ambivalence, marginally lower levels of dialectical complexity, and significantly less valence-based memory organization. This last finding is perhaps the most important. Because no condition showed considerable content-based recall, *deliberation* participants' significantly lower levels of valence-based recall suggests deliberating may preclude the formation of well-organized memories for the topic under consideration. That certainly fits with the discussion of socially shared retrieval-induced forgetting (Coman, et al., 2009) discussed in Chapter 3. However, because the memory organization test used here requires *a priori* specification of an organizational scheme, it cannot be concluded that *deliberation* precludes the formation of any organization in memory. Nonetheless, *deliberation* participants are less likely to organize Lightrail information by valence and no more

likely to organize it by content. This lack of apparent organization may affect those participants' ability to maintain complexity over time (see Chapter 5).

Elites' and Novices' Intra-Attitudinal Complexity in Session 2

As noted in Chapter 1, there are reasons to believe that deliberation may operate most effectively among those most prepared for the task. However, deliberating may also help those *least* ready for effortful consideration of policy information by providing them with a strong situation in which doing so is socially approved, normative, and structurally facilitated. The limited number of interactions between the manipulation and the motivational indices that arose in Session 2 analyses (see Tables 9-13) suggests that neither prediction ought to emerge: At least in this sample, discussing this topic, the difference between “elites” and “novices” may be minimal.

However, many of the motivational indices used in the Session 2 induction analyses assess similar constructs – comfort with ambiguity and readiness for deliberation – and may have drowned each other out. Accordingly, two “deliberation readiness” variates – “Dispositional Openness” and “Deliberative Inclination” – were created to examine the effect of the manipulation among those who score in the top (“elites”) and bottom (“novices”) third of each scale. By comparing the manipulation’s impact on individuals most likely prepared for such an exercise to its impact among those least prepared, the requisite conditions for successful, complexity-inducing deliberation can be better specified. Examination of the manipulation’s impact among elites and novices confirmed suspicions that the role of “deliberation readiness” in intra-attitudinal complexity induction would be minimal.

Method.

Scale Construction. Individual difference scales, collected in Session 1, were transformed to z-scores and entered into an exploratory factor analysis with principal axis factoring and direct oblimin rotation ($\delta = 0$). The analysis yielded two independent factors ($r = -.13$): Dispositional Openness and Deliberative Inclination. The first, Dispositional Openness, accounted for 30.5% of the total variance and was composed of the Need for Closure ($r = .88$) and Preference for Consistency ($r = .70$) scales. The second factor, Deliberative Inclination, accounted for 24.4% of the variance and was composed of the Personal Deliberative Beliefs ($r = .68$), Normative Deliberative Beliefs ($r = .60$), and Need for Cognition ($r = .53$) scales. No other scale loaded above .26 on either of the two factors.

Participants' standardized Need for Closure and Preference for Consistency scale scores were averaged and then multiplied by negative one (-1) to form the Dispositional Openness scale; higher scores indicate greater ability to tolerate complicated, messy, and inconsistent sets of information ($M = .00$, $SD = .89$). Participants' standardized Personal Deliberative Belief, Normative Deliberative Belief, and Need for Cognition scale scores were averaged to create the Deliberative Inclination scale; higher scores reflect greater willingness and ability to listen to opposing viewpoints and think critically about their merit ($M = .00$, $SD = .74$).

Participant Selection and Analysis Strategy. To create "elite" and "novice" populations, participants who scored in the top and bottom third of a given scale were retained. Thus, two sets of elite and novice subsamples were created, one for each variate. "Elites" and "novices" held significantly different scores on both the Dispositional Openness [elite $n = 85$, $M = .99$, $SD = .60$; novice $n = 85$, $M = -.90$, $SD =$

.45; $t(157) = -23.23, p < .001$] and Deliberative Inclination scales [elite $n = 84, M = .80, SD = .34$; novice $n = 85, M = -.82, SD = .39$; $t(167) = -29.06, p < .001$].²²

The five Session 2 outcomes served as dependent measures and were regressed onto the two manipulation dummy codes, the scale on which the sample is not split (e.g., elite v. novice Dispositional Openness analyses include Deliberative Inclination as a predictor), as well as their interaction. As before, cluster-robust standard errors were employed.

If deliberation is similar to traditional political discourse, in that those with more background or preparation more facily engage in the practice, and if deliberation can induce complex representations of attitude objects, deliberation ought to yield more complexity than other means of information acquisition among elites. Among novices, one might expect either a lack of distinction between levels of the independent variable or, to use a matching hypothesis, greater complexity among non-deliberators than among deliberators. Given the difficulty of inducing attitudinal complexity demonstrated above, the former hypothesis is anticipated: Among elites, deliberation should yield more complex representations than other means, but no differences should emerge among novices.

Results.

Dispositional openness. The effect of the manipulation was not much different among Dispositional Openness “elites” and “novices” (see Tables 14-18). Rarely did the manipulation affect levels of intra-attitudinal complexity, but when it did,

²² Selecting participants who fell in the top versus bottom third of *both* scales depleted the total sample size by roughly two-thirds (elite $n = 27$, novice $n = 34$) and violated the distinction between the factors demonstrated by the factor analysis detailed above.

deliberation participants tended to show lower levels. Among elites, only dialectical complexity was affected by the manipulation: *Deliberation* participants ($B = 2.60$) demonstrated marginally less dialectical complexity than did *argumentation* participants ($B = .69, p = .06$) [$F(5,72) = 3.59, p < .01, R^2 = 0.16$]. Among novices, only valence-based recall was affected by the manipulation: *Elaboration* participants ($B = 0.33$) demonstrated significantly greater valence-based recall than did *deliberation* ($B = -.25, p < .01$) and *argumentation* ($B = -.23, p = .03$) participants [$F(5,71) = 5.11, p < .01, R^2 = 0.13$].

Deliberative inclination. The effect of the manipulation was not much different among Deliberative Inclination “elites” and “novices” (see Tables 19-23). Rarely did the manipulation affect levels of intra-attitudinal complexity, but when it did, *deliberation* participants tended to show lower levels. Among elites *deliberation* participants ($B = .02$) manifested significantly less valence-based recall than did *argumentation* participants ($B = .20, p = .01$). Among novices, *deliberation* participants ($B = 2.53$) showed significantly less dialectical complexity than did *elaboration* participants ($B = .67, p = .05$) [$F(5,60) = 2.76, p = .03, R^2 = 0.15$].

Summary: elites and novices. In the general sample, the manipulation did not yield differential outcomes as consistently as expected. Examining the process among those ostensibly most and least likely to profit from deliberating, thereby stacking the odds in favor of the manipulation, did not provide more consistent or coherent results. Although the results from the general and two “readiness” samples were sporadic, there was a clear trend: Deliberating does not confer an advantage in the induction of complexity and can even hinder those processes.

The sporadic efficacy of the manipulation is particularly troubling in light of the manipulation's impact on participants' memory (see above). The manipulation clearly had an impact on what participants knew about the Lightrail: *Deliberation* participants recalled less (and topically different) information but in a more even pattern across topics. It is unclear why the manipulation did not have a more substantial or consistent impact on intra-attitudinal complexity. To better understand the disconnect between the manipulation and complexity induction, two plausible processes by which complexity ought to be induced were examined: effortful consideration of the material (elaboration) and the experience of feeling torn between alternatives (felt ambivalence). Below, the (largely non-significant) main effect of the manipulation on complexity in Session 2 is unpacked by examining the role these two processes played in mediating the induction of intra-attitudinal complexity.

Induction Processes

To better understand why the manipulation yielded differential outcomes sporadically, why small to moderate levels of each complexity measure were induced, and how subsequent researchers ought to approach the deliberation-complexity relationship, each step of the complexity induction process was examined to determine where the breakdown occurred. The manipulation could have failed to induce differential degrees of complexity for several reasons. First, the manipulation could be unrelated to the mediators or invoke such low levels of the mediators as to preclude a significant main effect regardless of the mediators' relationship with the outcomes. That disconnect would call for a reconsideration of the operationalization of the manipulation and/or the mediators. Alternatively, the proposed mediators might be

unrelated to the complexity outcomes, precluding induction regardless of the manipulation's impact on the mediators. In that case, a reconsideration of the theoretical processes by which complexity is induced would be in order.

Because of the absence of significant main effects for several outcomes, a full examination of the double mediational process is not appropriate. Instead, the process model is examined in three steps, working from manipulation towards outcomes. First, the extent to which the manipulation leads to differential levels of the potential mediators is addressed. Second, ignoring condition, the extent to which the proposed mediators are related to the five complexity measures is taken up. Finally, to highlight where deliberative theorists and practitioners can and should focus their effort in subsequent iterations of deliberative exercises, the mediator-outcome relationships at each level of the manipulation are considered.

From manipulation to mediators. Chapter 1 outlined why deliberation ought to induce complexity: *Deliberation* participants ought to have had greater motivation and ability to engage with the complex set of information provided than did participants in non-deliberative conditions. However, the preliminary analyses detailed in Chapter 3 indicated that *deliberation* participants recalled less information than did non-deliberators, suggesting that they will underperform on the memory-based measure of elaboration employed here.

The impact of the manipulation on felt ambivalence is also unclear. On the one hand, beyond the psychological discomfort that comes with privately considering counterattitudinal information, being forced to do so publicly, for 30 minutes, while engaging with confederates who are trained to push for substantive reasons underlying

preferences, should lead to differentially high levels of felt ambivalence among *deliberation* participants. On the other, the deliberative sessions were designed to minimize felt ambivalence, creating a safe space in which participants could deliberate; the moderator's prompts were non-confrontational, the confederates were noticeably open to both sides of the argument, and participants were told that the state legislature was interested in what participants both liked and disliked. Insofar as these accommodations fell short, *deliberation* participants ought to show elevated levels of felt ambivalence relative to non-deliberating participants.

Results. Felt ambivalence and elaboration in Session 2 were separately regressed onto the two manipulation dummy codes; cluster-robust standard errors were employed. Levels of felt ambivalence (all $ps > .34$) and elaboration (all $ps > .25$) were unaffected by the manipulation.

Restricting the analyses to participants who fell in the top- and bottom-third of the two "expertise" variates – Dispositional Openness and Deliberative Inclination – did not affect the results. Among Dispositional Openness elites, the manipulation did not affect felt ambivalence (all $ps > .58$) or elaboration (all $ps > .32$); the same was true of Deliberative Inclination elites (felt ambivalence, all $ps > .48$; elaboration, all $ps > .30$). Among Dispositional Openness novices, the manipulation did not affect felt ambivalence (all $ps > .10$) or elaboration (all $ps > .60$); the same was true of Deliberative Inclination novices (felt ambivalence, all $ps > .75$; elaboration, all $ps > .13$). In short, the manipulation did not lead to differential levels of either potential mediator.

That is not to say, however, that neither felt ambivalence nor elaboration was induced in each condition. One-sample *t*-tests comparing the felt ambivalence and elaboration to target scores within each condition indicate that some felt ambivalence and considerable elaboration were generated. Comparing participants' felt ambivalence score to the scale's midpoint (0) indicated that small but statistically significant amounts of felt ambivalence were generated among *deliberation* ($M = .58, SD = 2.94, t(135) = 2.30, p = .01$), *elaboration* ($M = 1.03, SD = 2.75, t(48) = 2.62, p = .006$) and *argumentation* participants ($M = .66, SD = 2.82, t(54) = 1.74, p = .04$). In that scores could range from -5 to +5 (strong rejection of felt ambivalence to strong endorsement of felt ambivalence), the relative size of the standard deviations, and the small means, the one-sample *t*-tests suggest that despite considerable variation within conditions, the average participant felt at least somewhat ambivalent in all conditions.

By contrast, considerable elaboration was generated in each condition. One-sample *t*-tests within each condition – using a target value of 0.5, or half of all possible elaboration that could be induced – indicated considerable levels of elaboration were generated among *deliberation* ($M = .61, SD = .10, t(133) = 12.64, p < .001$), *elaboration* ($M = .62, SD = .10, t(48) = 8.42, p < .001$) and *argumentation* participants ($M = .60, SD = .11, t(54) = 6.85, p < .001$). Participants in each condition showed significantly more than half of the elaboration possible.

From mediators to complexity.

Mediators predicting complexity, ignoring condition. Each complexity measure from Session 2 was regressed onto centered versions of the two mediators and their interaction to assess whether the effect of the two constructs is additive or

interactive (e.g., complexity is only possible with the right combination of the two mediators, like low felt ambivalence and high elaboration). Cluster-robust standard errors were employed. Regression weights are depicted in Table 24.

Counter to expectations, felt ambivalence tended to facilitate complexity induction. Specifically, felt ambivalence was significantly related to attitudinal ambivalence ($B = .01, p < .001; F(3,155) = 6.64, p < .001, R^2 = .10$) and dialectical complexity ($B = .14, p < .001; F(3,156) = 10.79, p < .001, R^2 = .12$), and marginally related to elaborative complexity ($B = .03, p = .08; F(3,156) = 1.27, p = .28, R^2 = .02$). Elaboration was not significantly related to the outcome measures; there was a marginal relationship with attitudinal ambivalence ($B = .05, p = .10$). The interaction between felt ambivalence and elaboration did not reach trend levels for any outcome.

Mediators predicting complexity, within condition. To better understand the processes by which deliberation might induce intra-attitudinal complexity, the analyses just described were rerun separately within each level of the manipulation. Results from the *deliberation* condition are highlighted and suggest that for those who deliberate, the two mediators neither work at cross purposes nor interact but rather that each mediator affects a specific type of complexity (breadth versus depth). *Elaboration* and *argumentation* condition analyses are reported as footnotes for comparison.

Attitudinal ambivalence, in the general sample, was predicted by both felt ambivalence and elaboration. Among *deliberation* participants' attitudinal ambivalence

was predicted by felt ambivalence ($B = .007, p < .001$) but not elaboration ($B = .007, p = .86$) [$F(3,52) = 6.00, p = .001, R^2 = .14$].²³

Dialectical complexity was predicted by felt ambivalence but not elaboration in both the general sample and among *deliberation* participants (felt ambivalence $B = .11, p = .003$; elaboration $B = .28, p = .73$) [$F(3,52) = 3.79, p = .02, R^2 = .09$].²⁴ Elaborative complexity – in the general sample – was only marginally related to felt ambivalence and unrelated to elaboration. Among *deliberation* participants, elaborative complexity was unrelated to felt ambivalence ($B = .02, p = .35$) but significantly related to elaboration ($B = 1.40, p = .05$) [$F(3,52) = 2.88, p = .05, R^2 = .05$].²⁵

Content-based recall was not affected by participants' felt ambivalence or elaboration in the general sample or among *deliberation* participants (felt ambivalence $B = -.002, p = .85$; elaboration $B = -.02, p = .94$) [$F(3,52) = 0.26, p = .85, R^2 = .01$].²⁶

Valence-based recall, in the general sample, was not affected by participants' felt ambivalence or elaboration. Among *deliberation* participants, valence-based recall was

²³ Among *elaboration* participants, attitudinal ambivalence was marginally related to elaboration ($B = .13, p = .08$) but not felt ambivalence ($B = .004, p = .13$); among *argumentation* participants, attitudinal ambivalence was not related to felt ambivalence ($B = .003, p = .22$) or elaboration ($B = .09, p = .17$).

