Origins and consequences of public trust : towards an understanding of public acceptance of carbon dioxide capture and storage

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Chapter 4

Group voice and acceptance of decisions[14]

Political decision makers often have to propose new policies and make decisions on issues that are too complex to judge for members of the general public. These days, one of the most important issues on the political agenda concerns policymaking related to the prevention of climate change. The implementation of recently developed carbon dioxide capture and storage technology (CCS), in addition to saving on energy consumption and increasing use of sustainable energy, is currently considered as an important strategy to mitigate climate change. If political decision makers make decisions about CCS, then it is critical that members of the general public approve of this decision. After all, public opposition to decisions can result in severe protest behavior and decisions being reversed (see, for example, the 1995 case of Brent Spar; Löfstedt & Renn, 1997). As such, it is important to understand how people come to accept or oppose such policy decisions.

In the current research, we focus on how public acceptance of policy decisions is affected by whether or not interest groups receive an opportunity to express their opinions in the decision-making process. Such an opportunity to express opinions in decision-making processes is commonly referred to as "voice" (cf. Folger, 1977) and represents an important element of procedural justice in individual-level decision-making processes as well as national-level policymaking (Lind & Tyler, 1988). The large majority of research in the procedural justice domain has focused on *personal* voice in decision making (i.e., the opportunity for individuals to state their opinion about the preferred outcome distribution). This research, for instance, has shown that personal voice affects procedural fairness judgments (e.g., Bies & Shapiro, 1988; Folger, 1977; Van den Bos, Vermunt, & Wilke, 1996), as well as satisfaction with and acceptance of decision-making outcomes (e.g., Peterson, 1999; Ståhl, Van Prooijen, & Vermunt, 2004; Van den Bos, Wilke, & Lind, 1998). Such personal-voice effects have often been explained in terms of self-oriented instrumental and relational concerns, referring to the

[14] This chapter is based on Terwel, Harinck, Ellemers, and Daamen (2009b) and has therefore been written in first-person plural.

conviction that personal voice can modify the outcome distribution (instrumental) or conveys how the decision maker values and respects the parties involved (relational; Lind & Tyler, 1988; Tyler & Lind 1992).

We aim to expand current insights on voice in decision making from the individual level to the group level. That is, in the current research we examine how voice for *interest groups* involved in national-level policymaking impacts on evaluations of decision makers and acceptance of the decisions made. We refer to opportunities for interest groups to express their opinions in decision-making processes as "group voice". We propose that people care about group voice in decision-making processes, but for different reasons than why they care about personal voice in decision making. Specifically, we propose that people care about group voice because they use this procedural characteristic to indicate the trustworthiness of decision makers. In turn, we propose that inferred trustworthiness determines whether people tend to accept or oppose the policy decisions made. Finally, we propose that people's knowledge level about an issue can influence their preferences for specific decision-making procedures as well as their willingness to accept resulting decisions. We examine these predictions in the context of decision making about CCS.

Voice in decision making

Procedural justice research has demonstrated that people consider voice an important aspect of decision-making processes. Why people care about voice in decision making is often explained in terms of instrumental and relational reasons (see Lind & Tyler, 1988; Tyler & Lind, 1992). From an instrumental perspective, an individual values voice in decision-making processes because expressing one's views on an issue may persuade the decision-making authority to provide this person with more favorable outcomes. Early research on dispute resolution by means of third-party interventions has illustrated this point by showing that people's satisfaction with procedures and outcomes depends on the extent to which procedures provide people with an opportunity to present all relevant information to the decision maker (e.g., LaTour, 1978, Walker, LaTour, Lind, & Thibaut, 1974). From a relational perspective, an individual values voice in decision making because voice indicates the quality of treatment by decision makers, which conveys important self-relevant information, including information about whether the decision maker values and respects the individual in question (e.g., Smith, Tyler, Huo, Ortiz, & Lind, 1998; Tyler, Degoey, & Smith, 1996; Tyler & Lind, 1992).

Research by Lind and colleagues (Lind, Kanfer, & Early, 1990) has shown that voice effects indeed can involve both instrumental and relational concerns. Participants in this study were allowed to voice their opinion either before or after the authority made the decision, or they were not allowed to voice their opinion at all. Fairness judgments were highest in the case of predecision-voice procedures (satisfying instrumental and relational concerns), second highest in the case of postdecision-voice procedures (satisfying relational concern only), and lowest in the case of no-voice procedures (satisfying neither instrumental nor relational concerns). Accordingly, both instrumental and relational concerns may be used to explain why people respond more positively to personal-voice procedures than to no-voice procedures.

Thus far, however, studies on voice have almost exclusively focused on personal voice in decision-making processes. Some notable exceptions are early studies on dispute resolution by means of third-party interventions, in which perceptions about procedural fairness were assessed among people observing the dispute-resolution process (LaTour 1978; Walker et al., 1974). In addition, more recent studies have focused on how people respond to situations in which another individual is denied (unfair treatment) an opportunity to voice (De Cremer & Van Hiel, 2006; Kray & Lind, 2002; Lind, Kray, & Thompson, 1998; Van den Bos & Lind, 2001). While the strength of the impact of injustice experienced by others on people's own judgments and emotions differed across studies, they all seem to indicate that people are to some extent sensitive to the unfairness experienced by others. The results of these studies are interesting, considering that self-oriented implications of unfair treatment by authorities (i.e., instrumental and relational concerns) are less clear for people who do not personally experience the unfair treatment than for people who do experience this unfairness personally (Lind et al., 1998).

National policy decisions are often made without the direct participation of individual members of the general public in the decision-making process. Nevertheless, the decisions made do affect them and hence their acceptance of these decisions is important. Interest groups (representing the general public) may be directly involved and consulted in the decision-making process, however. For example, individual citizens have no personal involvement in the decision-making process regarding CCS implementation, but different interest groups, including environmental NGOs and industrial organizations, are involved in CCS decision making. Applying the logic of Lind and colleagues (1998) with regard to self-

oriented instrumental and relational concerns to national policymaking, one would predict only modest group-voice effects. After all, when a person is not directly involved in decision making, decision-making procedures do not convey information relevant to this person's relational standing (i.e., whether this person is valued and respected by the decision maker). Moreover, without personal involvement in decision making people do not have the opportunity to exert control over the decision-making process and/or outcome (i.e., instrumental concern), regardless of the decision-making procedure used. Indeed, recent research suggests that this is one of the reasons why responses to political decision making cannot be fully predicted from existing research on the effects of procedural justice in interpersonal decision making (Leung, Tong, & Lind, 2007). As a result, a focus on self-oriented concerns cannot directly explain why people would value group-voice procedures over no-voice procedures in national policymaking.

