Making policy information relevant to citizens: a model of deliberative mini-publics, applied to the Citizens’ Initiative Review

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Research on deliberative mini-publics has neglected two topics: the information on which deliberation is based, and communication techniques by which mini-publics convey their findings to the public. This article sheds light on those two topics, by showing that a criterion for evaluating information – intersubjective relevance – structures information within mini-publics and information that mini-publics share with the wider public. The article explains how information satisfying that criterion can foster intersubjectivity, deliberation and desirable outcomes of deliberation. The article proposes a theoretical model to explain those associations, and presents evidence from the Citizens’ Initiative Review, lending support for the model.

key words participatory governance • participatory democracy • democratic deliberation • political communication


Introduction

Deliberative-democratic reformers have introduced mini-publics to reinvigorate politics, but theoretical models of mini-publics remain incomplete (Fung, 2007; Goodin and Dryzek, 2006; Smith, 2009). Articles in Policy and Politics have addressed mini-public processes such as citizens’ juries (Cheyne and Comrie, 2002; Smith and Wales, 1999; Thompson and Hoggett, 2001; Van Stokkom, 2005) and Citizens’ Initiative Reviews (CIRs) (Fuji Johnson et al, 2016). Mini-publics gather representative groups of citizens to deliberate on policy and, often, disseminate findings to foster deliberation among the populace (Gastil et al, 2014). Mini-publics thus link small-scale citizen deliberation to the broad public’s political decision making (Goodin and Dryzek, 2006).

In mini-public research (for example, Grönlund et al, 2014) two topics have received little attention: the role of information in deliberation, and mini-publics’ techniques for communicating information to the public. Those issues are addressed in this article by examining a standard for evaluating mini-public information: intersubjective
relevance. In this article, I describe this standard and techniques for implementing it in practice. To explain how information satisfying this standard could foster deliberation and beneficial deliberative outcomes, I propose a theoretical model. Finally, I assess the model with empirical findings concerning mini-publics’ communications to the populace.

Information in deliberation

Theorists of deliberation contend that citizen deliberation produces new knowledge (for example, Landemore, 2013). Information forming the basis for that knowledge is thus central to many deliberative theories (for example, Fishkin, 2009; Gastil, 2000). Theorists’ criteria for evaluating deliberative information include diversity and relevance (Cheyne and Comrie, 2002; Fuji Johnson et al, 2016; Smith, 2009; Smith and Wales, 1999; Thompson and Hoggett, 2001; Van Stokkom, 2005). Deliberative theorists have rarely detailed characteristics of or standards for deliberative information, however.

Smith and Wales (1999), Cheyne and Comrie (2002), Van Stokkom (2005), Fuji Johnson and colleagues (2016), and Thompson and Hoggett (2001) all characterised information as an important input to citizens’ deliberation, while Van Stokkom (2005, 399) highlighted citizen-participants’ ‘learning motive’. Crozier (2008, 8) described ‘flows’ of policy information from which citizens construct meaning. For Cheyne and Comrie (2002, 480), election quality depended on ‘the quality of public information’ voters receive. Fuji Johnson and colleagues (2016) explained how mini-publics improve such information by distributing ballot-measure evaluations to voters. Theorists have also discussed information’s relationship to deliberative outcomes: Crozier (2008) and Smith and Wales (1999) agreed that citizens may undergo personal transformation by participating in information-based governance. Another information-based aspect of deliberation – citizens’ sense-making (Gastil et al, 2016) – has not been addressed in this journal, however.

Further, theorists have proposed criteria for evaluating deliberative information. These include diversity (Thompson and Hoggett, 2001), accuracy (Fuji Johnson et al, 2016), and relevance (Cheyne and Comrie, 2002; Fuji Johnson et al, 2016; Smith and Wales, 1999).

This article concentrates on relevance for two reasons. First, mini-public theorists have associated relevance with intersubjectivity (Smith and Wales, 1999; Smith, 2009). This inquiry extends research on that association. Second, since mini-public researchers have proposed techniques for implementing their relevance standard in practice, this article illuminates the relationship between participatory-governance theory and practice. The context having been outlined, I now discuss pertinent prior literature.

Relevance and intersubjectivity

Theorists define ‘relevance’ as the relatedness of information to some entity (Schamber et al, 1990), and distinguish objective from subjective relevance (Harter, 1992). Objective relevance concerns information’s relationship to an entity other than the information user (Harter, 1992). Subjective relevance concerns information’s relationship to characteristics of the user, such as the user’s information need (Schamber et al, 1990).
Intersubjectivity is the other theme of this article. In deliberative theorists’ accounts of intersubjectivity (for example, Habermas, 1996; Niemeyer and Dryzek, 2007; Smith, 2009) three types of intersubjectivity can be identified. One, ‘mutual understanding’ (Smith and Wales, 1999, 298), concerns deliberative-participants’ knowledge of each other’s views. Another, which I call common-response, involves multiple individuals’ similar cognitive experiences of an entity, without the individuals’ interacting with each other, as in citizens’ shared recognition of the legitimacy of laws enacted through deliberative procedures (Habermas, 1996). In a third, which I call mediated-view, shared knowledge of others’ perspectives mediates individuals’ views about the object of deliberation. Thus mini-public participants’ perspectives on evidence are mediated by knowledge of how fellow participants ‘understand and interpret this evidence’ (Smith, 2009, 94).