²⁴ Dialectical complexity was also a function of felt ambivalence but not elaboration among *argumentation* participants (felt ambivalence $B = .23, p < .001$; elaboration $B = -1.49, p = .30$). Among *elaboration* participants, felt ambivalence unrelated to both moderators (felt ambivalence $B = .10, p = .11$; elaboration $B = .154, p = .41$).

²⁵ Among *elaboration* participants, elaborative complexity was unrelated to felt ambivalence ($B = .03, p = .23$) and elaboration ($B = -1.12, p = .15$). Among *argumentation* participants, elaborative complexity was unrelated to felt ambivalence ($B = .06, p = .18$) but significantly negatively related to elaboration ($B = -1.68, p = .05$).

²⁶ Among *elaboration* participants, content-based recall was marginally, negatively related to felt ambivalence ($B = -.03, p = .08$) but not related to elaboration ($B = -.07, p = .86$). Among *argumentation* participants, content-based recall was not related to felt ambivalence ($B = .008, p = .61$) or elaboration ($B = -.20, p = .62$).

unrelated to felt ambivalence ($B = .002, p = .84$) but significantly and positively related to elaboration ($B = .87, p = .005$) [$F(3,52) = 2.89, p = .04, R^2 = .07$].²⁷

Summary – complexity induction processes. The manipulation’s impact on two possible mediators, felt ambivalence and elaboration, as well as their influence on the five measures of complexity in Session 2, was explored. The manipulation itself was both a failure and a success. Although it did not induce differential levels of elaboration or felt ambivalence, a considerable amount of the former and moderate amounts of the latter were generated. The mediators, in turn, were related to some, but not all, of the outcomes. Ignoring condition, felt ambivalence was significantly related to attitudinal ambivalence and dialectical complexity, as well as marginally related to elaborative complexity. Elaboration was only associated with one outcome – elaborative complexity – and then only marginally.

Examining *deliberation* participants on their own revealed a clearer picture of the mediators’ roles. Conceptually, the outcome measures fall into two camps: those that require a distinction between sides of an argument (attitudinal ambivalence, dialectical complexity) and those that do not (elaborative complexity, content-based recall, valence-based recall). The analyses detailed above suggest that rather than act additively or interact with one another, the two mediators target one of the types of complexity but not the other. Where distinctions across sides of an argument matter, felt ambivalence drives complexity. Where that distinction is unimportant, elaboration dictates complexity. Interestingly, rather than acting as a deterrent to complexity, when

²⁷ Among *elaboration* participants, valence-based recall was unrelated to felt ambivalence ($B = -.02, p = .38$) but significantly and negatively related to elaboration ($B = -1.26, p = .02$). Among *argumentation* participants, valence-based recall was not related to felt ambivalence ($B = .005, p = .72$) or elaboration ($B = -.57, p = .15$).

significant, felt ambivalence was *positively* associated with complexity induction. It is possible that the topic, although personally relevant, was not sufficiently exciting for participants to feel that they had any real “skin in the game.” In this way, felt ambivalence acted more like a manipulation check, evidence that participants were emotionally invested enough to actually “feel” both sides of the discussion but not torn by the opposing arguments. Perhaps, then, a moderate amount of felt ambivalence is required for complexity, but too much precludes its induction.

Summary - complexity induction. The analyses above addressed three critical questions regarding complexity induction. First, the extent to which deliberation differentially induces complexity. Second, whether it does so for some individuals but not others. Third, the processes by information acquisition strategies – and deliberating in particular – induce complexity. Analysis of intra-attitudinal complexity measures collected in Session 2 indicated that the answer to the first is “little to none.” Worse for deliberative theorists, cases in which deliberation was exceptional yielded lower levels of intra-attitudinal complexity. This lack of impact is not the result of “qualified” participants being drowned out by their less deliberation-ready brethren, but rather of an inability of the manipulation to induce differential levels of elaboration and felt ambivalence. In short, and at best, deliberating yields intra-attitudinal complexity in comparable measure to non-deliberative alternatives.

Equivalent complexity does not, however, mean that no complexity was instilled. In fact, small to moderate levels of complexity were established within each condition. To the extent that deliberative democracies require citizens to hold nuanced representations of issues – the better to facilitate meaningful deliberation – deliberation

is not wholly without merit. Moreover, complexity induction is not the whole story; it is important to both create *and to maintain* attitude complexity. Deliberating may not yield significantly more nuanced attitudes, but if it evokes a more effortful engagement as proponents believe, it may lead to greater persistence of the complexity that was established. A central tenet of the HLM (Petty & Cacioppo, 1986; Petty et al., 1995; Petty & Wegener, 1999), borne out by subsequent research (Cacioppo, Petty, Kao, & Rodriguez, 1986; Fabrigar, et al., 2006; Haugtvedt & Petty, 1992), is that attitudes formed or altered through greater elaboration should be more persistent over time. If attitude complexity functions like attitude valence – such that greater effort expended during attitude formation (Petty & Cacioppo, 1986) and greater organization of attitude-relevant information (Eagly & Chaiken, 1995) render the attitude's structure more stable as they do its valence – then attitudinal complexity should be more likely to persist if is forged through more effortful engagement like deliberation. Chapter 5 examines whether the persistence of participants' attitude complexity varies as a function of the manipulation.

Chapter 5: Complexity Maintenance

Three operationalizations of complexity maintenance are detailed below. In the first, Session 3 complexity scores are examined controlling for Session 2 scores, providing an unadulterated assessment of each condition's ability to induce complexity that persists. In the second and third, Session 2 and 3 scores are manipulated to create indices of complexity decay and stability.

As detailed in Chapter 4, deliberation failed to distinguish itself as better suited to induce inter-attitudinal complexity, even among those ostensibly most prepared to engage in the task. The reason for the manipulation's failure to induce different levels of complexity stems, in part, from its failure to instill differential levels of elaboration: Participants in each condition tended to recall a considerable number of pieces of information about the Lightrail from nearly all of the categories available.

The rationale for deliberation's ability to yield more stable intra-attitudinal complexity, too, rested in part on the process's ability to induce greater levels of elaboration, thereby yielding more objectively strong attitudes. In light of the manipulation-elaboration results detailed in Chapter 4, deliberation's differential ability to yield stable complexity must be called into question. Deliberation's other proposed advantage was its ability to yield more subjectively strong attitudes (more attitude certainty, perceived thoughtfulness, and perceived knowledge). But, as detailed in Chapter 3, *deliberation* participants were no more certain of their attitude and felt no more knowledgeable or thoughtful than did their non-deliberating counterparts. In that neither objective nor subjective measures of attitude strength favor *deliberation*

participants, it is not surprising that the analyses detailed below demonstrate equivalence across conditions in the ability to induce stable intra-attitudinal complexity.

Session 3

Analysis strategy. Analysis of Session 3 outcomes was identical to those conducted on Session 2 outcomes, except that participants' Session 2 score on the outcome measure in question was included as a predictor. Accordingly, the Session 3 analyses indicate whether the experimental condition differentially affects complexity at Session 3 over and above the impact of the complexity instilled in Session 2.

Session 3 scores were surprisingly unrelated to their Session 2 counterparts: zero-order correlations indicate that Session 2 scores account for between 0.1% and 13.7% of the variance in Session 3 scores (see Table 1). Thus, despite the inclusion of Session 2 controls in the analysis below, the overall R^2 of the models remains quite low.

Results.

Attitudinal ambivalence. One week after participants learned about the Lightrail, the Scott ($M = .10$, $SD = .07$) and Thompson ($M = .40$, $SD = .06$) measures of attitudinal ambivalence were small to modest. Nonetheless, as before, the average attitudinal ambivalence in each condition was significantly greater than zero [*deliberation*, $M = .09$, $SD = .06$, $t(135) = 17.55$, $p < .001$; *elaboration* $M = .11$, $SD = .07$, $t(48) = 10.57$, $p < .001$; *argumentation* $M = .12$, $SD = .07$, $t(53) = 12.63$, $p < .001$]²⁸.

²⁸ As with Session 2, the Scott formula for attitudinal ambivalence was used here because it forces a minimum value of zero. The Thompson formula is used to assess the manipulation's impact because of its greater sensitivity to differences among low scores.

Attitudinal ambivalence was not affected by experimental condition

[*deliberation* $B = .39$; *elaboration* $B = .002$, $p = .81$; *argumentation* $B = -.003$, $p = .79$; $F(15,152) = 4.51$, $p < .001$, $R^2 = .26$].

Dialectical and elaborative complexity. Integrative complexity scores in Session 3 were modest: the average dialectical ($M = 2.30$, $SD = 1.09$) and elaborative ($M = 2.69$, $SD = 0.87$) complexity scores indicate that the average participant was able to acknowledge that one could have more than one point of view (but did not necessarily fully articulate an argument for each side) and was able to hint at (if not fully articulate) at least two reasons to support at least one of those views. For all conditions, both dialectical and elaborative complexity scores were significantly greater than the minimum value of 1 (all $t_s > 7.87$, all $p_s < .001$).

The experimental manipulation did not affect dialectical complexity

[*deliberation* $B = 2.33$; *elaboration* $B = .003$, $p = .99$; *argumentation* $B = -.15$, $p = .43$; $F(15,153) = 2.25$, $p < .01$, $R^2 = .10$]. The manipulation was also unrelated to elaborative complexity [*deliberation* $B = 2.71$; *elaboration* $B = -.23$, $p = .13$; *argumentation* $B = .01$, $p = .97$; $F(15,153) = 1.87$, $p = .03$, $R^2 = .12$].

Content- and valence-based recall. Overall, participants generated modest content- and valence-based recall scores ($M = 0.20$, $SD = 0.39$; $M = 0.11$, $SD = 0.35$, respectively). Examining each condition separately, one-sample t -tests indicated that participants in the *deliberation* ($M = .16$, $t(129) = 5.16$, $p < .001$), *elaboration* ($M = .27$, $t(47) = 4.06$, $p < .001$), and *argumentation* conditions ($M = .26$, $t(52) = 4.62$, $p < .001$) demonstrated significantly more content clustering than expected by chance.

Participants in the *deliberation* ($M = .10$, $t(129) = 3.59$, $p < .001$) and *elaboration* ($M =$

.20, $t(46) = 3.44, p < .001$) conditions showed significantly more valence clustering than expected by chance; participants in the *argumentation* condition showed marginal-to-chance levels ($M = .06, t(52) = 1.29, p = .10$).

Consistent with Session 2 outcomes, *deliberation* participants ($t(129) = 1.54, p = .06$) showed more content- than valence-based recall. Also consistent with Session 2 outcomes, *elaboration* participants' content- and valence-clustering scores did not differ significantly ($t(46) = 0.64, p = .26$). *Argumentation* participants, who showed non-significantly different content- and valence-clustering at Session 2, showed significantly more content- than valence-clustering in Session 3 ($t(52) = 2.554, p = .006$).

Counter to expectations *deliberation* participants ($B = .17$) showed marginally less content-based recall than did *elaboration* participants ($B = .11, p = .10$) at Session 3; *deliberation* and *argumentation* participants ($B = .07, p = .30$) did not differ [$F(15,153) = 1.23, p = .25, R^2 = .06$]. Valence-based recall was unaffected by the manipulation [*deliberation* $B = .11$; *elaboration* $B = .08, p = .17$; *argumentation* $B = -.07, p = .28$; $F(15,152) = 1.12, p = .35, R^2 = .07$].

Session 3 summary. The relatively lower complexity scores seen among *deliberation* participants in Session 2 do not emerge in Session 3. In four outcomes, participants held comparably complex attitudes towards the Lightrail regardless of how they initially learned about the project; in the fifth, content-based recall, *deliberation* participants had marginally lower scores.

Directional and Absolute Change

Analysis strategy. Changes in complexity were measured in two ways: directional and absolute. Directional change for each measure was computed as the

difference between Session 2 and Session 3 scores (Session 2 – Session 3) and can be thought of as the extent of deterioration of complexity between the sessions. Absolute change was operationalized as the absolute value of the difference between participants' Session 2 and Session 3 scores on a given outcome and indicates the degree of variability in the complexity measure over time regardless of the direction of change.

Regression analyses were conducted in the same manner as those investigating complexity induction in Session 2: For each kind of complexity change, each of the five complexity measures was regressed onto two dummy codes representing the manipulation, the same set of individual difference measures, and their interactions with the dummy codes. As before, cluster-robust standard errors were employed. Descriptive statistics for each outcome, within each condition, for both kinds of change, are provided in Tables 25 and 26.

Directional change.

Attitudinal ambivalence. The Thompson measure of attitudinal ambivalence is scaled (roughly) 0 to 1; the directional change measure can therefore range between -1 and +1. The actual range of attitudinal ambivalence scores in Session 2 (.22 to .53) and Session 3 (.22 to .56) was far more narrow, making the possible range of directional change -.31 to +.34. In the current sample, attitudinal ambivalence directional change scores ranged from -0.16 to 0.26. Roughly one in three participants (34.9%) grew more attitudinally ambivalent over time, whereas about half (48.7%) became less attitudinally ambivalent.

Although some participants showed moderate change, most showed little or no change between sessions. Collapsing across conditions, attitudinal ambivalence scores

diminished minimally between Sessions 2 and 3 ($M = .01$, $SD = .059$). One-sample t -tests with a target value of zero indicated that a significant degree of directional change emerged only for *argumentation* participants ($t(51) = 2.07$, $p = .04$).

Directional change in attitudinal ambivalence did not differ by condition [$F(14,152) = 1.30$, $p = .21$, $R^2 = .06$]; *deliberation* participants ($B = .005$) lost nonsignificantly less attitudinal ambivalence than did *elaboration* ($B = .003$, $p = .77$) and *argumentation* participants ($B = .013$, $p = .23$).

Dialectical and elaborative complexity. Dialectical and elaborative complexity scores in the current sample ranged from 1 to 5, yielding a hypothetical range of -4 to 4 for each corresponding directional change measure. Actual directional change for dialectical complexity spanned this range (-4 to 4) and came close for elaborative complexity (-2 to 3). In the end, the average directional change was quite small [dialectical complexity $M = .43$, $SD = 1.39$; elaborative complexity $M = .14$, $SD = 1.01$]. Roughly one in three (29.9%) participants received the same dialectical complexity score at Sessions 2 and 3; 44.0% grew less dialectically complex. Over half (59.1%) of all participants received the same elaborative complexity score in Sessions 2 and 3; 22.8% grew less elaboratively complex. One-sample t -tests indicated that the directional change of dialectical complexity in each condition was significantly greater than zero (all $t > 2.65$, all $p \leq .01$). For elaborative complexity, only *elaboration* participants showed a significant amount of change ($t(47) = 2.23$, $p = .03$).

The manipulation did not significantly impact the extent to which participants' dialectical complexity changed between Sessions 2 and 3 [$F(14,153) = .93$, $p = .53$, $R^2 = .05$]; the decline in dialectical complexity of *deliberation* participants' essays ($B =$

.32) was nonsignificantly smaller than that seen among *elaboration* ($B = .29, p = .20$) or *argumentation* ($B = .24, p = .33$) participants' essays. Neither did the manipulation significantly affect the extent to which participants' elaborative complexity changed over time [$F(14,153) = 1.29, p = .22, R^2 = .07$]; *deliberation* participants' essays ($B = .10$) lost non-significantly less elaborative complexity than did *elaboration* ($B = .27, p = .13$) or *argumentation* ($B = .04, p = .84$) participants' essays.