We anticipate group-voice effects in national policymaking to relate to the implications for the decision maker at the group level (i.e., "The decision maker uses this procedure; what does that say about the decision maker?"), instead of the self-relevant implications of procedures that occur at the personal level (i.e., "The decision maker uses this procedure; what does this imply for me?"). Because members of the general public often have insufficient expertise to personally judge the merits of proposed national-level policies on their own, trustworthiness is among the most important characteristics of policymakers. In support of this thought, research on trust in hazard managers (Siegrist & Cvetkovich, 2000) has indicated that the level of trust in authorities that manage complex technologies influences public perceptions about the risks and benefits associated with these technologies. These findings are important because perceptions of risks and benefits have been found to influence public acceptance of complex technologies (Siegrist, 1999, 2000). In that sense, people are likely to use their trust in policymakers as a guide to decide whether to accept or reject policies on complex issues such as CCS. The perceived trustworthiness of the decision maker is likely to be determined by information about group voice in the decision-making process.

We carried out three experiments to test 1) whether group voice (i.e., an opportunity for certain interest groups to voice their opinions in the decision-making process) impacts public inferences regarding the trustworthiness of the political decision maker, and 2) whether inferred trustworthiness in turn influences people's acceptance of the decision made. We have designed these experiments in the context of decision making about the implementation of recently developed

CCS technology, which is an issue on the current political agenda. Several interest groups are involved in the issue, including environmental NGOs and industrial organizations. The central prediction in our studies is that people determine the trustworthiness of decision makers on the basis of whether or not decision makers provide interest groups an opportunity to voice their opinion in the decision-making process and, subsequently, that they decide to accept or oppose decisions regarding CCS implementation on the basis of inferred trustworthiness.

Study 4.1

In Study 4.1, we examined whether public acceptance of political decisions is affected by the way political authorities treat interest groups. Participants observed whether or not a political authority allowed environmental NGOs and industrial organizations an opportunity to voice their opinion in the decision-making process. Subsequently, participants indicated their support for the decision made by the political authority. We hypothesized that participants would consider the political authority to be more trustworthy when a group-voice procedure was used (i.e., allowing input from interest groups) compared to a no-voice procedure (i.e., unilateral decision making) to arrive at the decision (Hypothesis 1). We further hypothesized that participants would more readily accept decision made on the basis of a group-voice procedure compared to a no-voice procedure (Hypothesis 2). Finally, we hypothesized that the proposed relationship between the decision-making procedure and acceptance of decisions made would be mediated by inferences regarding the trustworthiness of the political decision maker (Hypothesis 3).

Method

Participants and design

Forty undergraduate students from Leiden University participated in the study (33 women and 7 men). We randomly allocated each of them to one of the four conditions of the 2 (procedure: group voice vs. no voice) by 2 (advice regarding CCS implementation: pro vs. con) between-subjects experimental design. Upon completion of the experiment they were each paid 3 euros (approximately U.S.$4) for participating in the experiment.

Procedure

Upon arrival at the laboratory participants were led into separate cubicles, each equipped with a personal computer. On the computer screen they read an introductory text about energy production, greenhouse gasses and global warming, and the new CCS technology. This text contained factual information only. After reading the text, participants indicated the extent to which they considered CCS implementation to be a good idea. Next, they read that multiple parties were involved in CCS and that a so-called "CCS board" had been assigned to advise the national government about whether or not CCS should be implemented. Then, participants read that the CCS board had provided both environmental NGOs and industrial organizations with an opportunity to voice their opinion about CCS implementation (group-voice condition) or that the CCS board had not provided environmental NGOs and industrial organizations with such an opportunity (no-voice condition). Subsequently, participants completed a questionnaire that asked them about the trustworthiness of the CCS board and the fairness of the decision-making procedure employed by the CCS board (this measure was included as a manipulation check for the procedure manipulation). After filling out the questionnaire, participants either read that the CCS board had given an advice for (pro condition) or against (con condition) implementation of CCS. Then, participants completed a second questionnaire assessing their acceptance of this advice and further containing the controls of the manipulations. Finally, participants were debriefed, paid and thanked for their participation.

Dependent variables

Manipulation checks. To check whether the procedure manipulation affected procedural fairness judgments as intended, we assessed these judgments by means of two questions at the end of the first questionnaire. The questions read "To what extent do you consider the decision-making procedure to be fair?" and "To what extent do you think the CCS board handled this decision fairly?" (1 = *not at all*, 7 = *very much*), $r = .66$. In addition, we checked participants' perceptions of the decision-making procedure by means of two questions at the end of the study. These questions read "Did environmental NGOs have an opportunity to express their opinion about CCS technology?" and "Did industrial organizations have an opportunity to express their opinion about CCS technology?" (1 = *yes*, 2 = *no*). We also checked participants' awareness of the content of the decision made by the authority at the end of the questionnaire. This check consisted of the question "Was

the advice of the CCS board for or against implementation of CCS?" (1 = *for implementation*, 2 = *against implementation*).

Trustworthiness. Before participants were informed about the decision made, inferred trustworthiness of the CCS board was assessed with two questions, "To what extent do you trust the CCS board?" and "To what extent do you consider the CCS board to be trustworthy?" (1 = *not at all*, 7 = *very much*), $r = .74$.

Acceptance. Acceptance of the advice of the CCS board was measured with two questions, "To what extent do you intend to respect the advice of the CCS board?" and "To what extent do you accept the advice of the CCS board?" (1 = *not at all*, 7 = *very much*), $r = .82$.

Results

Manipulation checks

In order to check whether the procedure manipulation had an effect on procedural fairness judgments (which we assessed prior to the manipulation of advice), we conducted analysis of variance (ANOVA) with procedure (group voice vs. no voice) as independent variable and procedural fairness judgments as dependent variable. As intended, participants judged the group-voice procedure to be fairer ($M = 5.26$, $SD = 0.97$) than the no-voice procedure ($M = 3.61$, $SD = 1.56$), $F(1, 38) = 16.62$, $p < .001$, $\eta^2 = .30$. Moreover, participants answered to the questions intended to check their awareness of the procedure manipulation as expected. Participants in the group-voice condition indicated that both NGOs and industrial organizations received an opportunity to voice, whereas participants in the no-voice condition indicated that NGOs and industrial organizations did not receive voice in the decision-making process. With regard to the advice manipulation, participants in the pro-advice condition indicated that the CCS board gave an advice for CCS implementation, whereas participants in the con-advice condition indicated that the board gave an advice against CCS implementation. Thus, the manipulations were perceived as intended.