Scholars associate relevance with intersubjectivity on the basis of individuals’ shared cognitive structures (for example, Schutz, 1970; Sperber and Wilson, 2002). In an example concerning common-response intersubjectivity, Pennington and Hastie (1992) showed that a shared narrative cognitive schema caused individuals acting as jurors, who had not deliberated together, to judge evidentiary information in story form to be more relevant than non-narrative information.

Theorists of deliberation frequently discuss relevance as a standard for assessing deliberative information (for example, Fishkin, 2009; Habermas, 1996). Deliberative theorists’ relevance standards fall into three categories: objective, neutral and subjective. Karpowitz and Raphael (2014, 69) used objective relevance in contending that information in citizen deliberation should be ‘the best available knowledge relevant to the issue at hand’. Several deliberative theorists employ what I call ‘neutral relevance’ (for example, Habermas, 1996; Smith and Wales, 1999), meaning that ‘relevance’ is used without stating whether the information relates to information-users (that is, subjective relevance) or another entity (that is, objective relevance). Thus, Smith and Wales (1999, 301) use neutral relevance in describing ‘relevant information and witnesses’.

**Intersubjectively relevant information**

By contrast, some mini-public theorists have advanced subjective relevance standards (Fishkin, 2009; Gastil, 2000; Mathews, 1999). Moreover, these standards are intersubjective: they concern information’s relationship to characteristics shared by many citizens. Thus Fishkin’s (2009, 35) information standards include ‘relevance to [participants’] assessment of the arguments for and against each possible [policy] alternative’. This standard is intersubjective: it concerns information’s relationship to citizen-participants’ collective evaluative activity.

Theorists of National Issues Forums (NIF) have also applied an intersubjective relevance standard (Mathews, 1999; Melville et al, 2005). Mathews (1999, 18) claims that ‘[w]henever people fail to see what they care about reflected in the coverage of politics, policy issues naturally seem less relevant’. NIF information thus characterises issues ‘in a way that reflects [people’s] concerns and their way of thinking’ (Melville et al, 2005, 42). This standard is intersubjective: it involves information’s association with citizens’ shared characteristics. Further, Melville and colleagues (2005, 42) argue that intersubjectively relevant information (IRI) increases citizens’ willingness...
to deliberate: ‘People are more likely to engage in forum discussions if what is most important to them is clearly reflected in the way the issue is named.’

These accounts suggest that IRI should foster mutual-understanding and mediated-view intersubjectivity. IRI should promote mutual-understanding intersubjectivity by increasing citizens’ motivation to deliberate (Melville et al, 2005) and share their perspectives (Smith and Wales, 1999). IRI should encourage mediated-view intersubjectivity by highlighting participants’ shared concerns (Melville et al, 2005) and aspects of issues participants ‘believe to be relevant’ (Fishkin, 2009, 34), while participants’ mutual understanding mediates their reflections on these issues and concerns.

Gastil (2000, 147) has also advanced intersubjective relevance standards for information which mini-publics distribute to the populace: ‘By showing voters candidates’ positions…[mini-publics] help the electorate compare candidates using objective criteria with direct relevance to voters’ policy interests.’ This standard is intersubjective in that it concerns information’s relationship to voters’ shared interests. Further, IRI produced by mini-publics should foster common-response intersubjectivity because most citizens receiving such information engage ‘in a relatively brief (and possibly private) deliberation within their own minds’ (Gastil et al, 2014, 63). Most voters should have similar cognitive experiences of mini-public information due to the information’s congruence with voters’ shared characteristics, but without those experiences’ being mediated by mutual understanding that could arise from interpersonal deliberation.

Moreover, techniques exist for implementing intersubjective relevance in mini-public practice. Thus Kadlec and Friedman (2010, 81) recommend ‘using qualitative research to explore the natural language’ and ‘values’ that ‘nonexperts use to talk about an issue’. Pennington and Hastie (1992) employed experiments to determine what constituted IRI for jurors. Further, CIR procedures encourage participants to engage in perspective-taking vis-à-vis the public and deliberate about what information is most ‘important’ for that public (Oregon Citizens’ Initiative Review, 2012, 5, 15; Gastil et al, 2014).1

Practices for communicating IRI to deliberating citizens have also been described. NIF informational booklets frame policies with scenarios depicting policies’ objectives and actual consequences (Mathews, 1999), while CIR participants write a ballot-measure evaluation (‘citizens’ statement’) including factual findings and pro/con arguments (Gastil, 2014, 63).

IRI research

The practical implementation of intersubjective relevance prompts empirical questions: What information has been deemed intersubjectively relevant in mini-publics? Do citizens find such information relevant? How does IRI affect citizens’ deliberations and deliberative outcomes? What explains those effects?

To explore these questions, I developed a theoretical model of IRI in citizens’ deliberations. The model is explanatory and predictive, positing mechanisms accounting for IRI’s contribution to deliberative outcomes, and asserting that citizens’ reading IRI will activate those mechanisms and increase the likelihood of those outcomes’ future occurrence. Aspects of the model were tested in research on
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the CIR and using variables related to the CIR. In this article, I focus on how IRI produced by mini-publics may affect the populace.

Model of IRI

The model (Figure 1) predicts that reading IRI will trigger dynamics of identification and social cognition that will facilitate deliberation and promote beneficial deliberative outcomes. Since many citizens process mini-public information in a ‘deliberation within their own minds’ (Gastil et al, 2014, 63), I focus on intrapersonal deliberation (Goodin, 2003). Though I refer to the object of deliberation as a policy, in practice that object is often a candidate for office.

