The Role of Evidence in Politics: Motivated Reasoning and Persuasion among Politicians

Authors:
Martin Baekgaard
martinB@ps.au.dk

Julian Christensen
Julian@ps.au.dk

Casper Mondrup Dahlmann
Casper_m_d@hotmail.com

Asbjørn Mathiasen
As.ma@live.dk

Niels Bjørn Grund Petersen
niels@ps.au.dk

All from Department of Political Science, Aarhus University.

Abstract

Does evidence assist politicians in making informed decisions even in cases where it is at odds with their prior attitudes? And does adding more evidence increase the likelihood that politicians are enlightened by the information? Based on the literature on motivated political reasoning and the theory about affective tipping points, we hypothesize that politicians will tend to reject evidence that is in discordance with their prior attitudes but that increasing the amount of evidence will reduce the impact of prior attitudes and strengthen their ability to interpret the information correctly. Our hypotheses are examined using randomized survey experiments with responses from 954 Danish politicians, and results from this sample are compared to responses from similar survey experiments with Danish citizens. The experimental findings strongly support the hypothesis that politicians are biased by prior attitudes when interpreting information. However, in contrast to our expectations, the findings show that the impact of prior attitudes increases when more evidence is being added.

Keywords: Motivated reasoning; Information; Persuasion; Evidence; Political decision-making; Elite decision-making; Evidence-based Policy-making.

Introduction[1]

Politicians are constantly confronted with factual information designed to either assist them in the process of making political decisions or influence their positions on topics of importance to the provider of the information.[2] However, little is known about whether and under what conditions politicians are susceptible to facts. In this article, we study one aspect of this topic by focusing on two interrelated questions: Does evidence assist politicians in making informed decisions even in cases where the evidence is at odds with their prior beliefs? And does adding more evidence increase the likelihood that politicians are enlightened by the information?

Research in political psychology has shown that people's motivations influence how they reason about information.[3] People's prior attitudes and beliefs can lead to motivated processing of information entailing that evidence and arguments are selectively accepted and rejected. Empirical studies have found that this is a particular prevalent phenomenon among politically knowledgeable individuals with strong prior attitudes and beliefs.[4] However, it has also been shown that people are not "(…) at liberty to conclude whatever they want to conclude merely because they want to".[5] In line with this, Redlawsk, Civettini, and Emmerson provide evidence of an affective tipping point where people are constrained by reality and can no longer ignore attitude-incongruent information.[6]

Politicians, however, differ from people in general. They should be expected to hold higher standards of facts than ordinary citizens due to their electoral responsibilities and the potential impact of decisions based on wrongful interpretation of information. Also, they should be expected to hold stronger attitudes and possess higher levels of political knowledge than the average citizen. Thus, it remains an open question whether politicians are motivated reasoners like citizens and whether adding more evidence will reduce their resistance to information. To examine these

questions, we use data from three randomized survey experiments with participation of Danish local politicians. Furthermore, we compare the results from all experiments to responses to similar survey experiments on a representative sample of Danish citizens.

The first two experiments test the hypothesis that prior attitudes influence politicians' interpretations of new information by presenting the politicians with quantitative information on the performance of two suppliers of public services and asking them to assess which of the organizations performs best. The information provided is cognitively demanding but unambiguous in the sense that one—and only one—interpretation of the information is correct. The experimental groups vary as to whether or not the sector affiliation of the suppliers is visible to the respondents. In some groups the suppliers are presented as supplier A and B, while they in other groups are presented as a public and a private supplier. By comparing the groups' responses to the performance question with prior ideologically based attitudes on the balance between public and private provision of public services (measured before the politicians were exposed to the experimental treatment), we are able to estimate to what extent prior attitudes matter to interpretations of unambiguous information.

A third experiment is designed in order to test the effect of adding more evidence. Again, politicians are presented with quantitative information on the performance of two suppliers of a public service and asked to assess which of the suppliers performs best. Like in the first two experiments, the evidence is constructed to ascertain that only one interpretation is correct. In this experiment, we vary the amount of information across experimental groups while the relative performance of the two suppliers is kept constant. This allows us to estimate whether prior attitudes matter differently to interpretations depending on the amount of information disclosed.

In the following two sections, we draw on the literature on motivated reasoning to discuss the interplay between prior attitudes and evidence among politicians. Our aim here is not to test the theory of motivated reasoning, but rather to use this literature to derive testable hypotheses about how politicians process and interpret evidence. We argue that politicians on the one hand are likely to be particularly prone to directionally motivated reasoning but that they on the other hand, compared to most citizens, are more used to processing vast amounts of complex information. Next, we discuss how to examine the interplay of information and prior attitudes. We argue that survey experiments are a useful tool to deal with issues of missing and incomparable data, selection bias, and endogeneity bias, and we present our experiments designed explicitly to deal with these issues. This is followed by the analysis. In line with our first hypothesis, we find that politicians do indeed tend to misinterpret evidence that is in discordance with their prior attitudes. However, contrary to our second hypothesis, attitudes influence interpretations more as the amount of evidence increases. Largely similar patterns are found for citizens. We conclude by discussing the limitations of our study and the implications for future research.

Motivated Political Reasoning

When facing new information, individuals will have to engage in reasoning in order to interpret and eventually act on the information. The theory of motivated reasoning argues that human reasoning is always motivated[7] and distinguishes between accuracy goals and directional goals as two competing types of motives. If individuals are driven by accuracy goals, they are motivated to reach objectively true conclusions, no matter the content and implications of those conclusions. Thus, they will carefully consider relevant information at hand and try to make an informed decision based on the evidence. If they, on the other hand, are driven by directional goals,

they are motivated to reach a specific and preselected conclusion. Therefore, they will use interpretation strategies that increase the possibility of interpreting the information in ways that are in accordance with prior attitudes and beliefs. Thus, if the content of the information shows a picture strongly at odds with prior attitudes and beliefs, directionally driven people will tend to reject or misinterpret the information in an attempt to reduce the discomfort from cognitive dissonance.[8] Hence, there is a tension between the drive for an accurate interpretation on the one hand and the drive for creating consistency between prior attitudes and new information at hand on the other[9] and a large body of empirical work has produced evidence of biased interpretations based on, for instance, specific self-perceptions[10] and prior political attitudes and beliefs.[11]

The extant literature has almost exclusively focused on how citizens engage in motivated reasoning. Politicians do, however, differ from citizens in important respects, and the findings in the literature on motivated reasoning can therefore not be directly extrapolated to politicians without further consideration. Politicians make decisions with huge potential impact for their electorates on a regular basis. Many of these decisions are based on newly obtained information. Thus, on the one hand, politicians can be seen as professional information users who should hold higher standards of facts than citizens and who may therefore engage in more nuanced reasoning than citizens.