Content- and valence-based recall. Clustering scores have no absolute zero point (a score of zero indicates chance clustering, not the absence of clustering), and so a hypothetical range is not possible to calculate. Content-based recall directional change scores ranged from -1.60 to +1.97; valence clustering change scores ranges from -1.82 to +1.64. Again, the average directional change was small for both content ($M = -.02, SD = .47$) and valence clustering ($M = -.03, SD = .49$). Roughly half of all participants showed an increase in content-based recall (50%), and a similar percentage showed a decline (48.3%). The pattern for valence-based recall was nearly identical; 51.1% of participants showed an increase in valence-based recall whereas just under half showed a decrease (47.6%). As the distribution of scores would suggest, one-sample t-tests confirmed that in no condition was the amount of directional change significantly different from zero (all $t > 1.43$, all $p > .15$); *argumentation* participants' content-based recall was marginally different than zero ($t(52) = -1.80, p = .08$).

The manipulation did not significantly affect changes in participants' content-based recall [$F(14,153) = 1.12, p = .35, R^2 = .04$]; *deliberation* ($B = .03$), *elaboration* ($B = -.08, p = .35$) and *argumentation* ($B = -.12, p = .14$) participants did not differ in the extent to which their content-based recall changed between Sessions 2 and 3, although

the *deliberation* mean was the only one to show an average decline over time. The manipulation was associated with marginally different degrees of change in valence clustering across conditions [$F(14,152) = 1.15, p = .32, R^2 = .07$]. *Deliberation* ($B = -.06$) and *argumentation* participants ($B = .16, p = .08$) demonstrated marginally different changes in valence-based recall, with the former showing an increase in valence-based recall and the latter showing a decline over the week. *Elaboration* participants ($B = .02, p = .83$) gained nonsignificantly less complexity across the sessions than did *deliberation* participants.

Absolute change.

Attitudinal ambivalence. The absolute change in attitudinal ambivalence ranged from 0 to .26; on average, participants' attitudinal ambivalence did not waver between Sessions 2 and 3 ($M = .04, SD = .04, 90^{th} \text{ percentile} = .11$). One-sample *t*-tests indicate that all conditions showed a significant degree of absolute change (all $t > 7.73$, all $p < .001$). Absolute change in attitudinal ambivalence did not differ by condition [$F(14,152) = 1.21, p = .27, R^2 = .06$]; *deliberation* participants ($B = .04$) showed nearly identical absolute change as *elaboration* ($B = -.001, p = .93$) and *argumentation* participants ($B = .001, p = .87$).

Dialectical and elaborative complexity. The absolute change in dialectical complexity ranged from 0 to 4 and from 0 to 3 for elaborative complexity. The average absolute change scores for dialectical ($M = 1.07, SD = .98$) and elaborative complexity ($M = .62, SD = .82$) suggest that participants wrote quantitatively – but not qualitatively – different letters in the two sessions: the bright-line distinctions in integrative complexity coding are marked by differences of 2 points. One-sample *t*-tests indicated

that, in all conditions, both dialectical and elaborative complexity showed significant amounts of absolute change (all $t_s > 5.81$, all $p_s < .001$).

Comparing the absolute change of participants' dialectical (and elaborative) complexity scores across conditions, deliberation emerges as a non-significant to marginal buffer against complexity change. The stability of participants' dialectical complexity did not vary as a function of experimental condition [$F(14,153) = 0.73, p = .75, R^2 = .04$]; *deliberation* participants ($B = 1.02$) showed non-significantly less absolute change than did *elaboration* ($B = .03, p = .88$) and *argumentation* participants ($B = .20, p = .28$). Running the comparative analysis with each level of the manipulation as the reference condition indicated that the absolute change in dialectical complexity was significantly greater than zero in each condition (*deliberation* $B = 1.02, p < .001$; *elaboration* $B = 1.05, p < .001$; *argumentation* $B = 1.22, p < .001$).

The stability of participants' elaborative complexity differed to some degree as a function of experimental condition [$F(14,153) = 0.81, p = .66, R^2 = .04$]; *deliberation* participants ($B = .52$) showed non-significantly less absolute change than did *elaboration* participants ($B = .19, p = .22$) and marginally less absolute change than did *argumentation* participants ($B = .28, p = .06$). Running the comparative analysis with each level of the manipulation as the reference condition indicated that the absolute change in elaborative complexity was significantly greater than zero in each condition (*deliberation* $B = .52, p < .001$; *elaboration* $B = .71, p < .001$; *argumentation* $B = .80, p < .001$).

Content- and valence-based recall. The average absolute change score for content ($M = .36, SD = .30$) and valence clustering ($M = .38, SD = .31$) was relatively

small; absolute change scores ranged from 0 to 1.97 (content) and 0 to 1.82 (valence).

One-sample *t*-tests indicated that the absolute change scores, in each condition, for both content- and valence-based recall differed significantly from zero (all *t*s > 7.59, all *p*s < .001).

The absolute change in content-based recall did not vary as a function of the manipulation [$F(14,153) = 1.01, p = .44, R^2 = .12$; *deliberation* $B = .34$; *elaboration* $B = .05, p = .33$; *argumentation* $B = .03, p = .61$]. Neither did absolute change in valence-based recall [$F(14,152) = 1.41, p = .16, R^2 = .09$; *deliberation* $B = .36$, *elaboration* $B = .04, p = .39$, *argumentation* $B = .05, p = .34$].

Discussion: complexity maintenance

Across three measures of stability, *deliberation* failed to set itself apart as differentially able to induce intra-attitudinal complexity that does not deteriorate over time. Examining Session 3 scores indicated that with the exception of a single trend-level result suggesting *deliberation*'s inferiority, the conditions did not differ in the amount of complexity they yielded one week after participants learned about the Lightrail. Examination of the directional and absolute change scores indicate that complexity scores were marginally smaller in Session 3 than in Session 2, but that the experimental manipulation was not influential in the extent to which participants' complexity scores varied across time. Almost without exception, the way in which an individual learned about the Lightrail project had no bearing on the stability of the complexity induced in Session 2. The two exceptions – both statistically marginal – suggest that deliberating might buffer against complexity loss: *Deliberation* participants showed moderately smaller directional change scores for valence-based recall and

marginally smaller absolute change scores for elaborative complexity, relative to *argumentation* participants. The former indicates a smaller decline in complexity over time, the latter a higher degree of pure stability (i.e., less movement in complexity, regardless of direction). Nonetheless, two marginal results do not constitute a reasonable degree of evidence that *deliberation* can act as a buffer against complexity loss. Coupled with its inability to yield differentially greater degrees of complexity at Session 2 (or Session 3), it appears that deliberation – at least as it has been operationalized here, with this sample, this topic, and within the relatively short period of deliberation – provides no advantage in the creation or maintenance of attitudinal complexity.

Chapter 6: General Discussion

American civil discourse suffers from the incivility of its rhetoric and citizens' inability to effortfully and neutrally engage with the information available to them. Deliberative democracy has been posited as a remedy for these shortcomings, as it ought to provide participants with the information, motivation, and time necessary to thoroughly consider all sides of a given issue and to identify policies that achieve a common good. The current study aimed to extend empirical assessment of deliberation's impact on participants' attitudes by examining whether the deliberative process could instill attitudes with greater complexity than would otherwise be expected. In this final chapter, the results of the investigation are reviewed and protocol changes for future replications are offered. Further, the appropriate operationalization of intra-attitudinal complexity is considered, and an approach more thoroughly rooted in attitude theory is proposed. The chapter concludes with a consideration of the practical implications for the use of deliberation and American civil discourse more generally.

Summary of Findings

Extant research on deliberation's impact on participant attitudes has focused on pre-post attitude comparisons highlighting the process's ability to alter attitudes as a function of knowledge gains (Farrar et al., 2006; Fishkin, 1991; Luskin, et al., 2002). Unaddressed to date is a deeper consideration of the attitudes created by deliberation. It is unclear whether deliberation yields attitudes that are more persistent, resistant, or predictive of behavior than one would expect from non-deliberative alternatives. Also left unaddressed is whether deliberation yields attitudes that are more complex, more nuanced. Given deliberation's focus on effortful consideration of multiple perspectives

and the identification of a common good, one might expect that deliberation would yield attitudes with greater complexity.

The preceding chapters addressed several of these questions by assessing the complexity of attitudes generated during and following a lab-based experiment; participants were exposed to information about a Lightrail proposal that would directly affect them and their college campus. Some participants processed the information on their own, others engaged in deliberation. Following deliberative democratic theorists' predictions, Petty and colleagues' Meta-Cognitive Model of attitudes (Petty et al., 2007), and Rudolph and Popp's (2007) model of attitudinal ambivalence, deliberation was predicted to yield greater induction and retention of intra-attitudinal complexity than would non-deliberative alternatives (**Hypotheses 1, 2, and 7**). Further, the manipulation's impact on intra-attitudinal complexity was hypothesized to be mediated by elaboration and felt ambivalence (**Hypothesis 4**), more pronounced in some measures of complexity (**Hypothesis 3**), and more evident among some groups of individuals than among others (**Hypotheses 5 and 6**).

By and large, those predictions were not supported by the data. Counter to expectations, deliberating did not yield more complex attitudes. In fact, immediately after learning about the Lightrail proposal, participants who deliberated held significantly less complex attitudes than did their non-deliberating peers (Hypotheses 1-2). Deliberating left participants less likely to acknowledge the existence of multiple sides of the issue, less likely to argue both for and against the Lightrail in an open-ended letter detailing their opinion of the project, and less likely to recall information as a function of its valence. Deliberation's inability to induce complexity was not a

function of some participants being unprepared for the task (Hypotheses 5-6), burying an otherwise robust effect. Even among individuals likely to be most capable of deliberating – those dispositionally high in their comfort with openness and ambiguity, or those who most frequently engage in deliberation-like behavior in normal settings – deliberation, at best, yielded comparably complex attitudes towards the Lightrail. For no measure of complexity, with no conceptualization of expertise, did deliberation yield more complex attitudes.

The manipulation's inability to induce differential levels of complexity stemmed in part from its failure to induce differential levels of the two mediators, elaboration and felt ambivalence (Hypothesis 4). The mediators, in turn, were only partially related to the outcome measures. In the overall sample, felt ambivalence was positively related to complexity whereas elaboration was unrelated to the outcomes. The pattern was more clear among *deliberation* participants. Contrary to expectations, however, this relationship was neither additive nor interactive. Instead, felt ambivalence and elaboration were positively correlated with qualitatively different kinds of complexity, the former with measures that distinguish between sides of an argument and the latter with those that do not. Finally, deliberation was no buffer against losses to the moderate amount of complexity established in all conditions (Hypothesis 7). Whether considering complexity one week after learning about the Lightrail, the decay in complexity, or pure stability over time, the stability of the intra-attitudinal complexity of the attitudes held by those who deliberated did not meaningfully differ from that among individuals who did not. If one is concerned about inducing and maintaining

complex attitudes, the set of analyses described here suggest that there is nothing to recommend the model of deliberation employed here as a superior method of doing so.

Modifications

If the findings just detailed were taken to accurately represent deliberation's ability to induce complexity, the implications for deliberative theory and practice would be dire: Attitudes can be changed, but deliberators fall far short of the prescriptive norms laid out by theorists. Of course, it would be unwise to generalize from a single study and foolish to dismiss so rich a theory as deliberative democracy on its account. Before discarding deliberation as a vehicle for the establishment of complex policy attitudes, several modifications to the procedure employed here ought to be undertaken and the establishment and maintenance of complexity re-examined.

First, a more formal operationalization of deliberation – one that involves discussion quality – needs to be employed. Preliminary analyses detailing the breadth of topics addressed during deliberation and the non-independence of deliberation members' responses (see Chapter 3) were used to establish the validity of the deliberative environment created, but a thorough coding and analysis of the actual discussions that occurred was not included in the study's design. Setting a threshold may help to distinguish deliberation from its alternatives by creating a cleaner manipulation of the distinction between true deliberation and "vocalized elaboration." Clear *a priori* criteria for what constitutes deliberation would boost the internal validity of the replication study, but such a tactic is not without complications. The first complication concerns the origin of those criteria. Given the plethora of iterations of deliberative democratic theory from which to choose (Mutz, 2008), it is unclear whether

empirical assessment of deliberation ought to operationalize a single theory or choose what appears to be “most deliberative” requirements from across multiple instantiations of the concept. At least one recent effort to specify the necessary conditions for discussion (Stromer-Galley, 2007) draws from a diverse set of deliberative theory and assessment, but theorists tend to bristle at the approach (e.g., Thompson, 2008). Choosing instead to develop requisite criteria from a single theory, however, draws researchers into a similar dilemma: By what metric does one choose the “most deliberative” *theory* from which to operationalize the requisite aspects of deliberation? The second dilemma one confronts, having settled upon a set of criteria necessary to establish “legitimate” deliberation, is the extent to which each criterion must be present. After empirical work on deliberation repeatedly failed to show deliberators as the idealized citizens theorists put forth in their normative accounts (Guttman, 2007; Karpowitz & Mansbridge, 2005; Polletta, 2008) theorists have begun to reconsider what deliberation does – and *ought to* – look like (Grimes, 2008; Mansbridge et al., 2006;). One possible solution would be to take an inductive approach, in which pilot groups are coded for a broad array of deliberation behaviors that are then used to predict theoretically-derived outcomes. Those aspects of the deliberations that best predict relevant outcomes are then retained and used as *a priori* selection criteria. In short, although it is not clear which aspects of deliberation are necessary or fundamental, or where the threshold for their presence should be placed, deliberation researchers are not relieved of their obligation to better understand the processes that turn discussion into deliberation. Rooting out failed or underperforming deliberations should be a component of any subsequent work on deliberation.

A second modification involves reoperationalizing – if not expanding the scope of – the proposed mediators: elaboration and felt ambivalence. Recall that the manipulation failed to affect the mediators. If this is a Type II error, it may stem from an insufficiently precise manipulation or from insufficiently sensitive measurement of the mediators. “Culling” deliberative sessions for failing to meet *a priori* criteria should remedy issues with the manipulation, but it should be paired with more refined and better-timed measurement of the mediators. First, future research should incorporate a broader measure of elaboration, one that more directly measures the extent to which individuals have thought through the information presented to them. The thought listing coding technique outlined by Cacioppo and Petty (1981) would serve as a nice supplement; participants provide a list of the thoughts they had while learning about a topic, after which trained coders assess the “origin” of the thoughts. In this scheme, “externally oriented thoughts” measure the number of items accurately recalled, whereas “modified externally oriented thoughts” measure the number of items on which the participant has elaborated and extended the information initially provided, evidence of real engagement and effort. A composite measure of elaboration that includes the number of recalled items, the breadth of that recall, and the extent to which participants go beyond the material provided may yield a more sensitive measure of the proposed mediator.