Figure 1: Intersubjectively relevant information in deliberation

The model accounts for two kinds of deliberative outcomes: changes to knowledge and judgements, and personal transformation. Framing, reflection and sense-making processes are predicted to mediate associations between reading IRI and those outcomes.

In the model, reading IRI initiates dynamics of identification and social cognition. Because IRI matches citizens’ characteristics, citizens should perceive IRI as familiar and so identify (Van Knippenberg, 2000) with it or the issue it describes (Schauppenlehner-Kloyber and Penker, 2016). Since identification is ‘associated with the willingness to exert effort’ towards (Van Knippenberg, 2000, 360), and increased motivation to engage with, the target of identification (Schauppenlehner-Kloyber and Penker, 2016), identification should heighten citizens’ motivation to reflect on the information.

In addition, social-cognitive theories (for example, Pennington and Hastie, 1992) suggest that reading IRI – such as descriptions of a policy’s objectives – will activate in citizens’ minds cognitive structures, such as a schema related to proposed actions’ objectives. Schema-activation should encourage the making of inferences about objectives and of judgements about the probability of realising those objectives (components of knowledge and judgements, Figure 1).

Those cognitive structures form contexts or frames (Scheufele, 2000) that make new information intelligible and aid information-apprehension. Like identification, this apprehension is expected to facilitate reflection about the information (Eveland,
Because reflection fosters learning (Cho et al., 2009), this reflection should increase policy knowledge (part of knowledge and judgements, Figure 1).

In the model, knowledge and judgements include beliefs, among them beliefs about a policy’s effectiveness. Network theories of cognition (for example, Baden, 2010) suggest that cognitive structures’ framing activity involves retrieving from memory beliefs conceptually similar to those structures. Cognitive structures and retrieved beliefs function together as frames, enabling learning and encouraging formation of new beliefs (Scheufele and Tewksbury, 2007). Framing and reflection should thus promote knowledge gains and generation of new beliefs about a policy (both components of knowledge and judgements, Figure 1), and mediate associations between reading IRI and knowledge and beliefs.

Moreover, reading IRI should foster policy sense-making (Baden and de Vreese, 2008). During sense-making, individuals employ information instrumentally to pursue goals (Dervin and Frenette, 2001). The citizen making an electoral decision begins in a state of uncertainty and disorientation, due to the frequent dearth of campaign information and most citizens’ low levels of ‘political skills’ and ‘interest in campaigns’ (Gastil, 2000, 172). By acquiring information needed to accomplish the decision-making task, the citizen journeys to a state of orientation and confidence (Dervin and Frenette, 2001). Sense-making (Figure 1) thus encompasses orientation vis-à-vis policy information and knowledge confidence.

Reading IRI should encourage sense-making, as framing and reflection increase policy knowledge (part of knowledge and judgements, Figure 1), framing helps citizens orient themselves vis-à-vis policy information (part of sense-making, Figure 1), and knowledge and orientation boost citizens’ confidence in their understanding of that information (part of sense-making, Figure 1). Thus framing, reflection and knowledge gains should mediate the association between reading IRI and sense-making.

Also, reading IRI should encourage personal transformation, particularly regarding political efficacy. Respecting decision-specific efficacy, framing-enhanced orientation vis-à-vis policy information and greater knowledge confidence (both part of sense-making, Figure 1) should increase citizens’ confidence in their policy decision making. Further, increases in the absolute magnitude of policy attitudes or effectiveness beliefs (both elements of knowledge and judgements, Figure 1) should be positively associated with decision-making confidence.

Moreover, reading IRI may enhance general political efficacy (Balch, 1974). One who feels confident making a policy choice, after reflecting on that confidence, may experience more general political empowerment. Accordingly, framing, reflection, knowledge and judgements and sense-making may mediate associations between reading IRI and personal transformation (Figure 1).

**Citizens’ Initiative Review**

Evidence regarding IRI reported here stems from research on CIRs held from 2010 through 2014 (Gastil et al., 2015). A CIR gathers a stratified random sample of 18 to 24 citizens who engage in facilitated deliberation about a ballot measure for up to one week (Fuji Johnson et al., 2016). Participants then write a ballot-measure evaluation (citizens’ statement) which all voters receive to inform their voting decision (Gastil et al., 2016).
Evidence from the CIR

Empirical research on the CIR yielded the following evidence about IRI.

Empirical content of IRI

Using a coding scheme (Richards, 2016) based largely on frequently occurring characteristics in 2010 Oregon CIR deliberation transcripts and citizens’ statements, the author content-analysed nine CIR citizens’ statements produced from 2010 through 2014. Twelve characteristics – eight topics and four communicative functions – were observed in all statements. The topics were a measure’s goals (policy objectives) and actual effects (effectiveness, fiscal effects, and unintended consequences), the use of a measure to achieve goals (means), the policy status quo (existing laws), pertinent data (facts or evidence) and values. The functions were description, evaluation, persuasion, and the application of a measure to hypothetical facts. Those characteristics, appearing in statements written by nine different citizen-samples, indicate what CIR participants believed to be IRI for their publics.