On the other hand, however, it has been shown that politically sophisticated individuals with strong prior beliefs are *more* prone to directionally motivated reasoning than are others.[12] For instance, Kahan finds that the disposition to engage in central and deliberative processing amplifies directionally motivated reasoning and that this is especially true for highly partisan individuals.[13] Accordingly, by assuming that politicians on average possess higher levels of political knowledge and stronger political beliefs than ordinary citizens, we should expect them to be more prone to directionally motivated reasoning as well. This point of view is further supported

by the fact that politicians to a large extent are expected to show consistency in their attitudes and that it is an essential part of a politician's job description to represent their constituents.

Based on these counteracting mechanisms, we do not have an a priori expectation that politicians should be more or less prone to motivated reasoning than the average citizen. Nonetheless, the general findings in the empirical literature based on citizens do clearly show that people are often prone to motivated reasoning, and we do thus expect that the prior attitudes of politicians influence their interpretations of new information. Specifically, we expect that:

H_1: Politicians increasingly tend to misinterpret new information the more the information is at odds with their prior attitudes and beliefs.

Disagreement is a natural element in politics, and ideological beliefs often play an important role when various solutions to political problems are discussed. Thus, it is no surprise if politicians use information politically and disagree over the implications of certain facts. However, it is a democratic problem if their interpretation of the very information is biased, in which case disagreement is not about political implications of facts but about the facts themselves. If directionally motivated reasoning is indeed present in these situations, it questions the role of factual information and evidence in political decision-making.

Can Biased Interpretations Be Reduced by Increasing the Amount of Evidence?

If politicians are biased by prior attitudes and beliefs, an important question becomes whether these biases can be reduced, for example by presenting larger amounts of unambiguous evidence pointing towards one conclusion and thereby making it more indisputable what the right conclusion is.[14] In a classic piece, Festinger argued that although beliefs are difficult to change, because of people's attempts to avoid cognitive dissonance, most people can be persuaded by information showing prior attitudes and beliefs to be obviously wrong.[15] In other words, when confronted with strong and credible counterevidence, people can be persuaded even if they tend to be biased by their prior attitudes.

Redlawsk, Civettini, and Emmerson find that people tend to be directionally motivated reasoners when confronted with information that is slightly at odds with their prior attitudes. Specifically, they find an attitude-strengthening effect when people are presented with slightly incongruent information compared to when they are presented with completely congruent information. However, if information is highly incongruent, it forces people to "(…) take 'reality' into account"[16] and update their attitudes in a more objective manner. So, while people are in general motivated to defend their prior attitudes, and may be capable of doing so with the use of directionally motivated reasoning when counterevidence is weak, they are forced to adjust their attitudes and beliefs if they are faced with overwhelming evidence at odds with these prior attitudes.

Redlawsk and his colleagues thus identify an affective tipping point where people can no longer ignore the incongruence of new information. The affective tipping point is defined in relative terms, which means that people are expected to process information more objectively when the share of information, which is incongruent with prior beliefs, exceeds the tipping point. In this way, Redlawsk and his colleagues are not directly concerned with the amount of incongruent information to be processed.[17] However, based on the theory, it seems plausible to expect a lesser

effect of prior attitudes on the interpretation of new information when people are presented with a lot rather than a few pieces of incongruent information.

The expectation that people can be persuaded by large amounts of evidence going against their prior beliefs is supported by the persuasion literature. Based on their Elaboration Likelihood Model of Persuasion, Petty and Cacioppo argue that the amount of persuasive information affects people's interpretations.[18] Increasing the number of arguments in a message can either enhance issue-relevant thinking and provide logical support for some conclusion,[19] or it can function as a cue following a heuristic rule that "length implies strength".[20] In conclusion, when confronted with larger amounts of unambiguous information, we expect politicians to be increasingly persuaded by the evidence and therefore less inclined to stick to their prior attitudes—even if these attitudes are in conflict with the information at hand. This in turn means that the prior attitudes of politicians are expected to matter less to their interpretation of information, the larger the amount of unambiguous evidence they are presented with. Thus, we expect a bigger information load to reduce the bias of interpretations and hypothesize that:

H_2: Prior attitudes of politicians matter less to their interpretations of new information the larger the amount of unambiguous information pointing towards one single conclusion they are presented with.

The literature, however, does not provide unambiguous support for this hypothesis. A couple of empirical investigations of whether misperceptions and biases can be corrected by providing evidence show evidence of backfire or boomerang effects.[21] Such boomerang effects may, for instance, occur because highly partisan or ideological individuals are provoked to argue against

strongly framed information.[22] Thus, boomerang effects may be a particularly relevant concern for politicians and may take place to an even larger extent when politicians are being presented with larger amounts of information. We will return to the concept of boomerang effects in the discussion of our empirical findings.

Empirical Setting and Design

To test our hypotheses, we need data on a large number of politicians with different prior attitudes who have been presented with comparable new information and for whom there is variation in the amount of information that they are presented with. To obtain such data, we rely on three randomized survey experiments nested within the same survey. This method allows us to test our hypotheses with a high degree of internal validity on a high number of real politicians. As subjects in our experiments we use Danish city councilors. In Denmark there are 98 municipalities, each having their own city council. City councils constitute the elected leadership of the municipalities and consist of politicians from widely different political parties who are collectively responsible for important welfare services like public schools, child care, elderly care, and local unemployment policies. While only few of the councilors are fulltime politicians, the setting allows for a large-scale test among politicians who on a regular basis are making decisions of high importance to the everyday life of citizens.[23]

Emails were sent to all 2,445 city councilors in Denmark in November 2014 with an invitation to participate in a study regarding the role of information in municipal politics and a personal link to the survey. The data collection was finalized after a month during which two reminders of participation were sent to the respondents. In total, 954 politicians responded to our experimental questions corresponding to a response rate of 39 percent. Members of all city councils

chose to participate in our survey, and a test (Table S1 in the supplementary material) shows that respondents do not differ significantly from the population of Danish city councilors in terms of gender, the proportion who are members of city councils in cities with more than 100.000 citizens, and the proportion who are members of municipal finance committees. However, members of left-wing parties are slightly overrepresented, and we would therefore expect our sample to be slightly more in favor of public service provision than the population of Danish local politicians at large. Respondents were randomly assigned to participation in either the first or the second experiment, whereas all respondents participated in the third experiment. All experiments were randomized independently of one another.

In addition to the survey with politicians, we conducted an identical survey in November 2016 with a sample representative of the Danish population with respect to gender, age, and municipal residence. The sample includes responses from 1,006 members of the Danish YouGov panel. These data allows us to compare to what extent politicians and citizens are directionally motivated reasoners. Since our research question is concerned with politicians, we will focus our discussion on the results from the politician sample. However, throughout the analysis, we will compare and comment on differences between results from the two samples.