Trustworthiness

Inferred trustworthiness of the CCS board was assessed prior to the advice provided and therefore analyzed as a function of decision-making procedure only. We performed an ANOVA with procedure (group voice vs. no voice) as independent variable and inferred trustworthiness of the CCS board as dependent variable, which showed a significant effect, $F(1, 38) = 6.39$, $p < .02$, $\eta^2 = .14$. In

accordance with Hypothesis 1, participants judged the CCS board to be more trustworthy after it employed a group-voice procedure (M = 4.71, SD = 0.99) relative to a no-voice procedure (M = 3.82, SD = 1.25).

Acceptance

We conducted an ANOVA with procedure (group voice vs. no voice) and advice (pro vs. con) as independent variables and acceptance of the advice of the CCS board as dependent variable. This analysis revealed a main effect of procedure only, $F(1, 36) = 6.66$, $p < .02$, $\eta^2 = .16$. In line with Hypothesis 2, participants more readily accepted the advice of the CCS board when the interest groups had been provided with an opportunity to voice their opinions about CCS (M = 5.62, SD = 0.96) than when these had not been provided with such an opportunity (M = 4.61, SD = 1.45). Neither an effect of the advice given nor an interaction was observed, indicating that the effect of group voice was obtained regardless of the nature of the advice given by the CCS board.

In addition, we were able to rule out that participants' own preferences regarding CCS implementation affected these results. That is, we checked whether inclusion of participants' attitudes towards CCS (assessed directly after they read the text about CCS) as a covariate in the analysis changed the pattern of results on acceptance of the advice. This was not the case, thus participants' outcome preferences did not affect the impact of group voice and advice on acceptance. This finding corroborates the reasoning that decision acceptance depends on characteristics of the decision-making procedure, rather than on whether the decision matches one's own decision preference.[15]

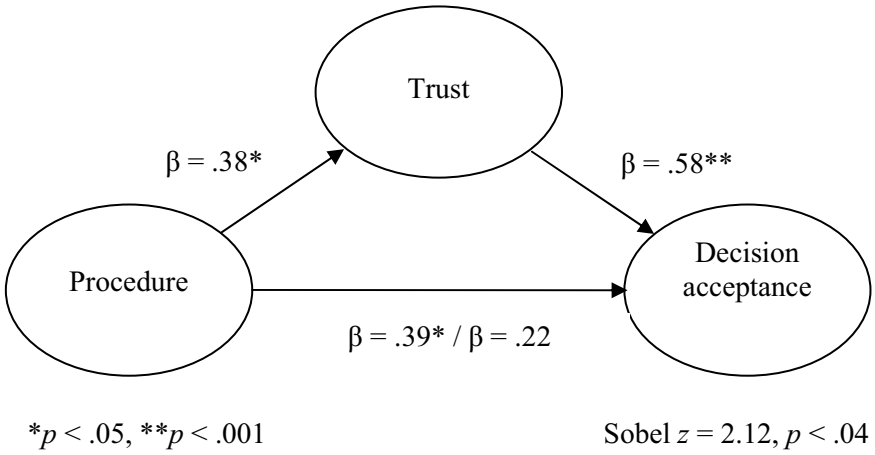
Mediation analysis

Following Baron and Kenny's (1986) procedure to test for mediation, we performed a series of regressions to examine whether trustworthiness of the CCS board mediated the effect of decision-making procedure on acceptance of the advice. The effect of the predictor (i.e., procedure) on the outcome variable (i.e., acceptance of the advice) was significant ($\beta = .39$, $p < .02$), as was the effect of the predictor on the proposed mediator (i.e., trustworthiness of the CCS board; $\beta = .38$, $p < .02$). We also observed the required significant association between the proposed mediator (i.e., trustworthiness of the CCS board) and the outcome variable (i.e., acceptance of the advice; $\beta = .54$, $p < .001$). In the final regression,

[15] We also examined this idea in Study 4.2 and obtained similar results.

the direct effect of decision-making procedure on acceptance of the advice dropped to nonsignificance after including trustworthiness of the CCS board as a covariate in the analysis (β = .22, p = .14). A Sobel test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982) confirmed that the reduction of the direct effect was significant, z = 2.16, p < .04, indicating mediation. Thus, and consistent with Hypothesis 3, mediation analysis indicated that the effect of decision-making procedure on acceptance of the decision can be explained by the way the procedure affects inferences regarding the trustworthiness of the political decision maker (see Figure 4.1 for a schematic representation of the mediation model).

Figure 4.1 Schematic representation of trust mediating the effect of decision-making procedure on decision acceptance in Study 4.1.



Discussion

The findings of Study 4.1 yield initial support for our reasoning. We showed that people judge an authority as more trustworthy when it provides interest groups with an opportunity to voice their opinions in decision making (compared to not providing them with such opportunity). We also showed that people more readily accept the decision made by the authority in the case of a group-voice procedure relative to a no-voice procedure. Additional analyses supported the hypothesis that inferences of trustworthiness mediate the effect of decision-making procedure on acceptance of the decision. As such, Study 4.1 indicates that even when people are

not personally involved in decision making, the presence (versus absence) of group voice affects people's reactions to decision-making authorities and the decisions that these authorities make.

What remains unclear, however, is whether the effects of decision-making procedure on inferred trustworthiness and acceptance of the decision made were due to procedural features (i.e., the presence or absence of group voice) or due to the involvement of specific parties in the decision-making process. For example, these effects may have been caused by the mere fact that environmental NGOs either received or did not receive an opportunity to voice their opinion, regardless of whether industrial organizations received such an opportunity too. We examine this possibility in Study 4.2.

Study 4.2

The aim of Study 4.2 was threefold. The first goal was to replicate the main finding of Study 4.1 that group voice in political decision making affects decision acceptance and that inferred trustworthiness mediates this relationship. A second goal was to examine whether inferred trustworthiness depends on whether or not voice is given (even if just to one interest group) or whether inferred trustworthiness depends on the fairness of the decision-making procedure in that both interest groups are given equal voice. Finally, this study enabled us to examine an alternative explanation for the findings obtained in Study 4.1 by investigating the possibility that inferred trustworthiness of the decision maker depends on whether voice is given to a specific but trusted type of interest group (i.e., environmental NGOs).

Previous research suggests that not the provision of voice per se, but that equal voice is crucial to instigate trust. That is, work by Van den Bos and Lind (2001) indicates that people are sensitive to the unfairness implicit in unequal treatment. In fact, sometimes participants rated procedural fairness to be less after unequal treatment (even if they personally received a fair procedure, but another participant did not) than after unfair but equal treatment (when both received unfair treatment). When only one type of interest group receives the opportunity to voice opinions in decision making, parties are treated unequally; hence the procedure is likely to be perceived as unfair, which may prevent people from seeing decision makers as trustworthy. Thus, for the second study we predict that unequal-voice

procedures induce relatively low perceived trustworthiness of decision makers because of people's sensitivity to unequal treatment (Hypothesis 4).