Survey evidence of intersubjective relevance

Voter surveys provide evidence of the public’s judgement of the relevance of information in CIR citizens’ statements. More than half of survey-experiment respondents rated 2014 Oregon CIR citizens’ statements as ‘completely’ or ‘mostly’ relevant (Gastil et al, 2016, 184). More than 65 per cent of Oregon respondents rated citizens’ statements as at least ‘somewhat important’ to their voting decision in 2010 and as at least somewhat ‘helpful’ in 2012 (Gastil et al, 2014, 67–68; Knobloch et al, 2014, 7), where ‘importance’ and ‘helpfulness’ measure relevance to the user’s task (Ingwersen and Järvelin, 2005). These results reflect common-response intersubjectivity regarding the relevance of CIR information.

Other IRI-related effects

Evidence also associates reading CIR citizens’ statements with deliberative consequences. Reading such statements significantly increased survey-experiment respondents’ measure-pertinent knowledge and knowledge confidence (Gastil and Knobloch, 2010; Gastil et al, 2015; Knobloch et al, 2014). Regarding personal transformation, reading citizens’ statements boosted some usability-test respondents’ voting confidence, and, in survey experiments, reading such statements was associated with a significant increase in political engagement: willingness to ‘mark [one’s] ballot’ (Gastil et al, 2016, 186).

Yet these studies did not examine relationships between particular IRI elements and deliberation or deliberative outcomes. To explore those relationships, the author conducted two experiments.

Evidence from studies of CIR-related variables

Before being conducted online on Qualtrics in 2014 at a US university, the experiments were approved by an institutional review board. Hypotheses and
research questions informed the experimental design. Subjects were undergraduates (Experiment 1: \( N = 194 \), 49 percent female, median age = 21; Experiment 2: \( N = 309 \), 50.2 percent female, median age = 20).

Subjects who gave informed consent first completed a pre-questionnaire measuring prior political knowledge (of the U.S. federal government), and then were shown the stimuli. Subjects were randomly assigned to control or treatment conditions (Table 1). Control stimuli were a brief summary (‘ballot title’), full text and a longer summary (‘explanatory statement’) of a fictional ballot measure. Treatment stimuli were control stimuli plus IRI elements.

<table>
<thead>
<tr>
<th>Table 1: Experimental conditions and stimuli</th>
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</thead>
<tbody>
<tr>
<td><strong>Experiment</strong></td>
</tr>
</tbody>
</table>
| 1 & 2 | Control | Experiment 1: \( n = 47 \); Experiment 2: \( n = 38 \). | Longer summary (‘Explanatory statement’) of measure | 'New Section 19 would limit the number of years that one person may serve in various State elected bodies…'
| 1 & 2 | Policy Objectives (‘O’) | Experiment 1: \( n = 48 \); Experiment 2: \( n = 39 \). | Explanatory statement + Description of measure’s goals | 'The purpose of this measure is to make public officials act in the public’s interest more often.'
| 1 | Policy Effectiveness (‘E’) | \( n = 51 \) | Explanatory statement + Description of likelihood that measure’s policy will accomplish goals | 'But research by social scientists shows mixed results about whether term limits achieve their purpose.'
| 1 | Policy Objectives + Effectiveness (‘OE’) | \( n = 48 \) | Explanatory statement + Description of measure’s goals + Description of likelihood that measure’s policy will accomplish goals | See Conditions ‘O’ and ‘E’.
| 2 | Unintended Consequences (‘U’) | \( n = 39 \) | Explanatory statement + Description of unforeseen outcomes of measure’s policy | 'Some research by social scientists shows that term limits are linked to more corruption…'
| 2 | Application-Narrative (‘A’) | \( n = 38 \) | Explanatory statement + Story illustrating operation of measure’s policy | 'In the 2021 election, imagine that two new candidates, Helen Choy and Jill Smith, decide to run for the seat that [incumbent legislator] Doe is vacating…'
| 2 | Policy Objectives + Unintended Consequences (‘OU’) | \( n = 43 \) | Explanatory statement + Description of measure’s goals + Description of unforeseen outcomes of measure’s policy | See Conditions ‘O’ and ‘U’.
IRI elements tested in the experiments were descriptions of the measure’s objectives, the likely effectiveness and unintended consequences of the measure’s policy, the application of the measure’s policy to hypothetical facts, and narrative. These elements were selected because research suggested that cognitive processes and structures linked to these elements were active in citizens’ minds during deliberations (Richards, 2016; Pennington and Hastie, 1992). Elements were allotted to experiments (Table 1) for purposes of element complementarity (for example, objectives-effectiveness and application-narrative6) and replication of results.

After reading the stimuli, each subject completed a post-questionnaire7 which in both experiments contained manipulation checks, items measuring ballot-measure knowledge, knowledge confidence, beliefs, attitude and voting decision about the measure, and voting confidence, as well as demographic items. The Experiment-2 post-questionnaire also included sense-making and political-efficacy items.