In order for us to test whether attitudes matter to interpretations, respondents have to be presented with information that they actually have different opinions about. Furthermore, as described above, the theory of motivated reasoning suggests that respondents will tend to defend their initial position because they have an emotional attachment to the topic at hand.[24] Thus, we need a case that triggers some form of emotional response from the respondents. Therefore, we chose an issue that is continuously being debated in Danish politics: the question of what role the private sector should play in the delivery of public services. Some people believe the public sector is the best supplier of public services whereas others believe that private contractors can deliver the

services more efficiently.[25] The balance between public and private service provision is thus a highly contested issue for Danish city councilors who are responsible for amongst others decisions regarding outsourcing of municipal services. Three questions were included prior to the experiments in the survey to measure respondents' general prior attitudes to public versus private delivery of public services, and an additive index was constructed running from 0–1 with higher values corresponding to a stronger preference for public service provision.[26] With a mean of 0.63 and a standard deviation of 0.33, prior attitudes vary substantially in the politician sample even though the distribution is somewhat skewed with around 25% of the sample scoring the maximum preference for public service provision. In comparison, the citizen sample is more balanced with a mean of 0.56 and a 0.27 standard deviation. The distribution of prior attitudes is shown in Figure 1.

Figure 1 about here

Later in the survey, respondents participated in our experiments that were all designed based on the idea of motivated numeracy.[27] Respondents were presented with fictitious information on the performance of two suppliers of a public service that Danish municipalities are responsible for (primary education in the first experiment, road maintenance in the second, and rehabilitation after surgery in the third), and were asked to evaluate which supplier performs best according to the presented information. For ethical reasons and to avoid confusion of the suppliers with real organizations, we made it clear in the introductory text to the experiments that the information was fictitious. Moreover, we gave the suppliers general names that could not be confused with specific, real suppliers. We expect people who prefer public services to be delivered by public suppliers to be biased such that their ability to correctly interpret the information is lower

if the private supplier is shown to perform best, and vice versa for people who prefer private suppliers. A test of this hypothesis requires that we present our respondents to unambiguous information in the sense that the information has one—and only one—correct interpretation. Therefore, as can be seen in Figure 2, one organization was shown to be unambiguously better performing than the other and the dependent variable in all three experiments measures whether or not respondents answer correctly, meaning that they are able to identify the organization or supplier that performs best.

Experiment 1 and 2: Do Prior Attitudes Affect Interpretations?

H_1 concerns the question of whether prior attitudes have a causal impact on respondents' ability to correctly interpret information. To study this question, we need a design that eliminates the possibility that a correlation between prior attitudes and interpretations is spurious. This could for instance be the case if both our measure of prior attitudes and the ability to correctly interpret the information were correlated with general abilities to process numerical information. Since prior attitudes cannot be randomly assigned, we rely on a design in which we compare the ability to interpret the information correctly in treatment and placebo groups. Rather than randomly assigning prior attitudes, we randomly assign respondents to treatment groups where prior attitudes should matter if the theory of motivated reasoning holds true and to placebo groups where prior attitudes should not matter according to this theory. By comparing the impact of prior attitudes in treatment groups and placebo groups, we are thus able to isolate the real effect of attitudes from spurious effects.

To ensure that findings are not limited to one area of public service, we conducted two experiments, each based on random assignment to one of four groups: two treatment groups and

two placebo groups.[28] One experiment used fictitious information on parent satisfaction with a highly politicized policy area: primary schools, while the other relied on fictitious information on citizen satisfaction with suppliers of a less politicized service: road maintenance. Respondents were randomly assigned to participate in either the experiment on school satisfaction or the experiment on road satisfaction. Since the experiments on schools and roads are essentially similar apart from the service area mentioned, we focus the remainder of the presentation on the school experiment.

All groups were asked to evaluate fictitious information regarding parents' satisfaction with two schools. The treatment and placebo groups differed from one another as to the presence of a sector cue. We asked the treatment groups to evaluate information on the performance of public and private schools, whereas the placebo groups were asked to evaluate the performance of schools named A and B. "Don't know"-responses were not an option for any of the groups, and the respondents were thus forced to provide their best estimate of which of the two schools performed best. Figure 2 presents the differences and similarities between the groups.[29]

Figure 2 about here

A conversion of the satisfaction data from absolute to relative numbers reveals that in all experimental groups one school has a satisfaction rate of 84 percent, whereas the rate is only 75 percent for the other, and the information is therefore unambiguous in the sense that there is only one correct interpretation of the information. The only difference between the treatment groups is that the numbers in the rows have been switched meaning that the private school is performing better in treatment 1, while the public is performing better in treatment 2. Because of the existence of a correct and an incorrect answer, it is possible to test H_1 by investigating the relationship

between respondents' prior attitudes and their ability to correctly interpret the information in the different experimental groups.[30]

No sector cue was given to the placebo groups. Therefore, no relationship between respondents' prior attitudes and their ability to correctly interpret the information is expected to exist in those experimental groups according to theory (for instance, it is hard to imagine that anyone will have a general, ideologically based preference for a "school A" over a "school B"). However, as was explained above, the balance between public and private service provision is a highly contested issue, and therefore some people do prefer public schools over private ones and vice versa. As a result, a relationship between respondents' prior attitudes and their ability to correctly interpret the information is expected to exist in the treatment groups. Respondents are expected to be more susceptible to the information when it reinforces their prior attitudes than when this is not the case, and thus, H1 can be tested by investigating whether the impact of respondents' prior attitudes is significantly stronger in treatment groups than in placebo groups.

Experiment 1 and 2: Analysis

The data from experiment 1 and 2 is analyzed by means of logistic regression analysis. Interaction terms between prior attitudes and whether respondents were presented with treatment or placebo group information are used to test whether attitudes have the expected different impact on treatment and placebo groups. The analysis is carried out in two steps for each experiment: one where treatment group 1 is compared with placebo group 1; and one where treatment group 2 is compared with placebo group 2. The findings are presented in Table 1, where models 1–4 show findings from the politician sample, while models 5–8 show findings from the citizen sample. Between 73 and 77 percent of the politicians in the placebo groups provide correct

answers, which is significantly higher than random guessing ($p < 0.001$ for all placebo groups). This indicates that the politicians do actually put an effort into investigating the information properly. Moreover, our analyses show that prior attitudes do not affect success rates significantly in any of the placebo groups (see Table A1 in the appendix for significance tests within each treatment and placebo group). Thus, we conclude that these groups have indeed been designed in a manner that assures that interpretations are independent of prior attitudes to public/private service provision.