As indicated above, it may also be the case that trustworthiness is already established when decision makers provide voice to an interest group that the general public trusts and identifies with. Research has shown that, in the context of CCS, the general public tends to trust the environmental NGOs more than the industrial organizations (see Chapter 3 of this thesis). This raises the question whether people value voice for relatively trustworthy interest groups more highly than voice for relatively untrustworthy interest groups. In a similar vein, people may perceive environmental NGOs to be more likely to represent their own views or interests and, therefore, consider voice for these organizations to be more important as a proxy for their own input than voice for industrial organizations. Thus, voice for an interest group that is trusted and is seen as best representing one's own views may instigate greater trustworthiness in the decision-making authority than voice for an interest group that is less trusted and/or is less likely to represent one's own position.

In line with the results of Study 4.1, we predict that characteristics of the decision-making procedure determine decision acceptance, and that inferred trustworthiness of decision makers mediates the relationship between the decision-making procedure and acceptance of the decision (Hypothesis 3). Furthermore, we compare two unequal-voice procedures (voice for environmental NGOs but not for industrial organizations, or vice versa) with an equal-voice procedure (both interest groups received voice) in order to examine the possibility that additional concerns play a role (e.g., equal treatment, or voice for specific interest groups). We predicted that an equal-voice procedure would instigate more trust than an unequal-voice procedure (Hypothesis 4a), although we cannot rule out beforehand that giving voice to trusted NGOs might lead to higher levels of inferred trustworthiness than voice given to less trusted industrial organizations (Hypothesis 4b).

Method

Participants and design

Eighty undergraduate students from Leiden University (58 women and 22 men) participated in the study and were randomly allocated to one of the six conditions of the 3 (procedure: voice for environmental NGOs only vs. voice for industrial organizations only vs. voice for both environmental NGOs and industrial

organizations) by 2 (advice regarding CCS implementation: pro vs. con) between-subjects experimental design. Upon completion of the experiment they were each paid 3 euros for participating in the experiment.

Procedure and dependent variables

Upon arrival at the laboratory participants were subjected to nearly the same procedure as in Study 4.1. They read the introductory text after which the parties concerned with CCS (i.e., environmental NGOs and industrial organizations) and the CCS board were introduced. The only difference with Study 4.1 was that, depending on experimental condition, participants in Study 4.2 either read that only environmental NGOs *or* only industrial organizations had received voice, *or* they were informed that both environmental NGOs and industrial organizations had received an opportunity to voice opinions before the CCS board gave an advice to the national government regarding the implementation of CCS. Controls of the manipulation and dependent variables were identical to those of Study 4.1 (procedural fairness, $r = .81$; trustworthiness, $r = .65$; acceptance, $r = .71$).

Results

Manipulation checks

We conducted an ANOVA with procedure as independent variable and procedural fairness judgments (assessed prior to the manipulation of the advice) as dependent variable to check whether the procedure manipulation had an effect on procedural fairness judgments, which appeared to be the case, $F(2, 77) = 17.38$, $p < .001$, $\eta^2 = .31$. Additional t-tests served to examine which means significantly differed from each other. The t-test comparing the two unequal-voice conditions was not significant, $t(50) = 0.14$, *ns*. Thus, which type of organization received voice and which type did not receive voice did not affect procedural fairness ratings. The t-tests that compared the unequal-voice conditions with the equal-voice condition were significant in both cases, $t(53) = 5.31$, $p < .001$ for the NGOs-voice condition compared to the equal-voice condition, and $t(51) = 5.47$, $p < .001$ for the industry-voice condition compared to the equal-voice condition. Thus, the two unequal-voice procedures were considered equally fair ($M_{\text{NGOs voice}} = 3.02$, $SD = 1.48$ and $M_{\text{industry voice}} = 2.96$, $SD = 1.46$), but both were considered significantly less fair than the equal-voice procedure ($M = 4.82$, $SD = 0.99$).

Moreover, we checked participants' perceptions of the decision-making procedure and awareness of the nature of the advice with questions at the end of

the study. Participants in the equal-voice condition indicated that both NGOs and industrial organizations received an opportunity to voice, participants in the NGOs-voice condition indicated that NGOs received voice and industrial organizations did not, and participants in the industry-voice condition indicated that industrial organizations received voice and NGOs did not. Furthermore, participants in the pro-advice condition indicated that the CCS board gave an advice for CCS implementation, whereas participants in the con-advice condition indicated that the board gave an advice against CCS implementation. Thus, participants perceived the experimental manipulations as intended.

Trustworthiness

Hypothesis 4a stated that inferences regarding the trustworthiness of the CCS board would be lower after it used unequal-voice procedures than after it used an equal-voice procedure. As in Study 4.1, inferred trustworthiness was assessed prior to the manipulation of the advice. We conducted an ANOVA with procedure as independent variable and inferred trustworthiness of the CCS board as dependent variable. This analysis revealed the predicted effect, $F(2, 77) = 6.27$, $p < .01$, $\eta^2 = .14$. Additional t-tests indicated no difference between the two unequal-voice conditions, $t(50) = 0.58$, *ns*, but revealed significant differences between the NGOs-voice condition on the one hand and the equal-voice condition on the other, $t(53) = 2.83$, $p < .001$, as well as between the industry-voice condition and the equal-voice condition, $t(51) = 3.58$, $p < .001$. Inspection of the relevant means revealed that participants in the unequal-voice conditions reported to have less trust in the board ($M_{\text{NGOs voice}} = 3.72$, $SD = 1.29$ and $M_{\text{industry voice}} = 3.52$, $SD = 1.24$) than participants in the equal-voice condition ($M = 4.55$, $SD = 0.85$). These results indicate that unequal-voice procedures instigate less trust (regardless of the type of organization that received voice) than equal-voice procedures and, therefore, these results provide support for Hypothesis 4a. Importantly, at the same time these results rule out the possibility formulated in Hypothesis 4b that the higher level of trustworthiness in the group-voice condition relative to the no-voice condition obtained in Study 4.1 was caused by the fact that a specific type of organization (e.g., environmental NGOs) received voice in the decision-making process, regardless of whether other organizations received an opportunity to voice their opinion.