Path analysis (Blunch, 2013)8 yielded four findings9 that were similar in both experiments. Regarding learning (part of knowledge and judgements, Figure 1), reading combined descriptions of the measure’s objectives and actual effects of the measure’s policy had positive and significant net indirect associations with ballot-measure knowledge (Experiment 1: Treatment OE vis-à-vis Control with legal knowledge: $b = 0.420, p <0.001$10 [Table 2]; Experiment 2: Treatment OU vis-à-vis Control with pure legal knowledge : $b = 0.301, p = 0.004$; Treatment OA vis-à-vis Control with pure legal knowledge: $b = 0.382, p = 0.002$; Treatment OUA vis-à-vis Control with pure legal knowledge: $b = 0.416, p = 0.001$ [Table 3]).
Results did not consistently indicate what contributed to these knowledge gains. In Experiment 1, reflection significantly mediated the specific indirect association between reading only the policy-objectives description and legal knowledge (Treatment O vis-à-vis Control: $b = 0.158$, $p = 0.016$) (Table 4), and beliefs about the measure’s objectives significantly mediated specific indirect associations between both conditions that read the policy-objectives description and legal knowledge (Treatment O vis-à-vis Control: $b = 0.179$, $p = 0.012$; Treatment OE vis-à-vis Control: $b = 0.162$, $p = 0.015$) (Table 4). Yet in Experiment 2, the only specific indirect association reaching the protected significance level was that between reading combined descriptions of the measure’s objectives, application-scenario and unintended consequences, and pure legal knowledge, mediated by reflection (Treatment OUA: $b = 0.223$, $p = 0.005$) (Table 5).

Another similar finding concerned sense-making, measured by knowledge confidence in Experiment 1 and sense-making cognition (incorporating both knowledge confidence and orientation to information) in Experiment 2. Reading the policy-objectives description alone, and reading combined descriptions of the measure’s objectives and actual effects of the measure’s policy, had positive and significant indirect associations with sense-making (in Experiment 1: net indirect association of Treatment O vis-à-vis Control with knowledge confidence: $b = 0.332$, $p = 0.014$ [Table 2]; specific indirect association of Treatment O vis-à-vis Control with knowledge confidence, mediated by policy-objectives belief: $b = 0.228$, $p =
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0.002; specific indirect association of Treatment OE vis-à-vis Control with knowledge confidence, mediated by policy-objectives belief: $b = 0.204$, $p = 0.003$ [Table 6]; in Experiment 2, all net indirect associations with sense-making cognition: Treatment O vis-à-vis Control: $b = 0.142$, $p = 0.0066$; Treatment OU vis-à-vis Control: $b = 0.188$, $p = 0.005$; Treatment OA vis-à-vis Control: $b = 0.266$, $p < 0.001$; Treatment OUA vis-à-vis Control: $b = 0.295$, $p < 0.001$ [Table 3].

Table 3: Experiment 2: Associations between reading IRI and sense-making: cognition or legal knowledge: pure

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>Combined direct and net indirect associations</th>
<th>Direct association</th>
<th>Net indirect association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment O vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.221 (0.216) [0.074]</td>
<td>0.079 (0.208) [0.027]</td>
<td>0.142 (0.069) [0.047]##</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.336 (0.220) [0.112]</td>
<td>0.287 (0.206) [0.096]</td>
<td>0.050 (0.057) [0.017]</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.257 (0.217) [0.085]</td>
<td>0.266 (0.206) [0.088]</td>
<td>-0.010 (0.060) [-0.003]</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.259 (0.216) [0.090]</td>
<td>0.071 (0.204) [0.025]</td>
<td>0.188 (0.074) [0.065]##</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.205 (0.234) [0.065]</td>
<td>-0.061 (0.220) [-0.019]</td>
<td>0.266 (0.088) [0.084]##</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.177 (0.222) [0.059]</td>
<td>0.091 (0.205) [0.030]</td>
<td>0.086 (0.061) [0.028]</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
<td>Sense-making: Cognition</td>
<td>0.190 (0.220) [0.064]</td>
<td>-0.105 (0.215) [-0.036]</td>
<td>0.295 (0.088) [0.100]##</td>
</tr>
<tr>
<td>Treatment O vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.085 (0.210) [-0.029]</td>
<td>-0.248 (0.190) [-0.084]</td>
<td>0.163 (0.112) [0.055]</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.058 (0.222) [-0.020]</td>
<td>-0.222 (0.189) [-0.075]</td>
<td>0.164 (0.107) [0.056]</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.278 (0.225) [-0.093]</td>
<td>-0.384 (0.190) [-0.129]</td>
<td>0.106 (0.112) [0.036]</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.202 (0.213) [-0.071]</td>
<td>-0.503 (0.187) [-0.178]##</td>
<td>0.301 (0.112) [0.106]##</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.041 (0.234) [-0.013]</td>
<td>-0.423 (0.201) [-0.135]</td>
<td>0.382 (0.130) [0.122]##</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>-0.246 (0.224) [-0.083]</td>
<td>-0.434 (0.188) [-0.146]</td>
<td>0.188 (0.116) [0.063]</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
<td>Legal Knowledge: Pure</td>
<td>0.011 (0.222) [0.004]</td>
<td>-0.405* (0.197) [-0.139]</td>
<td>0.416 (0.127) [0.143]##</td>
</tr>
</tbody>
</table>

Note: Cell entries: unstandardised regression coefficients. Parentheses: standard errors. Brackets: standardised regression coefficients. + $p<0.1$, *$p<0.05$, **$p<0.01$, ## $p<0.0071$. 