Table 1 about here

The findings in Table 1 generally support the proposition that attitudes matter to how politicians interpret information and that politicians to a higher extent tend to misinterpret information, the more the information is at odds with their prior attitudes. Thus, in three out of four logistic regressions on the politician sample, the interaction terms are statistically significant and point in the direction predicted by the theory. Specifically, Models 1 and 3 show that the likelihood of interpreting information correctly when a private supplier has the highest satisfaction rate is higher for politicians who support private sector production. Conversely, Model 2 shows that the likelihood of interpreting information correctly when a public organization has the highest satisfaction rate is higher for politicians supporting public sector production. Finally, the interaction term points in the expected direction but is statistically insignificant ($p<0.118$) in Model 4. A similar, though slightly weaker, pattern is found in the citizen sample. Evidence of biased reasoning among citizens exists in the school experiment but not in the less politicized road experiment. Further tests (reported in Table A2) show that the results from the two samples are not significantly

different from one another. Thus, prior attitudes appear to have an impact of about similar magnitude for politicians and citizens.

In order to give a better impression of the substantial significance of the findings, Figure 3 depicts the impact of attitudes on the share of politicians who successfully chose the best performing supplier in the treatment groups. Panels 3a and 3b show the results for experiment 1, while panels 3c and 3d provide evidence from experiment 2.

Figure 3 about here

Figure 3 shows a very clear tendency for politicians to interpret information differently depending on their prior attitudes. Thus, for politicians who receive information in accordance with their prior attitudes, a very high percentage (84–98%) interprets the information correctly. In contrast, politicians who receive information that is most at odds with their prior attitudes only interpret the information correctly 38-61% of the time. The difference in correct interpretations between those who are confirmed and those who are disconfirmed by the information thus amounts to up to 51 percentage points in panels 3a-c. In sum, the findings lend substantial support to the theoretical expectation that it harms politicians' ability to interpret information correctly if the information is at odds with their prior attitudes.

Experiment 3: Does the Amount of Evidence Affect Interpretation?

The third experiment tests whether the impact of prior attitudes on interpretations is contingent on the amount of evidence that politicians are presented with (H_2). Thus, the experiment is designed to create variation in the amount of information that politicians are presented with, whereas other factors like the strength of the evidence are kept constant across experimental groups. The information provided resembles the information given in the first two experiments by being simplistic and unambiguous in the sense that there is once again only one mathematically correct answer in each experimental group. This allows us to use the same dependent variable, "correct answer", as was used in experiment 1 and 2. Again, "don't know"-responses were not an option, and the respondents in all groups were therefore forced to provide their best estimate of which of two providers performed best.

Like in the first experiments, we also use attitudes to public service provision as independent variable. However, in this experiment, we use information on whether rehabilitation after injuries has been successful or unsuccessful in private and public rehabilitation centers. In Denmark, rehabilitation is an important service for which local politicians are overall responsible regardless of whether the service is provided by public or private providers.

The experiment uses simple randomization of respondents in a 3 x 2 factorial design in which the amount of information varies according to the number of information pieces that politicians are presented with (1, 3, or 5). Moreover, we distinguish between experimental groups where the relative number of successful rehabilitations is highest for either a public or a private provider. This design once again allows us to take into account the possibility that prior attitudes may potentially be correlated with the ability to correctly interpret information. In order to keep the number of experimental groups as low as possible and since the main aim of this experiment is to examine whether the impact of attitudes differs depending on the amount of information, the experiment does not use placebo groups like in experiment 1 and 2. The experimental design is

illustrated in Figure 4.[31] It shows the information presented to respondents in the three experimental groups where the private provider had more successful rehabilitations. The three remaining groups, which are not shown in the figure, were created by simply switching the numbers for public and private organizations.

Figure 4 about here

A conversion of the data shows that for all types of injuries around 83 percent of the rehabilitations are successful for the one provider (in the example shown it is the private), while only approximately 75 percent are successful for the other (the public provider in this example). Thus, new information pieces added do not increase the relative strength of evidence but only the amount of evidence in the sense that more rehabilitation services are included in the information.

Experiment 3: Analysis

In order to test the hypothesis that the impact of attitudes can be reduced by increasing the amount of information, we create interaction terms between prior attitudes and the amount of information received. Since our dependent variable is dichotomous, we once again rely on logistic regression analysis. The findings are presented in Table 2. Results from the politician sample are presented in Models 1 and 2, while results from the citizen sample are presented in Models 3 and 4.

Table 2 about here

Consistent with the findings from the first two experiments, experiment 3 shows evidence that attitudes matter to interpretations. In both Model 1 and 2, the statistically significant coefficient for prior attitudes tells that among those politicians who have received only one piece of information, those who receive information that is at odds with their prior attitudes interpret the information correctly to a much lesser extent. Moreover, the analysis does lend some support to the proposition that the impact of attitudes on interpretation is contingent on the amount of information presented. The negative interaction terms in Model 1 show that the negative association between preferring the public sector and being able to correctly interpret the information becomes stronger when the amount of evidence grows. Hence, contrary to what we expected, the results point to the conclusion that the impact of attitudes tends to grow as the amount of information increases. Only the interaction term between five pieces of information and prior attitudes is significantly different from the reference group on a .05-level, whereas the interaction term based on three pieces of information is insignificant ($p < 0.068$). A similar pattern is shown by the positive coefficients for prior attitudes and the interaction terms in Model 2, albeit the interaction terms here are clearly insignificant. Moving to the citizen sample in Table 2 (Models 3 and 4), neither do we find evidence that the impact of attitudes is moderated by the amount of information received, nor do we find evidence that information load increases the impact of attitudes to a significantly different extent in the politician and citizen sample (see Table A3, Models 2 and 4 in the appendix for the regression analysis). Moreover, across treatments, attitudes have a similar impact on interpretations in the politician and the citizen sample (see Table A3 Model 1 and 3 in the appendix for the regression analysis).

To get a better impression of the findings from the politician sample, we once again distinguish between those politicians who are most in favor of public and those who are most in favor of private service provision, and we illustrate the findings graphically in Figure 5.

Figure 5 about here

Looking first at panels 5a-c where the private provider performs best, the difference in correct answers between politicians whose attitudes are most in accordance and most at odds with their prior attitudes increases from 28 to 50 percentage points when increasing the amount of information from one to five pieces. An increase of roughly the same size can be observed in panels 5d-f where the public provider performs best. Thus, the increases are of substantial magnitude. Moreover, it is clear from Figure 5 that the effect of adding more information is mainly driven by an increase in correct interpretations of the politicians who are presented with information in accordance with their prior attitudes (an increase from an estimated 77% in the group that receives one piece of information to 92% in the group that receives five pieces of information). In contrast, estimated correct interpretations of politicians who face information at odds with their prior attitudes do not change much.

In conclusion, the evidence does not support hypothesis 2 according to which increasing the amount of information should reduce the impact of politicians' attitudes. The findings are more consistent with a pattern where the impact of attitudes grows as the amount of evidence increases. However, this latter conclusion should be taken with some caution since the interaction terms in Table 2, Model 2, are not statistically significant.