Measurement of felt ambivalence would also benefit from a change in timing and method. Recall that in Session 2, individuals who deliberated demonstrated significantly or marginally *less* intra-attitudinal complexity on three of five measures. One possible explanation is that deliberating instilled felt ambivalence, which

participants resolved within the deliberative session by seeking out additional information (e.g., Maio, Bell, & Esses, 1996) or by adopting the attitudes they perceived were being advocated by the majority of their fellow deliberators (e.g., Hodson et al., 2001). So as not to interrupt a deliberative session, felt ambivalence was measured at its conclusion; a complete assessment of the mediator's role throughout the process was not feasible. Interrupting deliberation to explicitly measure felt ambivalence is impractical, especially as researchers try to carve out "maximally deliberative" protocols. One alternative may be to employ a measure of skin conductance (e.g., Harmon-Jones, Brehm, Greenberg, Simon, & Nelson, 1996, Study 3). If participants who display spikes and then declines in arousal during deliberation subsequently demonstrate lower levels of intra-attitudinal complexity, researchers can focus their effort on encouraging elaboration but preventing felt ambivalence, perhaps by more thoroughly stressing the injunctive (and descriptive) norm of open-mindedness in the deliberative environment. If, by contrast, individuals who deliberate and those who do not demonstrate low and comparable levels of arousal, felt ambivalence might reasonably be removed from consideration as an antecedent to intra-attitudinal complexity and a threat to deliberation's ability to induce it.

A third change to the paradigm employed here – necessary before discarding deliberation as a vehicle for intra-attitudinal complexity induction – relates to the study design. Extant deliberation research has typically used a pre-post within-subjects design; here, a between-subjects design was employed. Replications of the research detailed here should merge the two approaches, thereby allowing better verification that the deliberative sessions created mirror those in the literature (pre-post comparison of

attitude valence, within condition) and, more important, to demonstrate that some degree of complexity was actually instilled in the participants. The one-way ANOVA design employed here can only detect differences across levels of the manipulation; the extent to which mean levels are the result of exposure to one of the three learning environments has to be inferred. Of course, the novelty of the current topic makes such inference easy – participants, naïve to the aspects of the policy, could not have held complex attitudes about the Lightrail before entering the study. That is not to say, however, that they could not have formed somewhat complex attitudes upon hearing that a Lightrail would soon travel through their campus. In subsequent comparative research, a baseline measurement of complexity ought to be obtained after participants are introduced to the topic but before being fully apprised of its merits and drawbacks.

Adjustments to the procedure are not the only modifications that would serve the empirical assessment of deliberative democratic theory well. Insofar as the complexity of participants' attitudes remains a worthy pursuit, it is worth considering how to best measure the construct. The three classes of complexity measures employed here were thought to represent increasingly difficult instantiations of the construct. If true, the measures would have been modestly but positively related. Instead, they were largely orthogonal (see Table 1). Moreover, evidence of the manipulation's impact on "more difficult" measures (e.g., content- and valence-based recall) would have necessitated an effect of the manipulation (or ceiling effect precluding one) on "easier" measures (e.g., attitudinal ambivalence). That was not always the case. In the Session 2 elite and novice analyses (Chapter 4), the manipulation affected the "difficult" outcomes without also affecting (or maximizing) the "easy" outcomes. In short, the measures were not

increasingly difficult instantiations of the same underlying construct, but rather wholly different concepts. Accordingly, researchers need to specifically address which operationalization is the “right” way to think about complexity.

The “Right” Complexity

If future deliberation research is to address intra-attitudinal complexity, researchers must first determine how best to measure the construct. The five measures selected here were chosen to represent a diversity of intra-attitudinal complexity operationalizations, but none cleanly maps onto the construct or is without its drawbacks. After reviewing the challenges posed by the measures of complexity employed here, an alternative approach, rooted in Petty and colleagues’ (2007) Meta-Cognitive Model (MCM), is proposed.

Attitudinal ambivalence, or “potential ambivalence,” is derived through one of a number of formulas that take into consideration the extremity and similarity of participants’ positive and negative evaluations of a given attitude object. Breckler (1994) did a considerable service to the field by outlining the merits and drawbacks of five attitudinal ambivalence formulas; the two formulas recommended were employed here. Nonetheless, more recent work (Locke & Braun, 2009) on the measurement of attitudinal ambivalence has called into question each of the extant formulas: None controls for the valence of the underlying attitudes, and so the measure of ambivalence also includes the influence of lower-order factors (i.e., the positive and negative evaluations themselves). Unfortunately, the remedy offered by Locke and Braun (2009) treats attitudinal ambivalence as a set of independent variables – whose weights will vary across samples – rather than as a single outcome measure to be calculated and

predicted. It should be noted that in the sample employed here, the correlation between the Thompson model of attitudinal ambivalence and the Locke and Braun alternative (regression weights set to 1) was both small and non-significant ($r = -.10$, $p = .15$, $n = 239$). Even within attitudinal ambivalence, it is unclear what operationalization is most appropriate.

Dialectical and elaborative complexity (Conway et al., 2008) represent a substantial improvement over integrative complexity (Baker-Brown et al., 1992) in that they disentangle complexity that results from recognizing different sides of an issue (dialectical) from complexity that results from seeing more than one reason to support a given side of an issue (elaborative). Nonetheless, the coding scheme is probably insufficiently sensitive for the task at hand. The problem lies in the binary nature of some levels of the coding scheme. If an individual invokes more than one argument for a particular side of an issue – no matter how many arguments he offers – his elaborative complexity score is 3. That is, a response with two arguments for a single side is coded the same as one that employs all 16 in the briefing booklets. The same problem exists for dialectical complexity: Offering five reasons for each side of an argument receives a score of 3, as does offering nine arguments on one side and one on the other. No one would argue that either set of responses contain equivalently complex representations of the issue under consideration. In the data collected here, the bulk of responses were caught in the overly-broad response option, “3.” In Session 2, fewer than one in four responses showed any signs of integration; by Session 3, fewer than one in five did. By contrast, between 52.6% (Session 3 dialectical complexity) and 84.6% (Session 2 elaborative complexity) of participants earned a score of 2 or 3, indicating at least the

acknowledgement of two sides of an issue or two arguments for a single side. Unable to differentiate between these kinds of responses, dialectical and elaborative complexity may be too blunt as instruments to capture the differential degrees of intra-attitudinal complexity created by deliberation and non-deliberative alternatives.

Finally, the adjusted-ratio-of-clustering recall measures employed here rely upon *a priori* specification of the axes on which information is organized in memory. Here, valence was employed as a face valid but minimally complex structure – evidence of organization but not integration between positive and negative evaluations. But imagine an individual who does not rely on valence but instead holds a more complex representation of the Lightrail in which positive and negative information is interwoven in memory. On what axes would that individual’s information be organized? Categories in which the information was presented? Self- versus other-relevant information? Information about the Lightrail itself versus information that relates to people? The problem with the clustering method is the considerable likelihood of Type II error; organization might exist, but one must specify the axes perfectly in order to accurately represent them.

As with the selection of the “right” deliberative criteria, there is no theoretical guidance for choosing among the operationalizations of complexity employed in the current study. What is needed is a more technical, theory-based measurement of intra-attitudinal complexity. The MCM offers a model and a protocol that allow for a more precise and sensitive assessment of the construct.

Ambivalence in the MCM.

Although not expressly grounded in Petty and colleagues' (Petty et al., 2007)

Meta-Cognitive Model, the current research fits nicely within its model of attitude structure. Like single attitude models, the MCM defines an attitude as object-evaluation link, the strength of which can vary. The MCM extends that logic in two ways, both of which are relevant for the assessment of true intra-attitudinal complexity. First, the MCM allows for both a positive and negative evaluation to be linked simultaneously to a single attitude object. True intra-attitudinal complexity would require the positive and negative evaluations to be comparably extreme and accessible. This is not unlike the existing attitudinal ambivalence formulas that define ambivalence as the joint product of the positive and negative evaluations' extremity and similarity. The difference lies in the addition of the evaluations' accessibility; intra-attitudinal complexity requires both positive and negative evaluations to be readily accessible. Indeed, it is the strength of the link between the object and each evaluation that distinguishes purposeful complexity – the kind of thought to come from deliberating – and haphazard complexity, as when one of several available evaluations is employed because it happens to be (or has been made to be) momentarily more salient (Schwarz, 2007; Zaller & Feldman, 1992). With strong links between the object and each evaluation, the primed accessibility of one evaluation ought to make accessible the other, thereby necessitating more nuanced consideration of the topic regardless of the triggering information. With weaker links between the attitude object and evaluations, situational factors like mood, context, or the frequency with which the evaluation is accessed might temporarily heighten the accessibility of one evaluation over the other (see Schwarz,

2007, for an overview) thereby rendering moot the comparable extremity of the evaluations themselves.

The MCM can model the difference between haphazard and purposeful ambivalence and has already been fruitfully employed to identify participant ambivalence. Using a single item IAT, in which the item is paired in one block with the positive response key and in another with the negative response key, de Liver and colleagues (2007) demonstrated the traditional facilitation effects for (self-generated) objects about which one holds a positive or negative evaluation but no facilitation in either pairing for self-generated ambivalent objects. In those cases, the reaction times fell squarely between the facilitated reaction times in compatible pairings (e.g., positively-valenced attitude object paired with the positive response key) and the inhibited reaction times for incompatible pairings (e.g., negatively-valenced attitude object paired with the positive response key). More important, a subsequent affective priming study demonstrated that reaction times for ambivalent attitudes could be facilitated by positive and negative primes, and that cross-valence priming did occur, albeit marginally ($p = .06$). That is, not only does a positive prime (e.g., a favorable story about the Lightrail) activate the positive evaluation of the Lightrail, but it also makes the negative evaluation (marginally) more accessible. The results reveal true ambivalence, the kind deliberative theorists hope for, when individuals compelled to think about a topic automatically consider all of its aspects rather than simply those that are made temporarily accessible or that fit pre-conceived and univalent predilections. It is possible, and natural, to hold attitudes with both positive and negative evaluations, and the accessibility of each need not be compromised because of the presence of the

other. Future work on deliberation and intra-attitudinal complexity would profit from assessing the extent to which deliberation creates purposefully complex attitudes, those with strong links between each valence of evaluation and the attitude object.

The second extension offered by the MCM offers the possibility of a more stringent operationalization of intra-attitudinal complexity. The MCM postulates the existence of a “validity tag” – an expression of whether the evaluation is true and/or the degree of confidence with which the evaluation is held – linked to each evaluation. Accordingly, an individual can hold comparably extreme positive and negative evaluations of a given object with comparable accessibility and yet still not have complete intra-attitudinal complexity: if the validity tags differ or differ in accessibility, and are employed, any complexity would be rendered moot. Following the MCM, true intra-attitudinal complexity requires equivalence between the positive and negative evaluative and validity tags, as well as in the links that connect the object to the evaluative tag and the evaluative tags to their respective validity tags. No work to date has examined the accessibility of validity tags – which according to the model can, but need not, be stored in memory – but one might be able to infer its measurement from a lexical decision task in which individuals are required to specify whether a set of targets is positive (and then negative). Having first ensured the equivalent extremity and accessibility of the positive and negative evaluations (as per de Liver et al., 2007) as well as the equivalence of the validity tags’ extremity (e.g., attitude clarity and confidence, as in Petrocelli et al., 2007), differences in reaction time between the positive and negative blocks for the target object could indicate differential accessibility of the validity tags. Such an extensive procedure is more precise, but unlikely to be

adopted by deliberation researchers until more basic research establishes the existence and necessity of validity tags.

Finally, if researchers are less interested in deliberation's ability to induce complexity relative to non-deliberative alternatives but nonetheless want to measure its capacity to induce intra-attitudinal complexity, they might consider measuring the extent to which participants leave the deliberative environments with "implicit" ambivalence, the simultaneous possession of differently-valenced explicit and implicit evaluations of a given topic. When deliberations address actual topics with which participants are somewhat familiar and about which they have some *a priori* evaluation, deliberation leads to knowledge gains and attitude change (Farrar et al., 2006; Fishkin, 1996). The MCM, like dual attitude models that preceded it (e.g., Wilson et al., 2000), stipulates that the newly formed evaluation ought to co-exist with the evaluation that participants had before deliberating (Petty et al., 2006; Petty et al., 2007). The MCM and dual attitude models differ in that the MCM postulates that the two evaluations are tied to the same attitude object and the "old" attitude remains inert only insofar as the negative validity tag now attached to the evaluation is accessed. Unlike situations in which the "old" attitude is better left unaccessed – stereotypes, unhealthy behavioral attitudes, and the like – the simultaneous accessibility of "old" and "new" evaluations of a given object may actually be beneficial. If both the old and new evaluations have merit and are based in fact, it might behoove an individual (or society) to retain that complexity. The question then becomes how long both evaluations can remain accessible before a) the negating validity tag becomes sufficiently accessible to remove the influence of the "old" evaluation, b) the object-evaluation link for the new attitude

grows sufficiently strong to supplant the old evaluation altogether, or c) the “new” evaluation fails to take root and fades from memory. That is, for how long, and under what circumstances, is this “implicit” ambivalence a natural by-product of deliberation and what are its consequences within and beyond the deliberative environment?

In sum, the intra-attitudinal complexity measures used here represent qualitatively different kinds of complexity. Moreover, each is flawed. Without a guide to aid a choice among them, researchers might do well to abandon them in favor of a more precise and theoretically grounded measure.

Conclusion

Deliberative theorists have put considerable faith in citizens’ ability to engage in meaningful, deliberative, rational discussion of the issues that confront them. The research just detailed – the first to address the impact of deliberation on the structure of participants’ attitudes – constitutes a quantitative test of one aspect of the theory’s viability. As deliberative theorists advocate for the use of deliberation among citizens and government agencies, populist strains in contemporary American politics push for a larger role for the citizenry in the country’s decision-making, and the challenges confronting state and federal governments grow in complexity, deliberation’s inability to distinguish itself ought to give its supporters pause. Deliberation is both time-consuming and difficult to execute properly. Participants must adhere to stringent behavioral guidelines; organizers must provide participants with unbiased, balanced information and create a deliberative space; financial resources are necessary to convene the forum. With this degree of cost, advocates can reasonably be asked whether deliberation yields consequences of sufficient desirability to warrant such

effort. The analyses detailed above suggest that if one's goal is to create citizens who employ multiple points of view when making policy decisions, deliberation may hold no particular advantage. An approach that requires less money and time might suffice or even be preferable.

For deliberation's proponents, not all is lost. The deliberative environment created here represents one of a multitude of deliberation-like environments that could, and should, be investigated. The rigorous, experimental methodology employed here ought to be wed to more naturally-occurring deliberative endeavors, like the post-9/11 deliberation about the future of the World Trade Center site (Polletta, 2008). Such forums are notably weak with regard to implementation of deliberative *desiderata*, but are more likely to include participants who genuinely care about an issue and want to find a solution. Deliberations, like the ones detailed here, conjured for the sake of investigation have complementary strengths and weaknesses: rigorous control but, perhaps, relatively less or differently engaged participants. It is one thing, after all, to debate a policy that might affect one's community but another to debate the merits of a plan that will put a Lightrail line through one's neighborhood. Exporting experimental methods to deliberative situations in which real people address real problems facing their communities would go a long way towards addressing what deliberation *does* offer rather than what it might.