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Table 4: Experiment 1: Specific indirect associations between reading IRI and legal knowledge, mediated by intrapersonal reflection or policy-objectives belief

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Mediator</th>
<th>Estimates</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment O vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.158 (0.065) [0.070]#</td>
<td>2.445</td>
<td>0.016</td>
</tr>
<tr>
<td>Treatment E vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.088 (0.057) [0.039]</td>
<td>1.539</td>
<td>0.127</td>
</tr>
<tr>
<td>Treatment OE vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.139 (0.063) [0.061]*</td>
<td>2.214</td>
<td>0.029</td>
</tr>
<tr>
<td>Treatment O vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.179 (0.070) [0.079]#</td>
<td>2.559</td>
<td>0.012</td>
</tr>
<tr>
<td>Treatment E vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.016 (0.038) [0.007]</td>
<td>0.414</td>
<td>0.680</td>
</tr>
<tr>
<td>Treatment OE vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.162 (0.065) [0.071]#</td>
<td>2.479</td>
<td>0.015</td>
</tr>
</tbody>
</table>


Table 5: Experiment 2: Specific indirect associations between reading IRI and legal knowledge: pure, mediated by intrapersonal reflection or policy-objectives belief

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Mediator</th>
<th>Estimates</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment O vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.081 (0.068) [0.028]</td>
<td>1.189</td>
<td>0.238</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.067 (0.068) [0.023]</td>
<td>0.990</td>
<td>0.326</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>-0.011 (0.067) [-0.004]</td>
<td>-0.158</td>
<td>0.875</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.159 (0.071) [0.056]*</td>
<td>2.238</td>
<td>0.028</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.213 (0.079) [0.068]**</td>
<td>2.705</td>
<td>0.009</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.115 (0.070) [0.039]</td>
<td>1.637</td>
<td>0.106</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
<td>Intrapersonal Reflection</td>
<td>0.223 (0.077) [0.077]##</td>
<td>2.906</td>
<td>0.005</td>
</tr>
<tr>
<td>Treatment O vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.040 (0.030) [0.013]</td>
<td>1.320</td>
<td>0.191</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.002 (0.003) [0.001]</td>
<td>0.792</td>
<td>0.431</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.000 (0.002) [0.000]</td>
<td>-0.157</td>
<td>0.876</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.037 (0.028) [0.013]</td>
<td>1.316</td>
<td>0.192</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.056 (0.041) [0.018]</td>
<td>1.376</td>
<td>0.173</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.004 (0.004) [0.001]</td>
<td>1.032</td>
<td>0.306</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
<td>Policy-Objectives Belief</td>
<td>0.066 (0.047) [0.023]</td>
<td>1.405</td>
<td>0.164</td>
</tr>
</tbody>
</table>

Note: Dependent variable: Legal knowledge: Pure. Cell entries: unstandardised regression coefficients. Parentheses: standard errors. Brackets: standardised regression coefficients. *p<0.05, **p<0.01, ## p<0.0071.
Framing may have contributed to these sense-making gains. In Experiment 1, as just described, for both groups exposed to the policy-objectives description, beliefs about the measure’s objectives significantly mediated specific indirect associations between reading IRI and increased sense-making in the form of knowledge confidence (Table 6). In Experiment 2, for the group that read combined descriptions of the measure’s objectives, application-scenario and unintended consequences, the mediating effect of beliefs about the measure’s objectives approached the protected significance threshold (specific indirect association of Treatment OUA vis-à-vis Control with sense-making cognition, mediated by policy-objectives belief: $b = 0.147$, $p = 0.011$) (Table 7). Thus a cognitive structure linked to policy objectives may have contextualised ballot-measure information (Baden, 2010; Scheufele, 2000) and facilitated sense-making.

The third similar finding concerned personal transformation. Reading combined descriptions of the measure’s objectives and actual effects of the measure’s policy had a positive and significant association with political efficacy. In Experiment 1, reading joint descriptions of the measure’s objectives and effectiveness had positive and significant net indirect (Treatment OE vis-à-vis Control: $b = 0.371$, $p = 0.002$) and combined direct and indirect associations (Treatment OE vis-à-vis Control: $b = 0.626$, $p = 0.002$) (Table 2) with voting confidence, a type of decision-specific efficacy.
In Experiment 2, reading combined descriptions of the measure’s objectives and application-scenario had positive and significant direct (Treatment OA vis-à-vis Control: \( b = 0.577, p < 0.001 \)) and combined direct and net indirect associations (Treatment OA vis-à-vis Control: \( b = 0.528, p = 0.005 \)) (Table 8) with general political-information efficacy (Kaid et al, 2011). Results of neither experiment indicated the mechanisms contributing to these outcomes, however. In this research, estimates of specific indirect associations are interpreted as evidence of those mechanisms, yet for both experiments, estimates of specific indirect associations between reading IRI and political efficacy did not reach the protected significance level.

Table 8: Experiment 2: Associations between reading IRI and political-information efficacy: general

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Combined direct and net indirect associations</th>
<th>Direct association</th>
<th>Net indirect association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment O vs. Control</td>
<td>0.050 (0.192) [0.017]</td>
<td>0.058 (0.164) [0.019]</td>
<td>-0.007 (0.111) [-0.003]</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
<td>0.163 (0.194) [0.054]</td>
<td>0.098 (0.164) [0.033]</td>
<td>0.065 (0.110) [0.022]</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
<td>0.464 (0.198) [0.153]*</td>
<td>0.262 (0.165) [0.087]</td>
<td>0.202 (0.115) [0.067]+</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
<td>0.286 (0.189) [0.100]</td>
<td>0.251 (0.162) [0.087]</td>
<td>0.035 (0.112) [0.012]</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
<td>0.528 (0.202) [0.166]##</td>
<td>0.577 (0.173) [0.182]##</td>
<td>-0.049 (0.123) [-0.015]</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
<td>0.304 (0.192) [0.100]</td>
<td>0.225 (0.165) [0.074]</td>
<td>0.078 (0.112) [0.026]</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
<td>0.003 (0.187) [0.001]</td>
<td>0.124 (0.168) [0.042]</td>
<td>-0.121 (0.121) [-0.041]</td>
</tr>
</tbody>
</table>

Note: Dependent variable: Political-information efficacy: General. Cell entries: unstandardised regression coefficients. Parentheses: standard errors. Brackets: standardised regression coefficients. + p<0.1, *p<0.05, ## p<0.0071.