Discussion

It is conventional scholarly knowledge that the prior attitudes and beliefs of citizens matter to how they perceive and interpret new information.[32] Our analysis shows that this also applies to politicians. This is not a trivial conclusion given that politicians hold electoral responsibilities and are used to processing large amounts of complex information related to their work. Therefore, our first main conclusion is that the interpretation of even unambiguous information in political decision-making is not a neutral process but one in which attitudes matter to a high extent. Noteworthy, this finding not only applies to politicized policy areas like schools but also to less politicized areas like road maintenance.

Moreover, our third experiment shows that attitudes matter even more when politicians are presented with increasing amounts of evidence. The findings are too inconclusive to allow for the conclusion that politicians become less able to interpret information correctly when presented with larger amounts of attitude-incongruent information. While the analysis does seem to indicate that this may be the case, the decrease in respondents' ability to interpret information correctly following an increase in the amount of counter-attitudinal evidence is statistically insignificant. Hence, in Bullock's words, across all politicians there is evidence of increasing divergence when the amount of information increases, whereas it is less certain that this divergence comes about with increasing polarization.[33] What we can say for certain is therefore that adding evidence has no positive impact on the extent to which a large group of politicians interpret information correctly. In addition, those affected are mainly the ones whose prior attitudes are reinforced by the information. Like Nyhan and Reifler who find that corrections of false and unsubstantiated beliefs among citizens may even backfire and lead to increasing misperceptions,[34]

our findings lend doubts about the potential of factual information as a means to rationalizing political decision-making, although we cannot conclude that increasing the amount of information may even decrease the ability to interpret the information correctly.

While our findings are clear in terms of demonstrating an impact of attitudes on politicians' interpretation of information, they do raise the question of why this is so. The experiments are not explicitly designed to uncover the mechanisms linking attitudes to interpretations, but they do offer hints as to what is the most likely explanation. The findings in our first two experiments are consistent with directionally motivated reasoning, but it is worth mentioning alternative explanations. Most prominently, a Bayesian updating perspective would suggest that politicians, when presented with new information about public and private suppliers, should interpret the information in light of their prior knowledge and experience with the public and private sector.[35] Thus, they may actually react to the new information by adjusting their attitudes—but to different degrees. If the politicians have knowledge or strong beliefs about how private and public schools in general are performing (e.g. with regard to other measures than parent satisfaction), they may give weight to those beliefs as well when assessing whether a private or public organization performs best. Hence, we cannot entirely exclude the possibility that the effects observed in our first two experiments are a result of Bayesian updating although we consider motivated reasoning a more likely explanation given the fact that respondents were explicitly asked to base their assessment solely on the presented information.

Moreover, although Bayesian updating is a potential alternative explanation of our findings in the first two experiments, it cannot explain the findings in the third experiment where the addition of more information makes attitudes matter more to the politicians' interpretations. Thus, according to Bayesian updating, individuals are expected to react to each new piece of information by adjusting their beliefs although maybe to varying degrees due to variation in the

strength of people's prior attitudes and their perception of the reliability of the information at hand. Instead, we find that adding information for a large group of politicians has no positive impact on their ability to interpret the information correctly. Our findings even indicate that adding information may for some politicians have a negative effect on their ability to interpret the information correctly.

Another possible concern is that answering pre-experimental items about ideologically based attitudes towards public vs. private welfare provision may have made these attitudes extra salient in our respondents' minds when answering our experimental items, and that this may have increased the treatment effects in our experiments. In order to make our tests as conservative as possible, a number of unrelated items were included between the attitude measurement and our experiments, but we cannot reject the possibility that the attitude items may to some degree have affected our results. However, political cues and fights over attitudes are inherent aspects of real world policymaking, and it seems unlikely that attitudes are less salient in the real world political decision-making processes we are interested in than in our experiments. Thus, despite possible priming effects of our attitude measurement, we consider our tests to be conservative in this respect.

Finally, it could be argued that the results are a product of heuristic decision making rather than motivated reasoning. The theory of heuristic processing suggests that individuals, when faced with complex problems, will look for cues to ease the decision making. In our case the cue would be whether an organization is public or private and the perception of the cue would depend on the politicians' prior attitudes and beliefs. However, regardless of whether the findings are caused by motivated reasoning, heuristic decision making or some mix of the two, it does not change the main finding that attitudes bias how politicians interpret information, and the policy-implications are the same regardless of the specific psychological mechanisms behind our results.

Now, how can it be that the addition of additional evidence increases divergence between politicians with different prior beliefs, even in a case like ours where the information is unambiguous? There might be several possible explanations of the findings. First, the increase in divergence may be explained by dissonance theory according to which people in general are motivated to avoid situations with cognitive dissonance because dissonance is an uncomfortable state of mind.[36] One could argue that people would experience an even larger cognitive dissonance when being confronted with more information at odds with their values and beliefs than when confronted with less information. Hence, the motivation for a biased interpretation might be stronger and lead to boomerang effects. This explanation is also consistent with the finding that the ability to interpret the information correctly increases among those politicians who find their prior attitudes supported by the information. For these politicians, the additional information will help to reduce uncertainty and increase their confidence in the correct interpretation.

Second, the addition of extra evidence may create information overload by confronting politicians with more information than they are able to cope with. The literature on information overload is concerned with the limits of people's cognitive capacity, and studies from this literature show that too much information can reduce the quality of people's decision-making.[37] Facing large amounts of information, people will develop strategies that enable them to avoid getting overwhelmed by the fact that the information processing requirements of a given situation exceed the information processing capacity available in the situation, for instance by becoming selective as to what information to focus on.[38] The overload literature suggests that such selection mechanisms are not random but biased by prior cognitive structures and expectations: "People tend to favor information that fits with their established way of thinking, preferring to improve their access to information already obtained at the expense of reassessing what information is really

required",[39] and this selective focus leads to the risk that "(…) in overload situations, important but unexpected cues are more likely to be missed".[40]

In contrast to the two previous potential explanations that are based on heuristic peripheral processing, a third possible explanation is based on central systemic processing. Kahan provides evidence that the disposition to engage in central systemic processing may strengthen directionally motivated reasoning.[41] Increasing the load of information in our experiment may have increased the need for systemic processing (simply because there is more information to process) and thus in turn have led to more directionally motivated reasoning. Our study does not allow us to conclude whether the increase in divergence among politicians is due to cognitive dissonance, information overload, increased systemic processing, or something else. Future research is therefore encouraged to develop designs that allow for a closer examination of the mechanisms behind the findings.

Finally, we should touch upon the extent to which the findings generalize. Information about aspects of organizational performance like the scores on satisfaction and health care treatments that were presented to our respondents are widespread in public sectors in many countries.[42] However, the fictitious and stylized nature of the evidence in the experiments may have implications for the external validity. In relation to this, Prior, Sood, and Khanna provide evidence that partisans tend to treat factual questions like opinion questions when responding to surveys.[43] From this perspective, more accurate representations of the impact of prior attitudes may be found when more is at stake. Related to the discussion of external validity is also our pool of respondents. We focus on local politicians who, though highly partisan, might not be pursuing a political career to the same extent as politicians running for seats at national parliaments. Based on these considerations, we encourage future research to vary the stakes in studies of the interplay between prior beliefs and evidence[44] and to test effects on members of national parliaments as well.