Acceptance

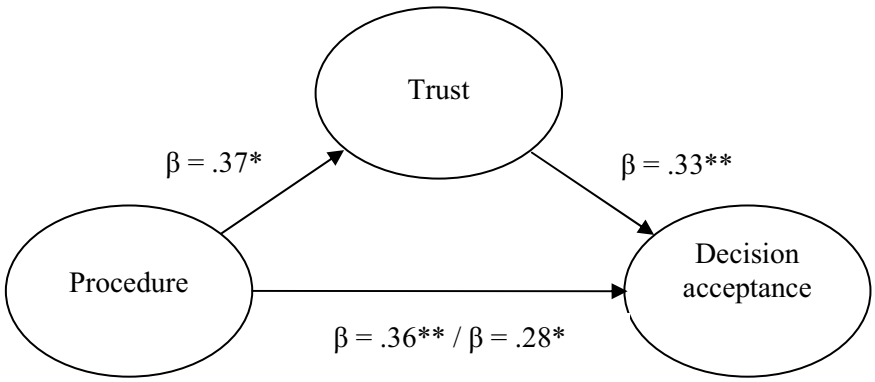
We performed an ANOVA with procedure and advice (pro vs. con) as independent variables and acceptance of the advice of the CCS board as dependent variable, which revealed a significant effect of procedure, $F(2, 74) = 6.65$, $p < .01$, $\eta^2 = .15$, as well as a significant effect of advice, $F(1, 74) = 7.14$, $p < .01$, $\eta^2 = .09$. Importantly, we did not observe an interaction, indicating that the effect of the procedure did not depend on the content of the advice that was given. The effect of advice showed that participants in this study accepted an advice for CCS implementation ($M = 5.23$, $SD = 0.98$) more readily than an advice against CCS implementation ($M = 4.56$, $SD = 0.98$). More relevant to our predictions, however, is the effect of decision-making procedure. Additional t-tests indicated no difference between the two unequal-voice conditions, $t(50) = 0.14$, *ns*, but again indicated significant differences between the NGOs-voice condition and the equal-voice condition, $t(53) = 2.89$, $p < .001$, as well as between the industry-voice condition and the equal-voice condition, $t(51) = 3.27$, $p < .001$. Participants accepted the decision made less easily when this resulted from unequal-voice procedures ($M_{\text{NGOs voice}} = 4.59$, $SD = 1.41$ and $M_{\text{industry voice}} = 4.54$, $SD = 1.23$) than when this resulted from an equal-voice procedure ($M = 5.54$, $SD = 0.98$).

Mediation analysis

Again, we followed the procedure specified by Baron and Kenny (1986) to test by means of regression analyses whether inferred trustworthiness of the CCS board mediated the effect of procedure on acceptance of the advice (Hypothesis 3). First, however, we collapsed the two unequal-voice conditions in order to create a dichotomous independent variable (i.e., equal versus unequal group voice), as the two unequal-voice conditions did not differ from each other in terms of inferred trustworthiness or acceptance. This procedure allowed us to assess by means of a Sobel test whether the magnitude of the direct effect was significantly reduced after introduction of the proposed mediator in the equation. The first regression analysis showed that the effect of the predictor variable (i.e., procedure) on the outcome variable (i.e., acceptance of the advice) was significant ($\beta = .36$, $p = .001$). The second regression analysis showed that the effect of the predictor variable (i.e., procedure) on the proposed mediator (i.e., trustworthiness of the CCS board) was significant too ($\beta = .37$, $p < .001$). The relationship between the proposed mediator (i.e., trustworthiness of the CCS board) and the outcome variable (i.e., acceptance of the advice) was also significant ($\beta = .33$, $p < .01$). The final requirement is a

significant reduction of the direct effect of the predictor variable on the outcome variable after introduction of the proposed mediator in the equation. Although the effect of decision-making procedure on acceptance of the advice remained significant after including trustworthiness of the CCS board as a covariate in the analysis (β = .28, $p < .05$), the reduction of the direct effect was significant, Sobel $z = 2.31$, $p = .02$, indicating mediation. Thus, we replicated and extended the findings obtained in Study 4.1, namely that fair decision making (rather than the involvement of a specific type of interest group, or the provision of voice to some but not all parties involved) enhances trust in authorities, and in this way fosters the acceptance of decisions made by this authority (see Figure 4.2 for a schematic representation of the mediation model).

Figure 4.2 Schematic representation of trust mediating the effect of decision-making procedure on decision acceptance in Study 4.2.



*$p < .05$, **$p < .01$ Sobel $z = 2.31$, $p = .02$

Discussion

Study 4.1 and Study 4.2 indicate that when relevant interest groups receive voice in political decision making, this procedure enhances the perceived trustworthiness of the decision-maker. Trustworthiness of the decision maker in turn makes people more willing to accept the decisions made. Critically, Study 4.2 also showed that an authority did not instigate much trust when it provided only NGOs or only industrial organizations with an opportunity to voice their opinion in the decision-

making process. This finding rules out the possible alternative explanation for the results of Study 4.1 that trustworthiness is already established when decision makers provide voice to specific interest groups, for instance because these are seen as most likely to represent one's own views. That is, Study 4.2 demonstrated that equality of treatment for different interest groups raises trustworthiness of decision makers and increases acceptance of decisions, independently of the identity of the parties involved in the decision-making process. Therefore, the results of Study 4.2 support the validity of our theoretical analysis and increase our confidence that people's responses to the decision-making procedure and outcome depend on features of the decision-making process (rather than the features of the specific parties involved).

Study 4.3

In Study 4.1 and Study 4.2, we have examined how people react to voice for specific parties in decision making about CCS implementation. An important aspect of these studies was that people were informed about CCS prior to learning about the decision-making procedure and completing the questionnaires that we used to assess inferred trustworthiness of decision makers and acceptance of decisions made. As such, people possessed a reasonable amount of knowledge about CCS. Some individuals are likely to be better informed than others about a specific policy issue, however. In Study 4.3, we therefore examined whether well-informed individuals compared to uninformed individuals respond differently to decision-making procedures. Specifically, we examined whether consulting members of the general public in decision making has effects on perceived trustworthiness of decision makers and decision acceptance similar to the effects obtained in the previous two studies.

Previous research on self-esteem and reactions to voice (Brockner et al., 1998) gives an indication of how knowledge on the topic may affect reactions to voice. According to Brockner and colleagues (1998), one determinant of people's motivation to express opinions in decision-making processes is whether they consider their input to be meaningful. People who are not able to provide meaningful input, for instance because they lack the necessary knowledge to be able to do so, will be less motivated to voice their opinion than those who feel that they have the knowledge to provide meaningful input. Consequentially, people who lack the knowledge to provide meaningful input will be less affected by

whether or not they receive an opportunity to voice than people who have knowledge to do so. The research by Brockner and colleagues (1998), however, addressed individuals' own opportunities to voice and concerned their direct personal involvement in a decision-making process.

We extend this reasoning to decision-making processes in which individuals do not have personal involvement. When individuals are not personally involved in decision making, they have to judge whether the input of other parties can contribute to the quality of decision making, instead of considering whether or not their own input is likely to be meaningful. In this case, people who have a reasonable amount of knowledge of the issue may be more acutely aware of the different concerns and interests that are relevant and need to be taken into account. By contrast, these complexities are likely to be less salient for those with little knowledge of the issue, who then should attach less importance to whether or not different parties are involved in the decision-making procedure. Thus, extending the reasoning proposed by Brockner and colleagues (1998) on personal voice to predict the effects of group voice, we argue that individuals with some knowledge of the issue at hand care more about group voice than individuals who lack such knowledge.