The fourth consistent finding concerned beliefs about the measure’s effectiveness (part of knowledge and judgements, Figure 1). In both experiments, reading combined descriptions of the measure’s objectives and actual effects of the measure’s policy had a positive and significant specific indirect association with beliefs about the measure’s effectiveness, mediated by beliefs about the measure’s objectives (Experiment 1: Treatment OE vis-à-vis Control: \( b = 0.263, p = 0.003 \) [Table 9]; Experiment 2: Treatment OA vis-à-vis Control: \( b = 0.231, p = 0.001; \) Treatment OUA vis-à-vis Control: \( b = 0.273, p < 0.001 \) [Table 10]). Thus activating a cognitive structure linked to policy objectives may have spurred the generation of beliefs about the measure’s effectiveness (Baden, 2010; Schuëfele and Tewksbury, 2007).

Nonetheless, neither experiment yielded evidence that knowledge mediated associations between reading IRI and deliberative outcomes. Moreover, the experiments produced no evidence of the intermediary role of reflection vis-à-vis outcome variables other than legal knowledge, and evidence concerning the latter was inconsistent (Tables 4 and 5).
Making policy information relevant to citizens

**Discussion**

Research presented in this article suggests that, in deliberative mini-publics, policy-information flows (Crozier, 2008) are partly structured by a criterion of intersubjective relevance. This article describes a model proposing that citizens’ exposure to policy-related IRI is associated with desirable outcomes of deliberation, and that cognitive processes of reflection, framing and sense-making spurred by that exposure may contribute to those outcomes. Empirical evidence from the CIR provides some support for the model.

Content analyses of CIR citizens’ statements furnished evidence that a set of topics and communicative functions constituted IRI for CIR participants, and survey experiments indicated that voters considered information in such statements to be relevant to their voting choices, consistent with mini-public theory about IRI (Gastil, 2000; Gastil et al, 2014; Mathews, 1999). Voter-survey and undergraduate experiments yielded evidence that reading IRI was associated with gains in knowledge and sense-making about measures, and with political efficacy. These findings accorded with previous research on the sense-making (for example, Baden, 2010), educational (for example, Cho et al, 2009), and transformational effects (for example, Kaid et al, 2011) of deliberative information.

<table>
<thead>
<tr>
<th>Table 9: Experiment 1: Specific indirect associations between reading IRI and belief measure effective, mediated by policy-objectives belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable</td>
</tr>
<tr>
<td>Treatment O vs. Control</td>
</tr>
<tr>
<td>Treatment E vs. Control</td>
</tr>
<tr>
<td>Treatment OE vs. Control</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Table 10: Experiment 2: Specific indirect associations between reading IRI and belief measure effective, mediated by policy-objectives belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable</td>
</tr>
<tr>
<td>Treatment O vs. Control</td>
</tr>
<tr>
<td>Treatment U vs. Control</td>
</tr>
<tr>
<td>Treatment A vs. Control</td>
</tr>
<tr>
<td>Treatment OU vs. Control</td>
</tr>
<tr>
<td>Treatment OA vs. Control</td>
</tr>
<tr>
<td>Treatment UA vs. Control</td>
</tr>
<tr>
<td>Treatment OUA vs. Control</td>
</tr>
</tbody>
</table>

Experiments with undergraduate subjects also yielded evidence of cognitive mechanisms, proposed by the model of IRI, contributing to those consequences. Reading IRI was associated with a social-cognitive dynamic involving activating cognitive structures linked to beliefs about a measure’s objectives. Evidence suggested those structures framed policy information (for example, Scheufele, 2000) and assisted citizens’ sense-making (for example, Dervin and Frenette, 2001). Results also accord with research linking shared cognitive structures with mini-public participants’ similar relevance judgements (Pennington and Hastie, 1992). In addition, results indicated that framing involved generating beliefs about the measure’s effectiveness, consistent with network accounts of cognition (Baden, 2010).

Nonetheless, some aspects of the IRI model were not supported by undergraduate-experiment results. Although the model predicted that framing and reflection would mediate associations between reading IRI and knowledge gains, these experiments did not provide clear evidence of such mediation, contrary to previous research (for example, Baden, 2010; Cho et al, 2009). Further, the model predicted that reflection and learning would mediate the association between exposure to IRI and sense-making. Yet results of neither experiment furnished evidence of the intermediary role of reflection in that association, and results of Experiment 1 did not yield evidence of the intermediary role of knowledge in that association. These findings are inconsistent with expectations informed by previous sense-making research (for example, Baden, 2010; Dervin and Frenette, 2001; Gastil et al, 2016). Third, the model predicted that reflection, framing, learning and sense-making would mediate the association between exposure to IRI and personal transformation – particularly increased political efficacy – yet the experiments yielded no evidence of such mediation.