Conclusion

This article is the first to study in large-scale survey experiments how political elites interpret information and to compare this with a representative citizen sample. Overall, the article makes three main contributions. First, it contributes by showing that politicians like citizens tend to base their interpretation of new information on their prior attitudes and beliefs. Hence, a main finding is that politicians do not differ fundamentally from citizens when interpreting new evidence despite that they are politically sophisticated individuals with a lot of experience in processing complicated information. Overall, the finding is consistent with directionally motivated reasoning,[45] while rational approaches like Bayesian updating may explain the findings in the first two experiments but are less likely candidates in experiment 3 given the fact that adding information even tends to have a negative impact on correct interpretations for some politicians.

Second, the article contributes to our knowledge of the role of evidence in politics. Contrary to our expectations, we find that adding more evidence increases the impact of attitudes on politicians' interpretations of information. This effect is mainly driven by those who receive information that is in accordance with their prior attitudes and beliefs. Accordingly, evidence does not appear to persuade those politicians with attitudes that are not reinforced by the information. Thus, evidence does not tend to build bridges across parties and politicians of various ideological orientations. Rather, evidence reinforces the importance of various political beliefs and may even create increased political conflict.

Third, the findings add to the growing literature on how contextual factors affect how individuals perceive facts and information. Previous research has focused on how perceptions and interpretations are contingent on, for instance, media coverage[46] and the distribution of economic

facts.[47] Consistent with this research, the findings in this article may be interpreted as evidence that a different aspect of the information environment matters as well in the sense that political systems that produce large amounts of policy evidence may be more likely to experience differences in how the same pieces of information are interpreted by politicians with different ideological orientations.

Our findings call for further research. If adding more evidence does not reduce the impact of attitudes but actually increases it, future research should focus on three questions: First, how can it be that adding more evidence increases the impact of attitudes? Second, if increasing the amount of evidence does not reduce the impact of attitudes, how can we then reduce it? Third, how can we ensure nuanced interpretations of evidence regardless of prior attitudes and beliefs? Regarding the latter questions, several strategies have been suggested as means to correct biases stemming from prior beliefs.[48] A set of promising studies have shown that holding individuals accountable for their interpretation reduces different kinds of biases.[49] However, we should be careful with extrapolating such findings to politicians as contributors to existing accountability literature have primarily relied on student and citizen samples when conducting empirical tests. Therefore, future research should investigate the effect of accountability on politicians and whether this effect is stronger under some circumstances than under others. For instance, accountability could be more important if there is a real chance that it affects politicians' chances of being re-elected. Thus, we would expect stronger effects of accountability on policy areas more salient to large shares of the electorate.

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Tables

Table 1: *The Effect of Prior Attitudes on Correct Interpretations (Logistic Regression Analysis)*

	Politician sample				Citizen sample			
	Model 1 Schools; Treatment 1/placebo 1	Model 2 Schools; Treatment 2/placebo 2	Model 3 Roads; Treatment 1/placebo 1	Model 4 Roads; Treatment 2/placebo 2	Model 5 Schools; Treatment 1/placebo 1	Model 6 Schools; Treatment 2/placebo 2	Model 7 Roads; Treatment 1/placebo 1	Model 8 Roads; Treatment 2/placebo 2
Prior attitudes (pro public sector)	-0.84	0.76	-0.17	-0.27	0.14	-0.74	-0.55	0.27
	(0.69)	(0.74)	(0.61)	(0.64)	(0.65)	(0.71)	(0.69)	(0.70)
Treatment dummy	1.97*	-1.12	1.04	-0.94	1.24	-2.14**	0.21	-0.02
	(1.00)	(0.67)	(0.69)	(0.65)	(0.64)	(0.64)	(0.60)	(0.65)
Prior attitudes × treatment	-2.63*	2.02*	-2.44**	1.52	-2.42*	4.05***	-0.72	0.40
	(1.21)	(1.01)	(0.93)	(0.97)	(1.00)	(1.01)	(0.97)	(1.05)
Intercept	1.75**	0.79	1.09*	1.39**	0.63	1.05*	0.74	0.54
	(0.51)	(0.49)	(0.47)	(0.45)	(0.42)	(0.44)	(0.41)	(0.42)
Wald chi^2	15.05**	17.54***	17.04***	3.18	9.14*	18.64***	4.97	1.53
N	245	242	226	230	249	251	251	255

Note: The dependent variable measures whether respondents identify the supplier with the highest rate of satisfaction as being the one that performs the best ***;**;*: P<0.001; 0.01; 0.05; two-sided significance tests. Entries are logistic regression coefficients. Robust standard errors in parentheses.

Table 2: *The Effect of Information Load on Interpretation (Logistic Regression Analysis)*

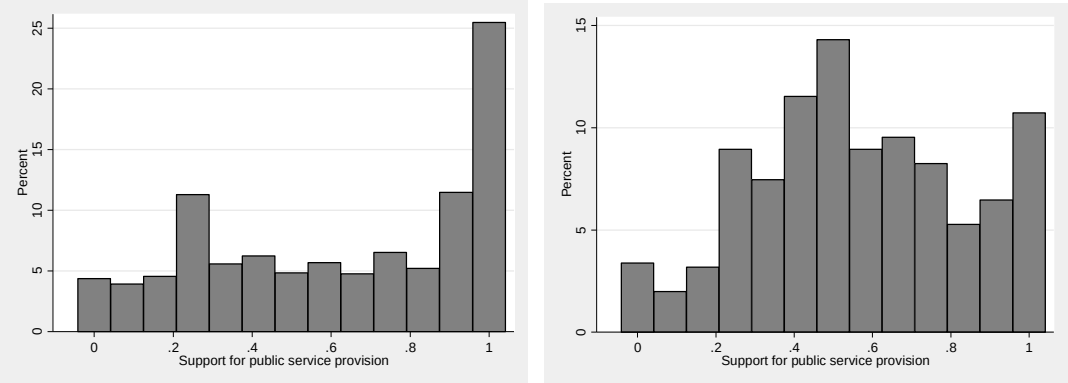
	Politician Sample:		Citizen sample:	
	Model 1 Private provider performing better	Model 2 Public provider performing better	Model 3 Private provider performing better	Model 4 Public provider performing better
Prior attitudes (pro public sector)	-1.25* (0.48)	1.90** (0.56)	-1.85** (0.60)	3.36*** (0.67)
Amount of information				
- One piece of information	Ref.	Ref.	Ref.	Ref.
- Three pieces of information	1.10 (0.59)	-0.07 (0.50)	0.69 (0.57)	0.70 (0.58)
- Five pieces of information	1.27* (0.59)	-0.39 (0.52)	-0.38 (0.52)	0.43 (0.58)
Effect of adding information				
- One piece x Prior attitudes	Ref.	Ref.	Ref.	Ref.
- Three pieces x Prior attitudes	-1.42 (0.78)	0.16 (0.79)	-1.33 (0.92)	-1.17 (0.93)
- Five pieces x Prior attitudes	-1.56* (0.75)	1.32 (0.91)	0.47 (0.84)	-0.42 (0.95)
Intercept	1.23** (0.36)	-0.18 (0.35)	1.33*** (0.37)	-1,42** (0.43)
Wald chi^2	50.10***	45.35***	36.09***	55.77***
N	494	460	499	507

Note: The dependent variable measures whether respondents identify the provider with the highest rehabilitation success rate as being the one that performs best. ***;**;*: P<0.001; 0.01; 0.05; two-sided significance tests. Entries are logistic regression coefficients. Robust standard errors in parentheses.