Beyond the study of deliberation's impact on attitudes and behavior, the concept may yet prove useful to those who wish to stem the incivility, apathy and ignorance in the national dialogue. Citizens *can* deliberate, and their resulting preferences are qualitatively different than those held among average citizens. If used properly, the

decisions and preferences of a small number of people cajoled into acting as model citizens for a limited amount of time may be able to shift the broader civic discourse. In an early public appeal for Deliberative Polling, Fishkin (1988) advocated for a “national caucus” in which a representative sample of Americans would encamp for a few weeks at the outset of the Presidential primary race to learn about the issues facing the country, hear from the candidates themselves, and engage in deliberation. In his appeal, Fishkin argued for a subset of the participants to be sent to the national conventions as at-large delegates; making public the deliberators’ decisions and preferences might be a better use of their efforts. Having the media employ deliberators’ preferences – which candidates they endorse and why, what issues they feel are most pressing and how they would approach them, what challenges they face that leaders aren’t addressing or even noticing – might be a more cost-effective and successful approach towards establishing a more thoughtful, deliberative society. Rather than ask a large percentage of Americans to engage in effortful consideration of complex information – be it in deliberation or a non-deliberative-setting – advocates of a civil and informed national discussion might find more success in providing citizens with a heuristic based on *other* citizens’ effortful consideration. This is certainly no substitute for candidate selection by traditional means, but it should prove a useful supplement to those processes. Providing participants with a better decision rule should affect voter decision-making (Bartels, 1996), and may also discourage public discussions that fall short of the complexity inherent in the heuristic provided by the national convention. Told by an authoritative source that the most pressing issues facing the country in the coming years include energy independence, growing income disparity, and intractable unemployment,

the public should be less likely to list rank frivolous and uncivil issues – rumors of a candidate’s foreign birth or “tyranny” in the guise of a 2% increase in the personal income tax rate – as among the most important (McCombs & Shaw, 1972) or to use them when evaluating candidates (Iyengar & Kinder, 1987). Rather than fight the tide of citizen apathy, advocates of a more reasoned national dialogue might be able to profit from it. Doing so may not yield the deliberative society theorists envision, but it could move us closer to a serious, effective national discussion.

Table 1

Zero-order Correlations Among Complexity Outcome Measures

		Session 2					Session 3				
		Thom	DC	EC	Cont	Val	Thom	DC	EC	Cont	Val
Session 2	Thom	-	-	-	-	-	-	-	-	-	-
	DC	.04	-	-	-	-	-	-	-	-	-
	EC	.05	.08	-	-	-	-	-	-	-	-
	Cont	-.02	.03	-.01	-	-	-	-	-	-	-
	Val	-.02	-.04	-.02	.29*	-	-	-	-	-	-
Session 3	Thom	.33*	.02	-.01	-.04	-.26	-	-	-	-	-
	DC	.23	.16	-.19	.02	-.08	-.02	-	-	-	-
	EC	.07	-.01	.37*	.01	.03	.00	.03	-	-	-
	Cont	-.14	.15	.26	.29†	.35†	-.12	.02	.06	-	-
	Val	.12	.30†	-.27	-.14	-.06	-.11	-.03	-.10	.15†	-

Note. † $p \leq .05$ * $p \leq .01$. Thom = Thompson Attitudinal Ambivalence. DC = Dialectical Complexity. EC = Elaborative Complexity. Cont = Content-based Recall. Val = Valence-based Recall.

Table 2

Deliberation-only Manipulation Checks

Paraphrased items	Mean	Standard Deviation
I had equal say in the discussion	6.44**	.874
I gave reasons for my opinions	6.19**	.863
Others gave reasons for their opinions	6.33**	.814
I listened respectfully	6.63**	.657
My opinions were respected	6.56**	.700
I felt accountable to others	5.73*	1.292
Others were accountable to me	5.62*	1.322
I tried to be thoughtful	6.32**	.803
Others tried to be thoughtful	6.28**	.856

Note. * significantly greater than 5.0 but significantly less than 6.0; ** significantly greater than 6.0; items scaled 1-7.

Table 3

Intraclass Correlations in Session 2 by Outcome and Deliberation Group Size

Outcome Measure	Participants in Group	
	Two	Three
Attitudinal Ambivalence	.20	.33
Dialectical Complexity	.01	.37
Elaborative Complexity	.12	.05
Content-based Recall	-.24	.24
Valence-based Recall	-.39	-.08

Table 4

Attitude Valence Means and Standard Deviations, by Component and Condition

		Condition		
		Argumentation	Elaboration	Deliberation
		Mean (SD)	Mean (SD)	Mean (SD)
Session 2				
	Evaluative	5.01 (1.83)	5.29 (1.64)	5.14 (1.71)
	Cognitive	5.07 (1.77)	5.40 (1.34)	5.42 (1.67)
	Affective	4.83 (1.25)	5.01 (1.13)	4.89 (1.44)
Session 3				
	Evaluative	4.69 (1.91)	5.12 (1.90)	5.05 (1.85)
	Cognitive	4.91 (1.93)	5.18 (1.76)	5.27 (1.77)
	Affective	4.85 (1.52)	4.89 (1.35)	4.84 (1.37)

Note: Items scaled 1-9.

Table 5

Attitude Component Zero-order and Partial Correlations

		Argumentation	Elaboration	Deliberation
Session 2				
	EC	.82	.84	.82
	EA	.82	.74	.78
	EC.A	.52	.71	.53
	EA.C	.52	.50	.40
Session 3				
	EC	.85	.90	.85
	EA	.83	.85	.81
	EC.A	.49	.67	.63
	EA.C	.43	.47	.52

Table 6

Subjective Attitude Strength Means and Standard Deviations, by Condition

		Condition		
		Argumentation Mean (SD)	Elaboration Mean (SD)	Deliberation Mean (SD)
Session 2				
	Attitude Certainty	6.38 (1.43)	6.70 (1.22)	6.51 (1.21)
	Attitude Clarity	6.74 (1.52)	7.02 (1.34)	6.95 (1.35)
	Attitude Correctness	5.91 (1.72)	6.27 (1.37)	5.92 (1.53)
	Perceived Knowledge	4.87 (1.19)	4.90 (1.09)	4.95 (1.10)
	Perceived Thoughtfulness	4.52 (0.90)	4.59 (1.11)	4.77 (1.11)
Session 3				
	Attitude Certainty	6.56 (1.77)	6.73 (1.17)	6.64 (1.34)
	Attitude Clarity	6.93 (1.72)	7.23 (1.26)	7.13 (1.36)
	Attitude Correctness	6.08 (2.07)	6.08 (1.47)	5.99 (1.68)
	Perceived Knowledge	4.74 (1.22)	4.98 (1.01)	4.98 (1.07)
	Perceived Thoughtfulness	4.91 (1.14)	4.96 (1.08)	5.00 (1.15)

Note: Attitude Certainty, Clarity, and Correctness items scaled 1-9; Perceived Knowledge and Thoughtfulness items scaled 1-7.

Table 7

Number of Recalled Items, By Topic and Condition

		Condition		
		Argumentation	Elaboration	Deliberation
		Mean (SD)	Mean (SD)	Mean (SD)
Session 2				
	The Ride	2.05 (1.01)	2.02 (1.25)	1.75 (1.06)
	Business	2.15 (1.11)	2.27 (1.15)	1.75 (0.95)
	Who Pays	1.35 (1.17)	1.80 (1.22)	1.77 (0.92)
	Environment	1.38 (0.99)	1.20 (0.98)	1.38 (0.82)
	Neighborhoods	1.49 (1.10)	1.76 (1.01)	1.43 (0.92)
	Transportation	2.27 (1.06)	2.43 (1.12)	2.25 (1.16)
	Alternatives			
Session 3				
	The Ride	1.70 (0.95)	1.42 (0.99)	1.54 (1.14)
	Business	1.74 (1.02)	1.52 (0.99)	1.46 (0.81)
	Who Pays	1.04 (1.07)	1.06 (0.89)	1.37 (1.00)
	Environment	1.23 (0.95)	1.02 (1.06)	1.17 (0.75)
	Neighborhoods	0.89 (0.87)	1.35 (0.96)	1.23 (0.91)
	Transportation	2.09 (1.33)	1.92 (1.22)	2.11 (1.14)
	Alternatives			

Table 8

Sessions 2 and 3 Complexity Means and Standard Deviations, by Condition

	Session 2					
	Argumentation		Elaboration		Deliberation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Scott Attitude						
Ambivalence	.12	.07	.11	.07	.09	.06
Thompson Attitude						
Ambivalence	.41	.05	.40	.06	.39	.06
Dialectical						
Complexity	2.78	1.24	3.00	1.12	2.63	.08
Elaborative						
Complexity	2.89	.85	2.88	.60	2.78	.71
Content ARC	.15	.30	.21	.29	.20	.32
Valence ARC	.13	.35	.14	.41	.03	.34
	Session 3					
	Argumentation		Elaboration		Deliberation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Scott Att.						
Ambivalence	.10	.06	.10	.07	.09	.07
Thomp. Att.						
Ambivalence	.39	.05	.39	.06	.39	.06
Dialectical						
Complexity	2.21	1.12	2.37	1.17	2.31	1.06
Elaborative						
Complexity	2.77	1.07	2.53	.95	2.71	.75
Content ARC	.26	.40	.27	.45	.16	.35
Valence ARC	.06	.34	.20	.40	.10	.33

Note: Attitudinal Ambivalence and ARC scores range from 0-1; Dialectical and Elaborative Complexity scores range from 1-7.

Table 9

Session 2 Thompson Attitudinal Ambivalence Unstandardized Regression Coefficients, Standard Errors, and Significance Levels

Predictor	Thompson Attitudinal Ambivalence		
	B	SE	p
Constant (Deliberation <i>M</i>)	.391**	.005	<.001
Argumentation Dummy	.020*	.009	.031
Elaboration Dummy	.011	.010	.256
Need for Cognition	.022*	.009	.016
Need for Closure	.004	.010	.688
Preference for Consistency	-.001	.004	.826
Political Knowledge	-.002	.002	.394
Normative Delib. Beliefs	.004	.011	.727
Personal Delib. Beliefs	-.001	.005	.857
Arg. x Need for Cognition	-.020	.017	.239
Elab. x Need for Cognition	-.033†	.018	.073
Arg. x Need for Closure	.011	.027	.680
Elab. x Need for Closure	-.023	.024	.342
Arg. x Pref. for Consistency	-.006	.009	.508
Elab. x Pref. for Consistency	.012	.009	.159

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 10

Session 2 Dialectical Complexity Unstandardized Regression Coefficients, Standard Errors, and Significance Levels

Predictor	Dialectical Complexity		
	B	SE	<i>p</i>
Constant (Deliberation <i>M</i>)	2.626**	.103	<.001
Argumentation Dummy	.143	.196	.465
Elaboration Dummy	.388†	.201	.055
Need for Cognition	-.129	.204	.529
Need for Closure	.054	.235	.818
Preference for Consistency	-.023	.091	.801
Political Knowledge	.002	.039	.967
Normative Delib. Beliefs	.302	.204	.141
Personal Delib. Beliefs	-.065	.102	.524
Arg. x Need for Cognition	.527†	.311	.093
Elab. x Need for Cognition	.265	.469	.573
Arg. x Need for Closure	-.484	.488	.322
Elab. x Need for Closure	.434	.541	.424
Arg. x Pref. for Consistency	-.096	.187	.608
Elab. x Pref. for Consistency	-.004	.196	.984

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 11

Session 2 Elaborative Complexity Unstandardized Regression Coefficients, Standard Errors, and Significance Levels

Predictor	Elaborative Complexity		
	B	SE	p
Constant (Deliberation <i>M</i>)	2.79**	.063	<.001
Argumentation Dummy	.090	.129	.484
Elaboration Dummy	.062	.115	.589
Need for Cognition	.009	.091	.923
Need for Closure	.039	.140	.782
Preference for Consistency	.042	.063	.501
Political Knowledge	-.004	.026	.887
Normative Delib. Beliefs	.089	.156	.569
Personal Delib. Beliefs	-.097	.064	.132
Arg. x Need for Cognition	.043	.246	.861
Elab. x Need for Cognition	-.127	.271	.640
Arg. x Need for Closure	.425	.309	.171
Elab. x Need for Closure	-.434	.303	.154
Arg. x Pref. for Consistency	-.116	.128	.365
Elab. x Pref. for Consistency	.018	.085	.836

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 12

Session 2 Content-based Recall Unstandardized Regression Coefficients, Standard Errors, and Significance Levels

Predictor	Content-based Recall		
	B	SE	p
Constant (Deliberation <i>M</i>)	.198**	.028	<.001
Argumentation Dummy	-.060	.052	.248
Elaboration Dummy	.027	.048	.572
Need for Cognition	.118**	.044	.008
Need for Closure	.033	.062	.597
Preference for Consistency	-.012	.026	.657
Political Knowledge	-.002	.012	.851
Normative Delib. Beliefs	.085	.058	.142
Personal Delib. Beliefs	.002	.027	.948
Arg. x Need for Cognition	-.071	.083	.395
Elab. x Need for Cognition	-.030	.091	.740
Arg. x Need for Closure	.046	.154	.765
Elab. x Need for Closure	-.050	.156	.749
Arg. x Pref. for Consistency	-.010	.053	.856
Elab. x Pref. for Consistency	.090*	.043	.039

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 13

Session 2 Valence-based Recall Unstandardized Regression Coefficients, Standard Errors, and Significance Levels

Predictor	Valence-based Recall		
	B	SE	p
Constant (Deliberation <i>M</i>)	.035	.027	.191
Argumentation Dummy	.083	.054	.127
Elaboration Dummy	.126*	.061	.041
Need for Cognition	.036	.066	.590
Need for Closure	.050	.086	.564
Preference for Consistency	-.018	.031	.573
Political Knowledge	.004	.013	.753
Normative Delib. Beliefs	.115†	.068	.092
Personal Delib. Beliefs	-.012	.035	.741
Arg. x Need for Cognition	-.012	.111	.912
Elab. x Need for Cognition	.053	.136	.697
Arg. x Need for Closure	-.078	.158	.622
Elab. x Need for Closure	.096	.206	.643
Arg. x Pref. for Consistency	.037	.056	.516
Elab. x Pref. for Consistency	.062	.063	.329

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 14.

Session 2 Thompson Attitudinal Ambivalence Unstandardized Regression Coefficients and Standard Errors among Dispositional Openness Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.394**	.006	.400**	.009
Argumentation Dummy Code	.020	.013	.008	.014
Elaboration Dummy Code	-.008	.015	-.001	.017
Deliberative Inclination	.033**	.010	.030**	.009
Arg. x Deliberative Inclination	-.041*	.021	-.013	.016
Elab. x Deliberative Inclination	-.020	.506	-.095**	.031

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 15.

Session 2 Dialectical Complexity Unstandardized Regression Coefficients and Standard Errors among Dispositional Openness Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	2.60**	.144	2.69**	.155
Argumentation Dummy Code	.692†	.354	-.120	.286
Elaboration Dummy Code	.254	.301	-.018	.505
Deliberative Inclination	.544**	.201	-.36*	.173
Arg. x Deliberative Inclination	-.198	.339	1.144**	.292
Elab. x Deliberative Inclination	.292	.578	-.551	.951

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 16.