Measurement problems may partly explain the failure to detect these mechanisms. In undergraduate experiments, reflection was operationalised as reading time, yet alternative measures, such as metacognition (Shulman and Sweitzer, 2017), might more accurately gauge subjects’ policy reflection, and should be employed in future research. Similarly, in those experiments, knowledge was operationalised as understanding a measure’s legal rules. Yet a more important type of understanding might be awareness of a policy’s broad issues or overall impact (Bowler and Donovan, 1998), which could be employed as knowledge measures in future research.

Still other limitations concern the undergraduate experiments’ design and sampling. First, the IRI model’s prediction that framing would mediate the association between exposure to IRI and increases in reflection was not tested as part of the analysis of undergraduate-experiment data because the experimental design did not account for that relationship. Nonetheless, those experiments produced data that could be used to test that relationship in future research.

Second, since the design did not probe identification or motivation, in future research, the design will be revised to address those factors (Melville et al, 2005; Van Stokkom, 2005). Third, as those experiments used student samples, which have been criticised for low external validity (Gerber and Green, 2008), future experiments should use general-population samples.

Moreover, the IRI model presented here does not address deliberation within mini-publics (for example, Gastil, 2008). A revised model should address features of group deliberation, such as collective sense-making (for example, Walsh, 2007) and collective identification (Knobloch and Gastil, 2015).
Conclusion

This article contributes to scholarship on ‘the communicative dynamics’ of participatory governance (Crozier, 2008, 7) by examining mini-public communication (Cheyne and Comrie, 2002; Fuji Johnson et al, 2016). This article presents evidence that, in mini-publics, policy-information flows (Crozier, 2008) are partly structured to accord with characteristics of large numbers of citizens (Fishkin, 2009; Gastil, 2000; Mathews, 1999). Of these information structures tailored to citizens’ characteristics, among those contributing most to deliberation and desirable deliberative outcomes are combined descriptions of proposed policy’s objectives and real-world consequences. One practical implication of this research is that mini-public practitioners should ensure that information furnished to mini-public participants and information that mini-publics produce and distribute to the populace include accounts of proposed policy’s goals and likely actual effects.

Mini-publics (Fuji Johnson et al, 2016; Smith and Wales, 1999) are a vital form of participatory governance, enabling citizens to deliberate on policy and inform the populace in accessible language. Although mini-publics’ beneficial outcomes are well documented (Nabatchi et al, 2012), the mechanisms contributing to those outcomes are less well understood. By suggesting that those mechanisms include cognitive processes arising from exposure to patterns in information provided to deliberating citizens, this article furnishes a basis for further investigation of mechanisms that foster desirable consequences of citizen deliberation.

Acknowledgement

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Notes

1 Before 2014, CIR panelists wrote CIR ballot-measure evaluations (‘citizens’ statements’) themselves, using information submitted during CIR proceedings. In 2014, CIR procedures were changed such that CIR ‘participants began deliberations with a set of claims [hereinafter “initial claims”] developed by advocates and largely worked to prioritize and edit these claims for inclusion in the Citizens’ Statement’ (Gastil et al, 2015, 5). Each 2014 CIR citizens’ statement includes some assertions consisting of unique language not included in initial claims, some combining unique language with paraphrased or copied portions of initial claims, and some consisting of portions of initial claims, as well as some consisting of initial claims copied whole. Therefore 2014 CIR panelists retained discretion to shape the content of CIR citizens’ statements.

2 Only transcripts from the 2010 Oregon CIRs were examined because only those transcripts could be manually content-analysed in full given the time and resources available for this research.

3 See appendix.

4 See full text in appendix supplement.
Stimuli appear in appendix supplement.

The application function was combined with narrative because research showed CIR participants frequently told stories when using that function (Richards, 2012).

See full text in appendix supplement.

For path-model diagrams and details on data preparation and estimation, see appendix.

More stringent significance levels (‘protected alphas’) were used (Experiment 1: \( p < 0.0167 \) reflecting three comparisons with control group; Experiment 2: \( p < 0.0071 \) reflecting seven comparisons with control group). For variable descriptions and descriptive statistics, see appendix. For complete results, see appendix supplement.

All p-values are two-tailed.

Experiments 1 and 2 were designed to detect evidence of mediation discussed in this paragraph, except as the following note describes.

Experiments 1 and 2 were designed to detect evidence of the intermediary role of reflection in the association between exposure to IRI and sense-making. Experiment 1 was designed to detect evidence of the intermediary role of learning in the association between exposure to IRI and sense-making (in the form of knowledge confidence), but Experiment 2 and the path model used to analyse its results were not initially designed to detect that intermediary role of learning (see Figure 5A and hypotheses 2 through 4 in Table 4A in appendix). Even if Experiment 2 and the path model used to analyse its results had been designed to detect the intermediary role of learning in the association of exposure to IRI and sense-making, and that path model had yielded such evidence, the lack of a finding of a significant intermediary role for knowledge in that association in Experiment 1 means that the two experiments would not have produced consistent or similar evidence of such mediation. Experiment 2 yielded data that could be analysed to detect the intermediary role of learning in the association between exposure to IRI and sense-making, and such analysis can be performed in future research.

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**Appendix**

Appendix supplement

The appendix supplement is available online at: https://iriprojectblog.files.wordpress.com/2017/06/iri_appendix_supplement3.pdf