Figures

Figure 1: *Distribution of pro public sector attitudes*

Panel A: Politician sample *Panel B: Citizen sample*



Note: The x-axis runs from 0-1 with 1 denoting the maximum support for public service provision.

Figure 2: *Treatment and Placebo Groups in Experiment 1*

	Number of satisfied parents	Number of dissatisfied parents
Public school	107	32
Private school	47	9

A (Treatment 1)

	Number of satisfied parents	Number of dissatisfied parents
Public school	47	9
Private school	107	32

B (Treatment 2)

	Number of satisfied parents	Number of dissatisfied parents
School A	107	32
School B	47	9

C (Placebo 1)

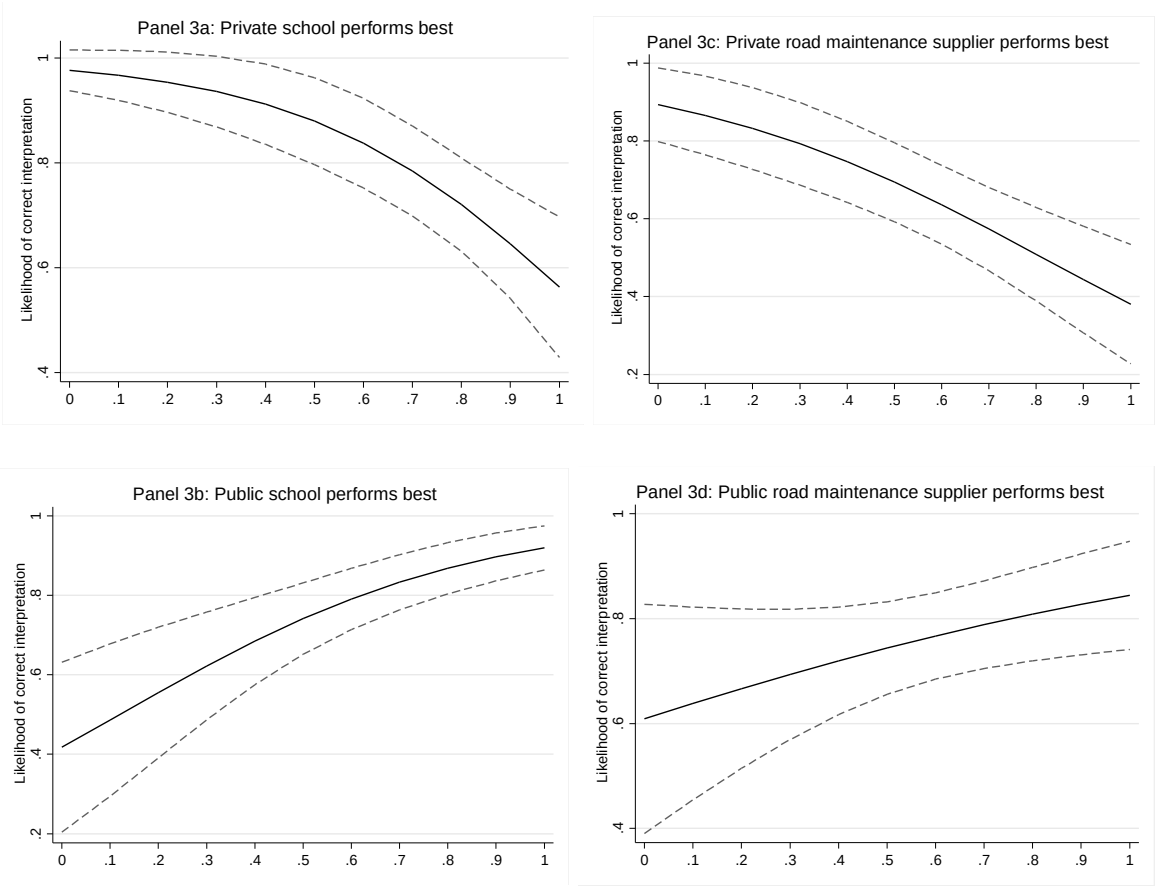
	Number of satisfied parents	Number of dissatisfied parents
School A	47	9
School B	107	32

D (Placebo 2)

Note: Respondents were randomly assigned to one of the four conditions shown in the figure.

Figure 3: *Relationship between prior attitudes and correct interpretations in treatment groups. Politician sample.*

Experiment 1: Experiment 2:



Note: Estimated relationships with 95% confidence intervals. The x-axis runs from 0-1 with 1 denoting the maximum support for public service provision.

Figure 4: *Experimental Groups in Experiment 3*

"Now, we want you to consider the following fictitious example.

Below you see a table showing numbers concerning two providers of rehabilitation of patients who have been discharged from hospital to rehabilitation in the municipally. The table shows, for each provider, the number of patients who have and have not obtained the desired health effect of the rehabilitation."

Respondents who only got one piece of information saw this single line:

	Public provider of service		**Private provider of service**	
	Number of patients who have obtained the desired effect	Number of patients who have not obtained the desired effect	Number of patients who have obtained the desired effect	Number of patients who have not obtained the desired effect
Rehabilitation after cruciate ligament injury	206	69	106	21

For respondents in the group with three pieces of information, the following two lines appeared underneath the first line.

Rehabilitation after ankle-stabilizing operation	136	45	71	13
Rehabilitation after fracture in the elbow	164	55	78	15

For respondents in the group with five information pieces, the following two lines appeared underneath the first three lines.