We manipulated participants' knowledge level about CCS by means of providing versus not providing them with information about CCS, instead of measuring preexisting interpersonal differences in knowledge about CCS. Manipulating knowledge in this way reduces the likelihood of a possible confound of knowledge level with other variables such as care for the environment. Thus, to test our predictions we crossed the nature of the decision-making procedure (whether or not members of the public received voice in the decision-making process) with the amount of information about CCS provided (whether or not participants received additional information about CCS). We hypothesize that informed individuals care more about public voice in decision making than uninformed individuals (Hypothesis 5), and that variations in procedures elicit stronger effects on inferred trustworthiness and decision acceptance among informed individuals than among uninformed individuals (Hypothesis 6). Furthermore, we examine this different type of group voice to obtain additional support for our central prediction that the provision of group voice enhances inferred trustworthiness, which in turn mediates the effect of public voice (but not the individual in question) on people's willingness to accept decisions (Hypothesis 3).

Method

Participants and design

Eighty-three undergraduate students from Leiden University participated in the study (51 women and 32 men). We randomly allocated each participant to one of the four conditions of the 2 (information about CCS: yes vs. no) by 2 (procedure: public voice vs. no public voice) factorial design. Upon completion of the experiment participants were each paid 3 euros for participating in the experiment.

Procedure

Upon arrival at the laboratory participants were led into separate cubicles, each containing a personal computer. On the computer screen the participants read that a new technology had been developed that enables the storage of carbon dioxide into underground sites. Participants further read that the decision whether or not this new technology, called CCS, should be implemented is both important and complex. Moreover, they read that the national government had appointed a "CCS board" to advise the government about whether or not CCS should be implemented.

After the introduction, participants in the information condition read "Later on you will be asked some questions, but first we want you to read a text that contains further information about CCS." after which they read the text. This text was similar to the text that participants in Studies 4.1 and 4.2 had read and informed them about energy production, greenhouse gasses and global warming, and the new CCS technology. Participants in the no-information condition read "Later on you will be asked some questions, but first we want you to read a text that is not directly related to CCS, but that contains information about the Dutch climate." after which they read this text. This text was not directly relevant to the decision that had to be made about CCS implementation, but was comparable with the text about CCS in the information condition with regard to length and difficulty. After reading the text, all participants completed a test assessing their knowledge about CCS. Subsequently, participants completed a short questionnaire that assessed their desire for public voice in the decision-making process regarding CCS implementation.

Upon completion of the questionnaire, participants read about the CCS board assigned to advise the national government about the implementation of CCS technology. They read that the CCS board had asked Leiden University to study

opinions regarding CCS and to write a report about these opinions. Participants in the public-voice condition read:

> The CCS board provides environmental NGOs, industrial organizations and representatives of the Dutch population an opportunity to voice their opinion. The CCS board has asked Leiden University to assess and report on the opinions of environmental NGOs, industrial organizations and, by means of sampling, a representation of the Dutch population. The report will be used in the formation of an advice concerning the implementation of CCS. You, however, are not included in the sample of people that receive an opportunity to voice.

Participants in the public-no-voice condition read:

> The CCS board provides environmental NGOs and industrial organizations an opportunity to voice their opinion. The CCS board has asked Leiden University to assess and report on the opinions of environmental NGOs and industrial organizations. The report will be used in the formation of an advice concerning the implementation of CCS. The CCS board does not provide the Dutch population an opportunity to voice their opinions, so these will not be represented in the report.

The experiment continued with a second questionnaire that contained measures of participant's willingness to accept the advice and that assessed their inferences regarding the trustworthiness of the CCS board. Subsequently, participants answered to the control question regarding the manipulation of procedure. Finally, they were debriefed, paid, and thanked for their participation in the study.

Dependent variables

Manipulation checks. We checked for the success of the information manipulation using the score on the knowledge test (which was directly administered after the information manipulation). The test contained five multiple-choice questions, each question having four alternative answers. We coded a correct answer "1" and an

incorrect answer "0" and added the scores on the five questions to create an overall "knowledge score". We checked for the success of the procedure manipulation by asking participants near the end of the experiment "Does the CCS board provide Dutch citizens an opportunity to voice their opinion about CCS technology?" (1 = *Yes*, *all Dutch citizens receive an opportunity to voice their opinion*, 2 = *Some Dutch citizens receive an opportunity to voice their opinion and some do not*, 3 = *No, Dutch citizens do not receive an opportunity to voice their opinion*).

Desire for public voice. The measure of participants' desire for an opportunity for the public to voice opinions contained three items (α = .77), "To what extent do you consider an opportunity for the Dutch population to voice opinions about implementation of CCS to be desirable?" (1 = *not at all*, 7 = *very much*), "To what extent do you consider an opportunity to voice an opinion about CCS to be important?" (1 = *not at all*, 7 = *very much*), and "The Dutch population should have the right to vote about the implementation of CCS." (1 = *completely disagree*, 7 = *completely agree*).

Acceptance. We measured acceptance of the advice using the item "To what extent are you willing to accept the advice by the CCS board?" (1 = *not at all*, 7 = *very much*).

Trustworthiness. We assessed inferred trustworthiness of the CCS board using the same two items as in Study 4.1 and Study 4.2 (r = .86).

Results

Manipulation checks

We conducted an ANOVA with information about CCS (yes vs. no) as independent variable and the knowledge score on the test as dependent variable, which showed the expected difference in the amount of knowledge that participants had about CCS, $F(1, 81) = 215.36$, $p < .001$, $\eta^2 = .73$. Participants who had read the text about CCS technology had significantly more knowledge about CCS technology (M = 4.56, SD = 0.67) than those who had not read this text (M = 1.60, SD = 1.13). Analysis of responses on the question checking the procedure manipulation showed that all participants answered this question as intended. All participants in the public-no-voice condition answered that the public did not receive an opportunity to voice their opinion about CCS technology (answer no. 3), whereas all participants in the public-voice condition answered that some members of the Dutch population received an opportunity to voice their opinion and some did not (answer no. 2).

Desire for public voice

We conducted an ANOVA with information about CCS (yes vs. no) as independent variable and desire for an opportunity for the general public to voice opinions as dependent variable. This analysis showed a significant effect, $F(1, 81) = 4.75$, $p < .04$, $\eta^2 = .06$. In line with our reasoning underlying Hypothesis 5, informed participants reported a greater desire for public voice ($M = 4.11$, $SD = 1.63$) than uninformed participants ($M = 3.42$, $SD = 1.21$).