Session 2 Elaborative Complexity Unstandardized Regression Coefficients and Standard Errors among Dispositional Openness Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	2.688**	.102	2.804**	.117
Argumentation Dummy Code	.140	.130	.082	.284
Elaboration Dummy Code	.211	.160	.277	.175
Deliberative Inclination	.194	.086	-.210	.141
Arg. x Deliberative Inclination	-.445**	.159	.056	.452
Elab. x Deliberative Inclination	.144	.624	.636*	.310

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 17.

Session 2 Content-based Recall Unstandardized Regression Coefficients and Standard Errors among Dispositional Openness Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.237**	.055	.165**	.050
Argumentation Dummy Code	-.088	.089	-.018	.077
Elaboration Dummy Code	-.072	.097	.003	.075
Deliberative Inclination	.050	.063	.162**	.058
Arg. x Deliberative Inclination	-.043	.097	.037	.092
Elab. x Deliberative Inclination	-.032	.187	-.198	.137

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 18.

Session 2 Valence-based Recall Unstandardized Regression Coefficients and Standard Errors among Dispositional Openness Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.049	.050	.082†	.049
Argumentation Dummy Code	.092	.087	.011	.094
Elaboration Dummy Code	.113	.117	.334**	.105
Deliberative Inclination	-.033	.066	.136†	.075
Arg. x Deliberative Inclination	.058	.092	-.095	.154
Elab. x Deliberative Inclination	-.166	.244	.416**	.139

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 19.

Session 2 Thompson Attitudinal Ambivalence Unstandardized Regression Coefficients and Standard Errors among Deliberative Inclination Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.404**	.011	.389**	.008
Argumentation Dummy Code	.004	.016	.017	.015
Elaboration Dummy Code	-.007	.026	.016	.014
Dispositional Openness	-.002	.011	-.005	.011
Arg. x Dispositional Openness	-.010	.015	.008	.017
Elab. x Dispositional Openness	.030	.045	-.008	.020

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 20.

Session 2 Dialectical Complexity Unstandardized Regression Coefficients and Standard Errors among Deliberative Inclination Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	2.727**	.158	2.527**	.156
Argumentation Dummy Code	.318	.294	.036	.325
Elaboration Dummy Code	.007	.475	.668*	.335
Dispositional Openness	.353*	.174	-.276	.211
Arg. x Dispositional Openness	-.076	.275	.961*	.420
Elab. x Dispositional Openness	.597	.702	-.218	.395

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 21.

Session 2 Elaborative Complexity Unstandardized Regression Coefficients and Standard Errors among Deliberative Inclination Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	2.823**	.094	2.81**	.140
Argumentation Dummy Code	-.060	.205	.228	.272
Elaboration Dummy Code	-.167	.312	-.169	.227
Dispositional Openness	.136	.131	-.261†	.144
Arg. x Dispositional Openness	-.266	.181	.020	.403
Elab. x Dispositional Openness	.381	.467	.206	.230

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 22.

Session 2 Content-based Recall Unstandardized Regression Coefficients and Standard Errors among Deliberative Inclination Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.227**	.043	.085†	.047
Argumentation Dummy Code	.004	.076	-.012	.092
Elaboration Dummy Code	.059	.054	.074	.072
Dispositional Openness	-.046	.041	.024	.065
Arg. x Dispositional Openness	.011	.065	.077	.103
Elab. x Dispositional Openness	-.067	.244	-.176†	.092

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 23.

Session 2 Valence-based Recall Unstandardized Regression Coefficients and Standard Errors among Deliberative Inclination Elites and Novices

Predictor	Elites		Novices	
	B	SE	B	SE
Constant (Deliberation Mean)	.017	.043	.008	.054
Argumentation Dummy Code	.195*	.077	.003	.105
Elaboration Dummy Code	.089	.116	.129	.126
Dispositional Openness	-.103*	.039	.108	.076
Arg. x Dispositional Openness	.052	.071	-.075	.158
Elab. x Dispositional Openness	.229†	.138	-.027	.188

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 24

Session 2 Outcomes Predicted by Felt Ambivalence and Elaboration, Overall and Among Deliberation Participants Only

Outcome	Overall Sample					
	Felt Ambivalence		Elaboration		Interaction	
	B	SE	B	SE	B	SE
Attitudinal Ambivalence	.006**	.001	.049†	.030	.008	.011
Dialectical Complexity	.135**	.025	.079	.678	.104	.194
Elaborative Complexity	.031†	.018	.104	.510	.088	.148
Content-based Recall	-.004	.007	-.075	.224	.109	.086
Valence-based Recall	-.002	.009	.090	.289	.009	.100
Outcome	Deliberation Only					
	Felt Ambivalence		Elaboration		Interaction	
	B	SE	B	SE	B	SE
Attitudinal Ambivalence	.007**	.002	.007	.036	.010	.015
Dialectical Complexity	.105**	.033	.284	.826	.089	.275
Elaborative Complexity	.022	.024	1.397*	.710	.198	.224
Content-based Recall	-.002	.010	-.024	.337	.107	.134
Valence-based Recall	.002	.011	.870**	.299	-.050	.123

Note. † $p \leq .10$, * $p \leq .05$, ** $p \leq .01$

Table 25

Directional Change Means and Standard Deviations, by Condition

	Condition					
	Argumentation		Elaboration		Deliberation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Thomp. Att. Ambivalence	.017	.061	.008	.053	.005	.060
Dialectical Complexity	.566	1.538	.615	1.314	.313	1.348
Elaborative Complexity	.113	1.104	.344	1.068	.084	.953
Content-based Recall	.067	.439	.130	.569	.200	.388
Valence-based Recall	.241	.441	.260	.495	.240	.397

Note: Attitudinal Ambivalence change could range from -1 to +1; Dialectical and Elaborative Complexity change could range from -6 to +6; ARC score change could range from (roughly) -1 to +1.

Table 26

Absolute Change Means and Standard Deviations, by Condition

	Condition					
	Argumentation		Elaboration		Deliberation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Thomp. Att. Ambivalence	.046	.043	.042	.034	.043	.042
Dialectical Complexity	1.208	1.098	1.073	.968	1.015	.936
Elaborative Complexity	.755	.806	.719	.856	.527	.797
Content-based Recall	.345	.278	.429	.391	.338	.275
Valence-based Recall	.387	.317	.422	.364	.361	.291

Note: Attitudinal Ambivalence change could range from -1 to +1; Dialectical and Elaborative Complexity change could range from -6 to +6; ARC score change could range from (roughly) -1 to +1.

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Appendix A

Information Pilot Item Descriptive Statistics

Category	Topic	Wording	Mean	SD
Strong Pro	Impact on Business	The Minneapolis and Saint Paul Chambers of Commerce project a 12-16% increase in annual revenue for businesses along the light rail line.	2.34	1.08
Strong Pro	Impact on Business	Transportation officials project that businesses along the light rail can expect roughly 2,500 additional customers per week.	2.31	1.20
Strong Pro	Riding Experience	The light rail will provide convenient access to downtown Minneapolis and Saint Paul, connecting riders to the unique cultural, educational, and athletic opportunities available throughout the Twin Cities.	2.55	1.68
Strong Pro	Riding Experience	All light rail cars and stations will comply with Subpart D of Title 49 of the Americans with Disabilities Act (1990). Cars and stations will be 100% wheelchair accessible. Among other features, rail cars will feature wheelchair and assistance animal priority seating as well spoken and text station announcements to accommodate deaf, blind, and low vision riders.	2.55	1.27
Strong Pro	Impact on Students	University students that normally walk or bike to and around campus will enjoy the ease of the light rail, particularly during the winter and other times of inclement weather.	2.48	0.91

Category	Topic	Wording	Mean	SD
Strong Pro	Impact on Environment	The Ramsey County Conservation Board and faculty at the University of Minnesota's Soil, Water and Climate department have testified that converting Washington Avenue into a pedestrian mall will enable better storm water management. The metro area can expect improved water quality, reduced risk of flooding, and a dramatic decline in soil erosion, all of which will contribute to a healthier watershed in the region.	2.45	1.68
Strong Pro	Impact on Environment	Reducing pollution in the Twin Cities will make the Mississippi River less polluted, possibly even safe to swim in.	2.48	1.35
Strong Pro	Impact on Neighborhoods	Washington Avenue and University Avenue are scheduled to become pedestrian malls – similar to the Nicollet mall – on either side of the light rail tracks. The space will allow for outdoor cafes and performance spaces, which will add an element of sophistication to nearby neighborhoods.	2.36	1.10
Strong Pro	Impact on Neighborhoods	Community members have been consulted at every step of the planning and development process to ensure that the light rail project preserves neighborhoods' unique charm rather than remaking or overhauling them.	2.50	1.29

Category	Topic	Wording	Mean	SD
Strong Pro	Building the Lightrail	Construction of light rail cars and stations will employ recent advances in material sciences and manufacturing technology to minimize the amount of waste material created during construction. Only 3.4% of all raw materials will end up as waste.	2.41	1.02
Strong Pro	Impact on Existing Transit Options	Once the light rail is functioning, traffic on I-94 is expected to diminish by 17% between downtown St. Paul and Minneapolis.	2.62	1.05
Strong Pro	Impact on Existing Transit Options	The light rail system is projected to generate \$2.2 million budget surplus over 5 years, which may allow expanded public transportation coverage in areas not benefited by the Light Rail project.	2.45	1.12
Medium Pro	Impact on Business	Businesses can take advantage of light rail's environmental impact and "green wash" themselves: New and existing businesses can profitably market their support for environmentally responsible practices through local advertising.	1.62	1.50
Medium Pro	Impact on Business	Businesses along the light rail will be given first opportunity to advertise at light rail stations and on the light rail trains themselves, further bolstering foot traffic and, potentially, sales.	1.48	1.33

Category	Topic	Wording	Mean	SD
Medium Pro	Impact on Business	To open a store, owners must demonstrate that the surrounding area can support their business, specifically that there is sufficient parking. Having public transportation along Washington Avenue removes this requirement, making it easier to start a business.	1.69	1.11
Medium Pro	Who will Pay for Lightrail?	New businesses near the light rail will generate an estimated \$72 million per year, reducing individual taxpayers' burden.	1.69	1.78
Strong Con	Impact on Business	Small, local businesses will have difficulty affording to stay along the light rail line. Neighborhoods stand to lose local institutions that have served and defined the community for decades.	-2.34	1.14
Strong Con	Impact on Business	Construction of the light rail is expected to last approximately one year, during which time Washington Avenue will be shut down. It will be very difficult to access businesses in this phase of development, and existing businesses may not survive until the light rail is functional.	-2.48	1.12
Strong Con	Impact on Students	Non-light rail public transportation between the East and West Bank campuses will be severely restricted. The Campus Connector bus route will connect the East Bank to the St. Paul Campus but not service the West Bank. Students will either walk across the Mississippi River or pay to take the light rail.	-2.21	1.57

Category	Topic	Wording	Mean	SD
Strong Con	Impact on Students	Due to budgetary constraints, the State Legislature has proposed an 8% (\$7.2 million) reduction in University funding. That money will be redirected to ensure completion of the light rail in a timely fashion. The missing funding will either result in diminished services or increased tuition.	-2.48	1.81
Strong Con	Who will Pay for Lightrail?	State legislators forecast a 3.8% reduction in K-12 education and social program funding as money is reallocated towards light rail construction.	-2.79	1.18
Strong Con	Who will Pay for Lightrail?	With the current economic situation, taxpayers are already especially burdened. Additional taxes may prove especially unpopular and therefore especially difficult for legislators to propose and support. The project may be left underfunded.	-2.52	1.33
Strong Con	Impact on Environment	The building and maintenance of the light rail trains, rails, and platforms requires the use of industrial chemicals. These toxic chemicals can leak into lakes and rivers, negatively affecting the water supply and endangering local wildlife.	-2.18	1.25

Category	Topic	Wording	Mean	SD
Strong Con	Impact on Neighborhoods	Rising property values may make it impossible for less affluent individuals to afford the rent near the light rail. This poses a particular problem along Washington Avenue, near the East and West Bank campuses of the University of Minnesota.	-2.07	1.36
Strong Con	Impact on Neighborhoods	The sound and vibration from the light rail system may disturb residents who live closest to the tracks. Noise levels are expected to exceed Federal Transit Administration standards in 12 locations along the light rail line.	-2.21	1.15
Strong Con	Building the Lightrail	Washington Avenue and University Avenue will be closed for approximately one year during construction. There will be neither light rail nor car traffic during this period.	-2.55	1.12
Strong Con	Impact on Existing Transit Options	The Washington Avenue Bridge will shut down during construction, limiting motor vehicle, bicycle, and foot traffic across the river between the East and West Bank campuses.	-2.86	1.22
Strong Con	Impact on Existing Transit Options	Because Washington and University avenues will be converted into business-oriented pedestrian malls, all non-light rail transportation will be prohibited. Bicycle traffic will be prohibited to ensure the safety of pedestrians, shoppers, and transit customers.	-2.52	1.27

Category	Topic	Wording	Mean	SD
Medium Con	Impact on Business	Greater foot traffic raises security concerns for businesses. Vandalism and theft, especially at night after retail outlets close, present a new concern for businesses.	-1.45	1.33
Medium Con	Impact on Students	All University students will pay an additional tuition fee of \$12.50 per semester to offset the taxpayers' burden for maintaining the light rail.	-1.38	1.15
Medium Con	Impact on Students	Easy access to the U of M campus, via the light rail, may compromise safety on campus. Students may face heightened risk of robbery and/or assault.	-1.59	1.50
Medium Con	Alternative Transit Options	The light rail system will not connect to the Amtrak station, Greyhound station, or MegaBus stations. Thus, despite considerable fiscal investment, the Twin Cities mass transit system will not be fully integrated.	-1.48	0.99

Appendix B

Information Pilot – Selected Item Descriptive Statistics

Item Strength	Pro-Lightrail			Anti-Lightrail		
	n	Mean	SD	n	Mean	SD
Strong	12	2.46	0.72	12	-2.43	0.69
Medium	4	1.62	1.03	4	-1.47	0.63
Overall	16	2.24	0.74	16	-2.18	0.59

Appendix C

Situation Pilot and Main Study Powerpoint Presentation

U-RIDE

Bringing Transportation to U!

U-RIDE

- University Revitalization Investment and Development Effort
- Portion of the Central Corridor Lightrail
- University of Minnesota partnering with Metropolitan Council, MnDoT, and State Legislature

Hiawatha Lightrail Line



Central Corridor Line



Central Corridor Overview

- 11 miles of exclusive right of way between downtown St. Paul and downtown Minneapolis.
- 31 new Lightrail trains, each with 66 seats and comfortable standing room for an additional 70 people.
- 15 new stations, plus five stations shared with the Hiawatha line in downtown Minneapolis.
- Travel between downtown St. Paul and downtown Minneapolis in 39.13 minutes.

Central Corridor Overview

- The Central Corridor links five major centers of activity in the Twin Cities region
 - Downtown Minneapolis
 - University of Minnesota
 - Saint Paul Midway
 - State Capitol complex
 - Downtown St. Paul.
- These five centers house almost 280,000 jobs.
 - By 2030, this number is expected to grow to 345,000 jobs.
- Projected 2020 Weekday Ridership: 38,000 riders
 - By 2030, this number is expected to grow to 44,000 riders/day.