Acceptance

We performed an ANOVA with information about CCS and the procedure used by the CCS board (public voice vs. no public voice) as independent variables and willingness to accept the advice of the CCS board as dependent variable. This analysis revealed a main effect for procedure, $F(1, 79) = 7.02$, $p < .01$, $\eta^2 = .08$, which was qualified by a significant Procedure by Information interaction, $F(1, 79) = 5.73$, $p < .02$, $\eta^2 = .07$. In line with our reasoning and as predicted in Hypothesis 6, additional analyses of simple main effects revealed that the type of decision-making procedure affected participants' willingness to accept the advice if they had received information about CCS, $F(1, 80) = 13.39$, $p < .001$, but did not affect uninformed participants' willingness to accept the advice, $F(1, 80) = 0.03$, *ns*. Informed participants were more willing to accept the advice after a public-voice procedure than a public-no-voice procedure, whereas uninformed participants' willingness to accept the advice did not depend on the type of decision-making procedure (for means and standard deviations, see Table 4.1).

Trustworthiness

We performed an ANOVA with information and procedure as independent variables and trustworthiness of the CCS board as dependent variable. This analysis showed a main effect of procedure, $F(1, 79) = 7.15$, $p < .01$, $\eta^2 = .08$, which was qualified by a significant Procedure by Information interaction, $F(1, 79) = 4.49$, $p < .04$, $\eta^2 = .05$. In support of Hypothesis 6, the type of procedure affected trust in the CCS board among participants who had been informed about CCS, but did not affect the level of trust among uninformed participants. Informed participants judged the CCS board to be more trustworthy when it employed a public-voice procedure than when it employed a public-no-voice procedure, whereas uninformed participants were inclined to trust the decision-making authority regardless of the type of procedure (for means and standard deviations,

see Table 4.1). These results support our prediction that participants with a reasonable level of knowledge about CCS respond more positively to public-voice procedures than to public-no-voice procedures, even if they are not personally involved in decision making.

Table 4.1 Means (and SD) for decision acceptance and inferred trustworthiness as a function of information received and type of decision-making procedure.

	Informed		Uninformed	
	Public voice	Public no voice	Public voice	Public no voice
Acceptance	5.67^{ab} (1.02)	4.68^{ac} (1.00)	5.25^{a} (0.79)	5.20^{a} (0.70)
Trustworthiness	5.26^{a} (0.92)	4.18^{b} (1.31)	5.10^{a} (0.77)	4.98^{a} (1.01)

Note. Per row different subscripts indicate different means at the $p < .05$ level.

Mediation analysis

Again, we performed mediation analysis to examine whether inferred trustworthiness of the CCS board mediated the relationship between procedure and acceptance. However, we hypothesized this indirect effect to be moderated by participants' knowledge level. That is, we predicted that public voice would only affect acceptance of the advice through inferred trustworthiness (the proposed mediator) among informed participants, not among uninformed participants. Baron and Kenny's (1986) procedure to test for mediation provided initial support for this prediction. By showing the significant Information by Procedure interaction on the outcome variable (i.e., acceptance; $\beta = -.43$, $p < .02$) and the proposed mediator (i.e., trust; $\beta = -.38$, $p < .04$) we met the first two requirements for mediation. The

required association between the proposed mediator and the outcome variable was also significant, β = .53, $p < .001$. Moreover, we found that the Information by Procedure interaction on the outcome variable dropped to nonsignificance (β = -.26, $p = .12$) after introduction of the proposed mediator in the equation. The reduction of the magnitude of the interaction effect was significant, Sobel $z = 1.98$, $p < .05$ (see Figure 4.3), indicating mediation. In addition to this analysis, we applied the procedure developed by Preacher, Rucker, and Hayes (2007) to test for moderated mediation, which uses bootstrapping to test for mediation at different levels of the moderator variable. This analysis further corroborated our reasoning because it supported the mediation model among informed participants (boot $z = 2.75$, $p < .01$), but not among uninformed participants (boot $z = 0.36$, $p > .70$). Thus, consistent with Study 4.1 and Study 4.2, these mediation analyses provided support for the mediating role of trustworthiness in the relationship between decision-making procedure and acceptance of the advice.

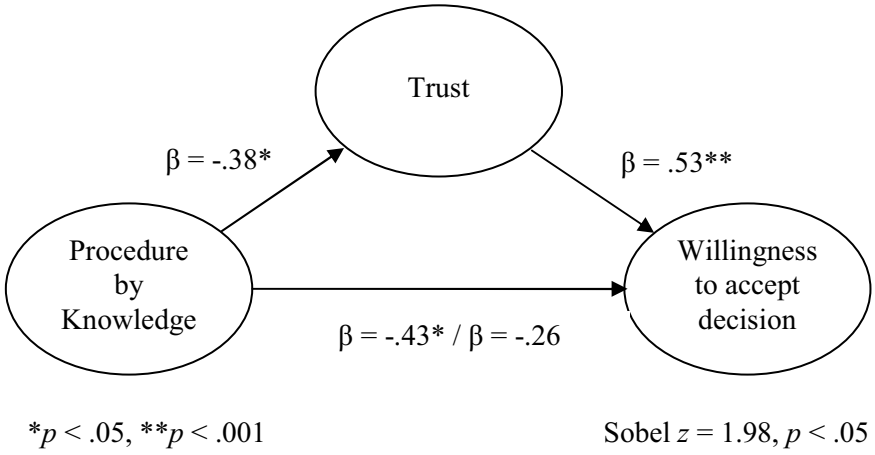
Discussion

This study offers converging support for our central prediction that characteristics of a decision-making procedure affect people's trust in the decision-making authority, which in turn determines the likelihood that they will accept decisions made by this authority. Study 4.3 further indicates that knowledge about CCS technology can moderate this effect: Informed people reacted more positively to public voice compared to no public voice, while uninformed people seemed relatively indifferent about an opportunity for members of the general public to voice their opinions. This finding extends existing insights on procedural voice as it suggests that people do not automatically display negative reactions to no-voice procedures. Instead, we showed that responses also depend on people's knowledge of the problem, which determines the extent to which they find it desirable for the general public to have a voice in the decision-making process.

General discussion

In the current research we have focused on how acceptance of policy decisions is affected by whether or not interest groups receive an opportunity to voice their opinion in decision making. The decision-making issue concerned the implementation of carbon dioxide storage as a climate mitigation option, which is an important issue on the current political agenda. Our results demonstrate that

Figure 4.3 Schematic representation of trust mediating the effect of decision-making procedure on decision acceptance in Study 3.



voice for interest groups in decision-making processes, which we refer to as group voice, affects inferred trustworthiness of decision makers and, as a result, impacts on acceptance of the decisions made. That is, the current studies show that people use procedural information to determine whether or not an authority is worthy of trust and more readily accept decisions made by trustworthy decision makers. Study 4.3 indicates that one's knowledge level can moderate this effect: Informed people reacted more positively to public-voice procedures compared to public-no-voice procedures, whereas uninformed people seemed relatively indifferent about an opportunity for members of the general public to voice their opinions.