U-RIDE map



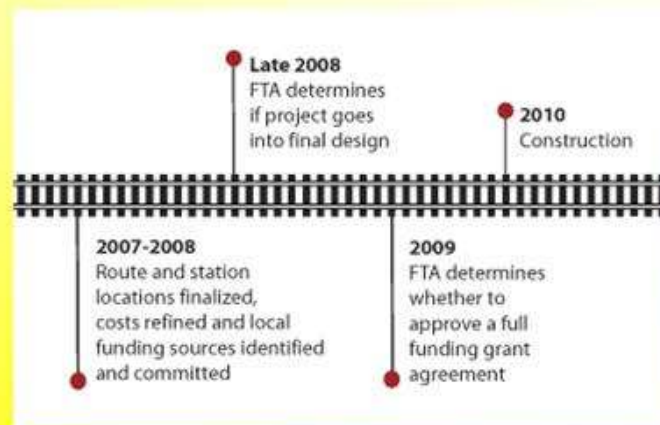
The U of M and U-RIDE

- The U-RIDE line will pass through a campus that attracts 80,000 people on a typical day.
- Outpatient health clinics located on campus generate over 400,000 visits each year
- Washington Avenue is the hub for University residence halls, Coffman Memorial Union, the graduate and professional schools, the Institute of Technology, the University libraries, and dozens of heavily used class rooms.

Transportation at the U of M

- **High need for transportation**
 - 66% of students, staff, and faculty use transportation alternatives to get to campus each day
- **High use of mass transit**
 - 7,000 University students and 1,300 faculty use discounted bus passes
- **High use of on-campus transit options**
 - The free inter-campus bus service generates 3.8 million trips annually.

Timeline



U-RIDE and You

- **Your job today**
 - **Learn about the Lightrail plan**
 - **Provide feedback to MN State Legislature**

- **Importance**
 - **Construction not yet begun**
 - **Need feedback from affected constituents before plans are finalized**
 - **You are the voice of the University Community**

U-RIDE 2009



Bringing Transportation to U!

Transportation and the U of M

The University of Minnesota plays a central role in the academic, cultural, and athletic opportunity available to residents of the Twin Cities and greater Minnesota. Perhaps more importantly, the University stands as a symbol of the state's commitment to hard work, innovation, and the importance of community.

As the University continues to grow, and as the University plays host to ever more interesting and compelling events, and as the Twin Cities population increases more rapidly, it is imperative that we find ways to retain the University's central role in the lives and minds of Minnesota residents. Ensuring safe, easy access to all the University has to offer is essential, and that makes transportation in and around the University a crucial issue for the state to resolve.



Today, we are asking you to consider some of the implications of the soon-to-be constructed Central Corridor Lightrail line. The partner organizations engaged in this tremendous undertaking are looking for feedback from members of the communities that will be affected by the new transit option. As members of the University community, your insight is invaluable as the project moves towards the final stages of planning and design.

Thank you for your time and effort today. Together, we will keep the University of Minnesota and the Twin Cities the exciting, vibrant communities we have come to cherish.

Peter Bell
Chair of the Metropolitan Council

Robert H. Bruininks
President of the
University of Minnesota



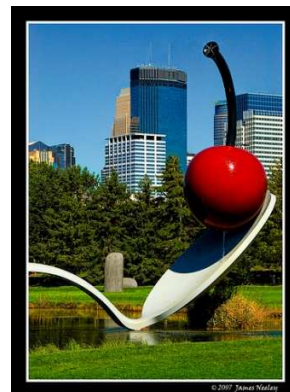
U-RIDE: Riding the Rails

Accessing Campus and the Twin Cities

The light rail will provide convenient access to downtown Minneapolis and Saint Paul, connecting riders to the unique cultural, educational, and athletic opportunities available throughout the Twin Cities.

University students that normally walk or bike to and around campus will enjoy the ease of the light rail, particularly during the winter and other times of inclement weather.

All light rail cars and stations will comply with Subpart D of Title 49 of the Americans with Disabilities Act (1990). Cars and stations will be 100% wheelchair accessible. Among other features, rail cars will feature wheelchair and assistance animal priority seating as well spoken and text station announcements to accommodate deaf, blind, and low vision riders.



Non-light rail public transportation between the East and West Bank campuses will be severely restricted. The Campus Connector bus route will no longer connect the East Bank to the West Bank. Students will either walk across the Mississippi River or pay to take the light rail.

Easy access to the U of M campus, via the light rail, may compromise safety on campus. Students may face heightened risk of robbery and/or assault.



U-RIDE: Revitalizing Business along Washington and University Avenue

Broader Customer Base:

Transportation officials project that businesses along the light rail can expect roughly 2,500 additional customers per week.

The Minneapolis and Saint Paul Chambers of Commerce project a 12-16% increase in annual revenue for businesses along the light rail line.

To open a store, owners must demonstrate that the surrounding area can support their business. Specifically the area must have sufficient parking. Having public transportation along Washington Avenue removes this requirement, making it easier to start a business.



Better Marketing:

Businesses along the light rail will be given first opportunity to advertise at light rail stations and on the light rail trains themselves, further bolstering foot traffic and, potentially, sales.



Businesses can take advantage of light rail's environmental impact and "green wash" themselves: New and existing businesses can profitably market their support for environmentally responsible practices through local advertising.



U-RIDE: Revitalizing Business along Washington and University Avenue

Potential Challenges

Small, local businesses will have difficulty affording to stay along the light rail line. Neighborhoods stand to lose local institutions that have served and defined the community for decades.

Greater foot traffic raises security concerns for businesses. Vandalism and theft, especially at night after retail outlets close, present a new concern for businesses.

Construction of the light rail is expected to last approximately one year, during which time Washington Avenue will be shut down. It will be very difficult to access businesses in this phase of development, and existing businesses may not survive until the light rail is functional.



U-RIDE: Paying for the Project

Although most of the funding has been secured, some challenges remain

All University students will pay an additional tuition fee of \$12.50 per semester to offset the taxpayers' burden for maintaining the light rail.

Due to budgetary constraints, the State Legislature has proposed an 8% (\$7.2 million) reduction in University funding. That money will be redirected to ensure completion of the light rail in a timely fashion. The missing funding will either result in diminished services or increased tuition.



State legislators forecast a 3.8% reduction in K-12 education and social program funding as money is reallocated towards light rail construction.

With the current economic situation, taxpayers are already especially burdened. Additional taxes may prove especially unpopular and therefore especially difficult for legislators to propose and support. The project may be left underfunded.



Analysts forecast a long-term surplus, however New businesses near the light rail will generate an estimated \$72 million per year, reducing individual taxpayers' burden.



U-RIDE: Environmental Impact

Anticipated Benefits

Reducing pollution in the Twin Cities will make the Mississippi River less polluted, possibly even safe to swim in.

The Ramsey County Conservation Board and faculty at the University of Minnesota's Soil, Water and Climate department have testified that converting Washington Avenue into a pedestrian mall will enable better storm water management. The metro area can expect improved water quality, reduced risk of flooding, and a dramatic decline in soil erosion, all of which will contribute to a healthier watershed in the region.



Tradeoffs in Building the Lightrail

The building and maintenance of the light rail trains, rails, and platforms requires the use of industrial chemicals. These toxic chemicals can leak into lakes and rivers, negatively affecting the water supply and endangering local wildlife.

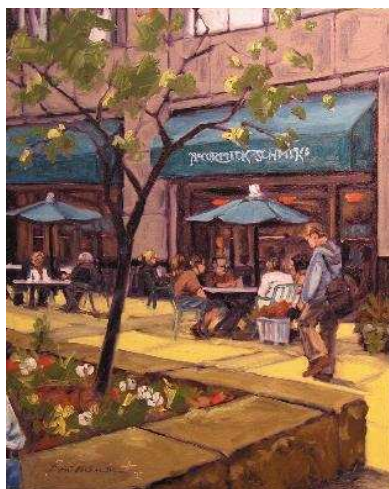
Construction of light rail cars and stations will employ recent advances in material sciences and manufacturing technology to minimize the amount of waste material created during construction. Only 3.4% of all raw materials will end up as waste.



U-RIDE: Neighborhoods and Families

Benefits

Community members have been consulted at every step of the planning and development process to ensure that the light rail project preserves neighborhoods' unique charm rather than remaking or overhauling them.



Washington Avenue and University Avenue are scheduled to become pedestrian malls – similar to the Nicollet mall – on either side of the light rail tracks. The space will allow for outdoor cafes and performance spaces, which will add an element of sophistication to nearby neighborhoods.



Challenges

Rising property values may make it impossible for less affluent individuals to afford the rent near the light rail. This poses a particular problem along Washington Avenue, near the East and West Bank campuses of the University of Minnesota.

The sound and vibration from the light rail system may disturb residents who live closest to the tracks. Noise levels are expected to exceed Federal Transit Administration standards in 12 locations along the light rail line.



U-RIDE: Getting around the Cities

Growing Pains

The Washington Avenue Bridge will shut down during construction, limiting motor vehicle, bicycle, and foot traffic across the river between the East and West Bank campuses.

All of Washington Avenue and University Avenue will be closed for approximately one year during construction. There will be neither light rail nor car traffic during this period.

The End Result

Once the light rail is functioning, traffic on I-94 is expected to diminish by 17% between downtown St. Paul and Minneapolis.

Because Washington and University avenues will be converted into business-oriented pedestrian malls, all non-light rail transportation will be prohibited. Bicycle traffic will be prohibited to ensure the safety of pedestrians, shoppers, and transit customers.



Unfinished Business

The light rail system will not connect to the Amtrak station, Greyhound station, or MegaBus stations. Thus, despite considerable fiscal investment, the Twin Cities mass transit system will not be fully integrated.

The light rail system is projected to generate \$2.2 million budget surplus over 5 years, which may allow expanded public transportation coverage in areas not benefited by the Light Rail project.



Brought to you by

Metropolitan Council

The University of Minnesota

Minnesota Department of Transportation



Appendix E

*Deliberation Ground Rules***Discussion Ground Rules**

In order to make sure we have a productive discussion, there will be several ground rules in place. First and foremost, it is important that every participant's view be heard. Each of you likely comes in with a different background, different concerns, and different transportation needs. The University community is exceptionally diverse, and it is important that as many different voices be heard as possible. In order to ensure that all voices be heard, The moderator will exercise some control over the discussion. If he or she hasn't heard from someone, he/she will solicit their opinion. If someone has said a lot already, he/she may ask that he or she hold off for a moment while others voice their opinion. This is not meant to put anyone on the spot or to silence anyone; it is only meant to ensure that all perspectives are taken into account.

Second, it is important that we all understand and acknowledge that each of our perspectives is valid and valuable. Just because we may disagree about, say, whether one aspect of a proposal is more important than another doesn't mean that either perspective is wrong. Certainly, you should feel free to follow up on each others' statements and question the rationale behind each others' preferences. This is, after all, a discussion. But, as you do so, it is important to recognize that each of our perspectives is valid and deserves respect.

However, you do need to offer reasons for your preferences. As you do so, it is important that you take a broad, collective view of who might benefit from the policies. This is a community-based project and you should take a community-based approach. That is, supporting one policy over another for selfish reasons should be discouraged. For example, if U-RIDE would make YOUR commute easier but make commuting harder for a large area around the University, you should not argue in support of U-RIDE *solely* because it favors you.

By signing below, you agree to adhere to these ground rules to the best of your abilities and to work to make this an engaging, informative, and enjoyable experience for everyone involved.

X _____

Date _____

Appendix F

Table F1.

Situation Pilot Script – Confederate 1

Item	Wording
1	The Minneapolis and Saint Paul Chambers of Commerce project a 12-16% increase in annual revenue for businesses along the light rail line.
2	University students that normally walk or bike to and around campus will enjoy the ease of the light rail, particularly during the winter and other times of inclement weather.
3	Washington Avenue and University Avenue are scheduled to become pedestrian malls – similar to the Nicollet mall – on either side of the light rail tracks. The space will allow for outdoor cafes and performance spaces, which will add an element of sophistication to nearby neighborhoods.
4	To open a store, owners must demonstrate that the surrounding area can support their business, specifically that there is sufficient parking. Having public transportation along Washington Avenue removes this requirement, making it easier to start a business.
5	Small, local businesses will have difficulty affording to stay along the light rail line. Neighborhoods stand to lose local institutions that have served and defined the community for decades.
6	Due to budgetary constraints, the State Legislature has proposed an 8% (\$7.2 million) reduction in University funding. That money will be redirected to ensure completion of the light rail in a timely fashion. The missing funding will either result in diminished services or increased tuition.
7	The sound and vibration from the light rail system may disturb residents who live closest to the tracks. Noise levels are expected to exceed Federal Transit Administration standards in 12 locations along the light rail line.
8	Easy access to the U of M campus, via the light rail, may compromise safety on campus. Students may face heightened risk of robbery and/or assault.

Table F2.

Situation Pilot Script – Confederate 2

Item	Wording
1	The light rail will provide convenient access to downtown Minneapolis and Saint Paul, connecting riders to the unique cultural, educational, and athletic opportunities available throughout the Twin Cities.
2	Reducing pollution in the Twin Cities will make the Mississippi River less polluted, possibly even safe to swim in.
3	Once the light rail is functioning, traffic on I-94 is expected to diminish by 17% between downtown St. Paul and Minneapolis.
4	New businesses near the light rail will generate an estimated \$72 million per year, reducing individual taxpayers' burden.
5	Non-light rail public transportation between the East and West Bank campuses will be severely restricted. The Campus Connector bus route will connect the East Bank to the St. Paul Campus but not service the West Bank. Students will either walk across the Mississippi River or pay to take the light rail.
6	Rising property values may make it impossible for less affluent individuals to afford the rent near the light rail. This poses a particular problem along Washington Avenue, near the East and West Bank campuses of the University of Minnesota.
7	The Washington Avenue Bridge will shut down during construction, limiting motor vehicle, bicycle, and foot traffic across the river between the East and West Bank campuses.
8	The light rail system will not connect to the Amtrak station, Greyhound station, or MegaBus stations. Thus, despite considerable fiscal investment, the Twin Cities mass transit system will not be fully integrated.

Appendix G

INSTRUCTIONS: For each of the statements below, please indicate the extent to which the statement is characteristic of you. Please use the following scale.

Extremely Uncharacteristic	Somewhat Uncharacteristic	Uncertain	Somewhat Characteristic	Extremely Characteristic
1	2	3	4	5

1. _____ I would prefer complex to simple problems.
2. _____ I like to have the responsibility of handling a situation that requires a lot of thinking.
3. _____ Thinking is not my idea of fun.
4. _____ I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
5. _____ I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.
6. _____ I find satisfaction in deliberating hard and for long hours.
7. _____ I only think as hard as I have to.
8. _____ I prefer to think about small, daily projects than long-term ones.
9. _____ I like tasks that require little thought once I've learned them.
10. _____ The idea of relying on thought to make my way to the top appeals to me.
11. _____ I really enjoy a task that involves coming up with new solutions to problems.
12. _____ Learning new ways to think doesn't excite me very much.
13. _____ I prefer my life to be filled with puzzles that I must solve.
14. _____ The notion of thinking abstractly is appealing to me.

Extremely Uncharacteristic	Somewhat Uncharacteristic	Uncertain	Somewhat Characteristic	Extremely Characteristic
1	2	3	4	5

15. _____ I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. _____ I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
17. _____ It's enough for me that something gets the job done; I don't care how or why it works.
18. _____ I usually end up deliberating about issues even when they do not affect me personally.



INSTRUCTIONS. Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6

1. _____ I think that having clear rules and order at work is essential for success.
2. _____ Even after I've made up my mind about something, I am always eager to consider a different opinion.
3. _____ I don't like situations that are uncertain.
4. _____ I dislike questions which could be answered in many different ways.
5. _____ I like to have friends who are unpredictable.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6

6. ____ I find that a well ordered life with regular hours suits my temperament.
7. ____ I enjoy the uncertainty of going into a new situation without knowing what might happen.
8. ____ When dining out, I like to go to places where I have been before so that I know what to expect.
9. ____ I feel uncomfortable when I don't understand the reason why an event occurred in my life.
10. ____ I feel irritated when one person disagrees with what everyone else in a group believes.
11. ____ I hate to change my plans at the last minute.
12. ____ I would describe myself as indecisive.
13. ____ When I go shopping, I have difficulty deciding exactly what it is I want.
14. ____ When faced with a problem I usually see the one best solution very quickly.
15. ____ When I am confused about an important issue, I feel very upset.
16. ____ I tend to put off making important decisions until the last possible moment.
17. ____ I usually make important decisions quickly and confidently.
18. ____ I have never been late for an appointment or work.
19. ____ I think it is fun to change my plans at the last moment.
20. ____ My personal space is usually messy and disorganized.
21. ____ In most social conflicts, I can easily see which side is right and which is wrong.
22. ____ I have never known someone I did not like.

- | | | | | | |
|----------------------|------------------------|----------------------|-------------------|---------------------|-------------------|
| Strongly
Disagree | Moderately
Disagree | Slightly
Disagree | Slightly
Agree | Moderately
Agree | Strongly
Agree |
| 1 | 2 | 3 | 4 | 5 | 6 |
23. ____ I tend to struggle with most decisions.
24. ____ I believe orderliness and organization are among the most important characteristics of a good student.
25. ____ When considering most conflict situations, I can usually see how both sides could be right.
26. ____ I don't like to be with people who are capable of unexpected actions.
27. ____ I prefer to socialize with familiar friends because I know what to expect from them.
28. ____ I think that I would learn best in a class that lacks clearly stated objectives and requirements.
29. ____ When thinking about a problem, I consider as many different opinions on the issue as possible.
30. ____ I don't like to go into a situation without knowing what I can expect from it.
31. ____ I like to know what people are thinking all the time.
32. ____ I dislike it when a person's statement could mean many different things.
33. ____ It's annoying to listen to someone who cannot seem to make up his or her mind.
34. ____ I find that establishing a consistent routine enables me to enjoy life more.
35. ____ I enjoy having a clear and structured mode of life.
36. ____ I prefer interacting with people whose opinions are very different from my own.
37. ____ I like to have a plan for everything and a place for everything.
38. ____ I feel uncomfortable when someone's meaning or intention is unclear to me.
39. ____ I believe that one should never engage in leisure activities.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6

40. _____ When trying to solve a problem I often see so many possible options that it's confusing.
41. _____ I always see many possible solutions to problems I face.
42. _____ I'd rather know bad news than stay in a state of uncertainty.
43. _____ I feel that there is no such thing as an honest mistake.
44. _____ I do not usually consult many different options before forming my own view.
45. _____ I dislike unpredictable situations.
46. _____ I have never hurt another person's feelings.
47. _____ I dislike the routine aspects of my work (studies).

INSTRUCTIONS: Now, we would like to ask you a few questions about public figures and the political system in general. Please respond as thoroughly as possible.

1. What job or political office does **Joe Biden** currently hold?
2. What job or political office does **John Roberts** currently hold?
3. What job or political office does **Gordon Brown** currently hold?
4. What job or political office does **Nancy Pelosi** currently hold?
5. Which political party currently has the most members in the Senate in Washington?

6. Which political party currently has the most members in the House of Representatives in Washington?

7. How long is the term of office for a U.S. senator?

8. Whose responsibility is it to nominate judges to the Federal Courts — the President, the Congress, or the Supreme Court?

INSTRUCTIONS. Read each of the following statements and decide how much you agree with each, according to your beliefs and experiences. Please respond according to the following scale:

Strongly Disagree					Neutral					Strongly Agree
1	2	3	4	5	6	7	8	9		

- _____ It is important to me that those who know me can predict what I will do.
 - _____ I want to be described by others as a stable, predictable person.
 - _____ The appearance of consistency is an important part of the image I present to the world.
 - _____ An important requirement for any friend of mine is personal consistency.
 - _____ I typically prefer to do things the same way.
 - _____ I want my close friends to be predictable.
 - _____ It is important to me that others view me as a stable person.
 - _____ I make an effort to appear consistent to others
 - _____ It doesn't bother me much if my actions are inconsistent.
-
-

INSTRUCTIONS. Use the scale below to indicate your opinion of each statement by placing the corresponding scale number in the blank next to the statement.

Extremely Uncharacteristic	Somewhat Uncharacteristic	Uncertain	Somewhat Characteristic	Extremely Characteristic
1	2	3	4	5

When thinking about discussions of political and community issues...

1. _____ different points of view need to be included and consulted in making decisions.
2. _____ what is important is that everyone's interests are represented, not whether they actually express them.
3. _____ everyone should have an equal say when making important decisions that affect everyone.
4. _____ it is important to question, maybe even to change, the rules of discussion, not just follow them.
5. _____ listening to other people's views can broaden and enrich my own views.
6. _____ it is important that we try to put ourselves in the place of others, to know how they feel about important decisions.
7. _____ disagreements are to be expected; what really matters is that we continue to cooperate with one another in making decisions.
8. _____ what is important is that you get your say, not that you get your way.



INSTRUCTIONS. Think about recent discussions you've had about political or community issues. Use the scale below to indicate how frequently you did the action described. Place your answer on the line next to the item.

Never				Half the time				Always
0	1	2	3	4	5	6	7	8

1. _____ I want to understand other people's reasons for holding beliefs different than mine.
2. _____ I bring up my values when I discuss political and community issues.
3. _____ I participate in discussions with people who have very different views from my own.
4. _____ When people have different viewpoints from me, I try to look at things from their perspectives.
5. _____ As long as I get a say in things, I go along with decisions even if I don't get my way.
6. _____ I come out of the discussions better informed about the issues that were discussed.
7. _____ The discussions I participate in end with a plan of action for changing things.



INSTRUCTIONS. Finally, we would like you to give us a little information about yourself.

1. What is your age? _____

2. What is your gender (circle one)? M F

3. Please indicate your race/ethnicity (circle one)
 1. Latino/Hispanic
 2. Black/African-American
 3. Asian/Asian-American
 4. White/Caucasian
 5. Native American
 6. Other _____

4. Is English your first language? Yes No

5. Make a check mark next to your total income (yours, not your parents').
 1. ___ Less than \$20,000
 2. ___ \$20,000 - \$39,999
 3. ___ \$40,000 - \$59,999
 4. ___ \$60,000 - \$79,999
 5. ___ \$80,000 - \$99,999
 6. ___ \$100,000 or greater

6. Not counting college credit earned in high school, how many semesters have you been on a college campus? Two semesters = 1 year

7. On average, how days per week do you commute? That is, how many days per week do you leave your residence to go to class, work, and internship, volunteering, etc.?

8. On average, **how many days per week** do you commute by each of the following methods?
 1. walking only: _____ days per week
 2. riding a bicycle (non-motorized): _____ days per week
 3. taking the bus or light rail: _____ days per week
 4. driving a car, motorcycle, or moped: _____ days per week

Appendix H

INSTRUCTIONS. Use the scale below to indicate your opinion of each statement by placing the corresponding scale number in the blank next to the statement.

- | Strongly
Disagree | | | Neither
Agree nor
Disagree | | | Strongly
Agree |
|--|---|---|----------------------------------|---|---|-------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. _____ I encountered multiple points of view. | | | | | | |
| 2. _____ I was provided with substantive reasons to support the Lightrail proposal. | | | | | | |
| 3. _____ I was provided with substantive reasons to oppose the Lightrail proposal. | | | | | | |
| 4. _____ I feel that I actively evaluated the information presented to me. | | | | | | |
| 5. _____ I had an equal say in the discussion. (<i>deliberation only</i>) | | | | | | |
| 6. _____ I provided reasons for my preferences. (<i>deliberation only</i>) | | | | | | |
| 7. _____ Other participants gave reasons for their preferences. (<i>deliberation only</i>) | | | | | | |
| 8. _____ I listened respectfully when others voiced their opinion. (<i>deliberation only</i>) | | | | | | |
| 9. _____ I felt that my opinions were respected. (<i>deliberation only</i>) | | | | | | |
| 10. _____ I felt accountable to other participants. (<i>deliberation only</i>) | | | | | | |
| 11. _____ I felt that the other participants felt accountable to me. (<i>deliberation only</i>) | | | | | | |
| 12. _____ I tried to be careful and thoughtful about the matter at hand. (<i>deliberation only</i>) | | | | | | |
| 13. _____ The other participants seemed like they were being careful and thoughtful about the matter at hand. (<i>deliberation only</i>) | | | | | | |

INSTRUCTIONS. Circle the answer that best describes how you learned about URIDE

I learned about the positive aspects in one booklet, then the negative aspects in another.	I learned about the negative aspects in one booklet, then the positive aspects in another	I learned about the positive and negative aspects in one booklet
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INSTRUCTIONS. Below are a series of questions about your views on U-RIDE. Please respond to each using the scales provided. There is no right or wrong answer, and your first responses are usually the most accurate.

1. Think about your evaluation of U-RIDE. Considering only the favorable aspects of U-RIDE and ignoring the unfavorable aspects, how favorable is your evaluation of U-RIDE?

Not at all favorable Slightly favorable Quite favorable Extremely favorable

2. Think about your evaluation of U-RIDE. Considering only the positive aspects of U-RIDE and ignoring the negative aspects, how positive is your evaluation of U-RIDE?

Not at all positive Slightly positive Quite positive Extremely positive

3. Think about your evaluation of U-RIDE. Considering only the beneficial aspects of U-RIDE and ignoring the harmful aspects, how beneficial is U-RIDE?

Not at all beneficial Slightly beneficial Quite beneficial Extremely beneficial

4. Think about your evaluation of U-RIDE. Considering only the unfavorable aspects of U-RIDE and ignoring the favorable aspects, how unfavorable is your evaluation of U-RIDE?

Not at all unfavorable Slightly unfavorable Quite unfavorable Extremely unfavorable

5. Think about your evaluation of U-RIDE. Considering only the negative aspects of U-RIDE and ignoring the positive aspects, how negative is your evaluation of U-RIDE?

Not at all negative Slightly negative Quite negative Extremely negative

6. Think about your evaluation of U-RIDE. Considering only the harmful aspects of U-RIDE and ignoring the beneficial aspects, how harmful is U-RIDE?

Not at all harmful Slightly harmful Quite harmful Extremely harmful

INSTRUCTIONS. We would like to know what information you remember from the material on U-RIDE. Please use the boxes below to record information you recall being presented, writing only one aspect or consequence of the proposal in each box.

1.

2.

3.

4.

5.

6.

7.

8.

9.

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10.

11.

12.

13.

14.

15.

16.

17.

- if you require additional boxes, please let the experimenter know -

INSTRUCTIONS. We would now like you to indicate how you think and feel about U-RIDE. Please indicate your thoughts and feelings by circling the appropriate number for each scale.

1. Implementing U-RIDE is:

Negative								Positive
1	2	3	4	5	6	7	8	9
Bad								Good
1	2	3	4	5	6	7	8	9
Undesirable								Desirable
1	2	3	4	5	6	7	8	9
Pleasant								Unpleasant
1	2	3	4	5	6	7	8	9

2. Considering implementing U-RIDE makes me feel:

Bored								Excited
1	2	3	4	5	6	7	8	9
Annoyed								Satisfied
1	2	3	4	5	6	7	8	9
Happy								Sad
1	2	3	4	5	6	7	8	9
Anxious								Relaxed
1	2	3	4	5	6	7	8	9

3. When I think about implementing U-RIDE, I think of it as:

Harmful								Beneficial
1	2	3	4	5	6	7	8	9
Foolish								Wise
1	2	3	4	5	6	7	8	9
Healthy								Unhealthy
1	2	3	4	5	6	7	8	9
Unsafe								Safe
1	2	3	4	5	6	7	8	9

INSTRUCTIONS. Please answer the following questions using the scales provided.

1. I find myself having strong emotions for and against U-RIDE.

-5	-4	-3	-2	-1	0	1	2	3	4	5
Strongly Disagree										Strongly Agree

2. I am feeling torn between supporting and opposing U-RIDE.

-5	-4	-3	-2	-1	0	1	2	3	4	5
Strongly Disagree										Strongly Agree

3. I am feeling conflict when deciding whether to support U-RIDE.

-5	-4	-3	-2	-1	0	1	2	3	4	5
Strongly Disagree										Strongly Agree

4. I am experiencing indecision about the issue.

-5	-4	-3	-2	-1	0	1	2	3	4	5
Strongly Disagree										Strongly Agree

5. I have mixed reactions to the proposal.

-5	-4	-3	-2	-1	0	1	2	3	4	5
Strongly Disagree										Strongly Agree



INSTRUCTIONS. Next, we would like you to answer some questions about the way you're thinking about U-RIDE.

1. How certain are you that you know what your true attitude about U-RIDE really is?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9

2. How certain are you that the attitude you expressed toward U-RIDE really reflects your true thoughts and feelings?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9

3. To what extent is your true attitude toward U-RIDE clear in your mind?

Not at all clear								Very clear
1	2	3	4	5	6	7	8	9

4. How certain are you that the attitude you just expressed toward U-RIDE is really the attitude you have?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9

5. How certain are you that your attitude toward U-RIDE is the correct attitude to have?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9

6. To what extent do you think other people should have the same attitude about U-RIDE as you?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9

7. How certain are you that of all possible attitudes one might have toward U-RIDE, your attitude reflects the right way to think and feel about the issue?

Not at all certain								Very certain
1	2	3	4	5	6	7	8	9



INSTRUCTIONS. Finally, we would like to ask you a few questions about your experience.

1. How much information do you feel you have about U-RIDE?

Very Little						A Great Deal
1	2	3	4	5	6	7

2. How knowledgeable do you feel about U-RIDE?

Not at all						Extremely
Knowledgeable						Knowledgeable
1	2	3	4	5	6	7

3. How well informed do you feel about U-RIDE?

Completely						Completely
Uninformed						Informed
1	2	3	4	5	6	7

4. If you had to write a list of everything you knew about U-RIDE, how long would it be?

Very Short						Very Long
1	2	3	4	5	6	7

5. How much have you thought about U-RIDE?

Very Little						A Great Deal
1	2	3	4	5	6	7

6. How carefully have you thought about U-RIDE?

Not at all						Extremely
Carefully						Carefully
1	2	3	4	5	6	7

7. How much time have you spent thinking about U-RIDE?

Very Little						A Great Deal
1	2	3	4	5	6	7