Our experiments contribute to the existing literature in several ways. First and foremost, the experiments presented in the current chapter show that procedural voice is not only important in the case of personal involvement in decision making. In our studies, group-voice effects occurred even though participants were not personally involved in the decision-making process. In this way, the present work extends previous research in the domain of procedural fairness, which has primarily focused on personal voice in decision making. We argue that the difference between personal and group voice is important because traditional self-oriented explanations (e.g., instrumental and relational accounts) for preferences of voice procedures over no-voice procedures do not easily apply in the case of group voice. Whereas self-relevant implications are proposed to account for

the effects of voice at the personal level, implications of the procedure for the decision maker (i.e., inferred trustworthiness) can explain why people value group-voice procedures over no-voice procedures.

Another important contribution of the present research is our assessment of reactions to decision-making processes in which several parties with different identities are involved. In Study 4.1 and Study 4.2, we specifically focused on whether people care about voice for interest groups other than the general public (i.e., environmental NGOs and industrial organizations). Study 4.3 extended this analysis by focusing on reactions to procedures that explicitly do or do not provide the general public (but not the individual in question) with an opportunity to voice opinions. Across all three studies, we found that the provision of group voice by a decision-making authority – communicating a fair procedure – instigated trust, which resulted in a greater willingness to accept decisions made by the decision maker. Importantly, we excluded alternative explanations, such as the possibility that the involvement of specific parties is crucial (Study 4.2). Thus, it seems important that different types of interest groups have equal opportunities to voice their opinions in decision making, independently of the identity of the organizations involved.

The current research also contributes to the existing literature in that we examined the effects of the level of information available to the self (Study 4.3). Interestingly, this last study showed that reactions to public-voice procedures only differed from reactions to public-no-voice procedures among people who had received information about CCS, but not among those who had not received such information. That is, we found that only people who had some knowledge of the topic under consideration displayed public-voice effects. One explanation for this finding is that participants who had been informed about CCS were more aware of the complexity of the issue and the need for proper decision-making procedures in dealing with this issue. The topic was still quite complex for informed participants, so that they did not have particularly strong feelings about the accuracy or favorability of the decision-making outcome (recall that in Study 4.1 and 4.2 participants' own attitudes towards CCS implementation did not affect acceptance of the advice provided by the CCS board, regardless of the nature of this advice). Nevertheless, they did consider it important that attention is paid to the concerns among the general public with regard to CCS. Thus, as a result of the information received they see the importance of integrating views and concerns of different interest groups into the decision, including that of the general public.

The positive relationship between trustworthiness of decision makers and acceptance of policy decisions observed in the current research complements findings in other areas of research indicating that trustworthiness of authorities has positive effects on their effective functioning (Tyler & Degoey, 1996). For example, it has been found that employees' trust in supervisors positively impacts employees' support for their supervisor, particularly when outcomes are unfavorable (Brockner, Siegel, Daly, Tyler, & Martin, 1997). Moreover, trustworthiness of organizational authorities has been found to positively influence subordinates' organizational citizenship behavior (Konovsky & Pugh, 1994), job performance (Oldham, 1975), and other types of constructive organizational behavior (for an overview, see Dirks & Ferrin, 2001). At the societal level, trustworthiness of legal authorities creates citizen compliance to rules without coercion (Tyler, 1990). Along these lines, we have shown here that trustworthiness of the parties responsible for making national-level policy decisions positively affects public acceptance of these decisions, which is necessary for successful implementation of the policies in question.

Limitations and directions for future research

The current results were obtained in experiments among undergraduate university students, which may be raised as a possible limitation. We think, however, that the use of these participants does not necessarily undermine the validity of our current findings. In fact, it can be argued that student populations provide a strong test for our prediction that the provision of voice to interest groups (without any personal involvement in the decision-making process) can enhance trust in decision-making authorities and foster decision acceptance. That is, undergraduate students are likely to have higher intelligence, to be more politically active, and to have greater knowledge about scientific constructs, probably causing them to be more critical of authorities than a representative sample of members of the general public. Moreover, there is no reason to believe that undergraduate students differ from other people in how important they consider fair procedures to be or in the extent to which they think trustworthiness is important. Fairness and trustworthiness represent quite basic human values that do not only apply to this context or to the undergraduate students in these experiments. Indeed, a positive correlation between trust in organizations using gene technology and public acceptance of this technology was obtained from a representative sample of the Swiss population (Siegrist, 2000). Similarly, Leung and colleagues (2007) showed that Hong Kong

citizens' evaluations of the Hong Kong government were influenced by the fairness of the procedures used to arrive at policy decisions regarding Vietnamese asylum seekers. This illustrates the robustness of voice effects in general, and suggests that the observations of the present research may generalize to broader research populations.

Finally, even though undergraduate students may possess more knowledge about scientific constructs in general, just like members of the general public they will tend to have relatively little knowledge about a specific issue such as CCS. Indeed, in Study 4.3 participants who did not receive specific information about CCS technology were clearly less able to correctly answer a number of questions testing their knowledge of the issue at hand than those who had received such information. Comparable differences in knowledge level are likely to be observed among members of the general public, of whom some will have or develop a reasonable level of knowledge about CCS, whereas others will stay uninformed. For the same reason, we think that the results of the current studies are not limited to the decision-making issue under consideration here (i.e., CCS implementation), but should also be found in research on other national-level policymaking situations. Future research could examine the boundary conditions of the effects observed here, for example by assessing group-voice effects in decision making on issues that are less difficult to judge for members of the general public or about which people have stronger outcome preference. Potentially, in these cases people's own outcome preferences impact on authority evaluations and acceptance of policy decisions, over and above the element of group voice in decision making. Future research is needed to examine this possibility.

Conclusion

On the basis of three studies we conclude that inferred trustworthiness of decision makers is an important attribute in complex political decision making. When people are not capable of determining whether a certain decision is favorable or unfavorable, they will more readily accept the decision and display support behavior when the decision maker is considered to be trustworthy (rather than untrustworthy). Furthermore, we have shown that people use procedural information about group voice to determine whether or not they can trust the authority. Accordingly, policymakers should be aware that acceptance of policy decisions is not only affected by the content of the information that they provide to the public. Instead, it is crucial that they employ fair group-voice procedures to

reach policy decisions and that they communicate the nature of these decision-making procedures to the general public.