Rehabilitation after wrist operation	143	48	74	14
Rehabilitation after shoulder arthroscopy	184	62	98	19

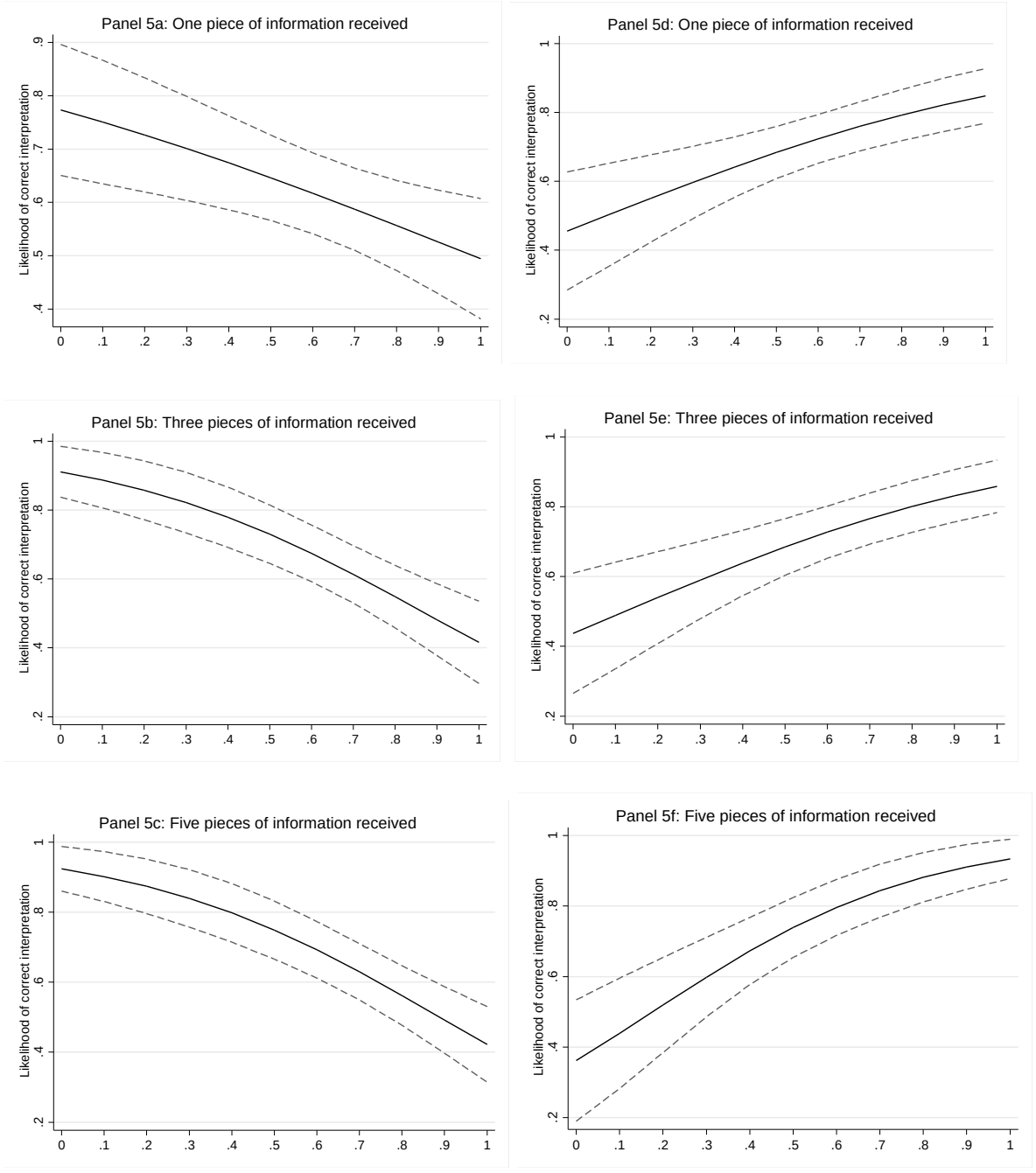
After the table, the politicians where asked the following question:

"*Based on this table, which provider do you evaluate as best performing?*"

Note: The figure illustrates the experimental design for those three groups in experiment 3 where the private provider had the highest relative number of rehabilitation successes.

Figure 5: *Information Load, Attitudes, and Correct Interpretations. Politician sample*

Private provider best | Public Provider best



Note: Estimated relationships with 95% confidence intervals. The x-axis runs from 0-1 with 1 denoting the maximum support for public service provision.

Appendix

Table A1: *The Effect of Prior Attitudes on Correct Interpretations (Logistic Regression Analysis)*

Panel A: Politician sample

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Pro public sector	-3.47*** (0.99)	2.77*** (0.68)	-0.84 (0.69)	0.76 (0.74)	-2.61*** (0.71)	1.25 (0.73)	-0.17 (0.61)	-0.27 (0.64)
Intercept	3.72*** (0.86)	-0.33 (0.45)	1.75** (0.51)	0.79 (0.50)	2.13*** (0.51)	0.44 (0.47)	1.09* (0.47)	1.39** (0.45)
Wald Chi^2	12.19***	16.43***	1.47	1.03	13.72***	2.91	0.08	0.18
n	127	124	118	118	106	107	120	123
Data	Schools; T1	Schools; T2	Schools; P1	Schools; P2	Roads; T1	Roads; T2	Roads; P1	Roads; P2

Panel B: Citizen sample

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Pro public sector	-2.28** (0.77)	3.31*** (0.79)	0.14 (0.65)	-0.74 (0.72)	-1.27 (0.68)	0.67 (0.78)	-0.55 (0.69)	0.27 (0.70)
Intercept	1.87*** (0.48)	-1.09* (0.47)	0.63 (0.43)	1.05* (0.44)	0.96* (0.44)	0.52 (0.49)	0.74 (0.42)	0.54 (0.42)
Wald Chi^2	8.80**	17.48***	0.05	1.08	3.50	0.74	0.64	0.15
n	121	126	128	125	128	126	123	129
Data	Schools; T1	Schools; T2	Schools; P1	Schools; P2	Roads; T1	Roads; T2	Roads; P1	Roads; P2

Note: The dependent variable measures whether respondents identify the supplier with the highest rate of satisfaction as being the one that performs best. ***;**;*: P<0.001; 0.01; 0.05; two-sided significance tests. Entries are logistic regression coefficients. Robust standard errors in parentheses.

Table A2: *Differences between politician and citizen responses to experiment 1 and 2*

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Prior attitudes (pro public sector)	0.14 (0.65)	-0.74 (0.71)	-0.55 (0.69)	0.27 (0.70)	-2.28** (0.77)	3.31*** (0.79)	-1.27 (0.68)	0.67 (0.78)
Politician dummy	1.12 (0.66)	-0.26 (0.66)	0.34 (0.62)	0.84 (0.61)	1.85 (0.98)	0.76 (0.65)	1.17 (0.67)	-0.08 (0.68)
Treatment dummy	1.24 (0.64)	-2.14** (0.64)	0.21 (0.60)	-0.02 (0.65)	--	--	--	--
Prior attitudes x politician	-0.98 (0.94)	1.50 (1.03)	0.38 (0.92)	-0.55 (0.95)	-1.19 (1.25)	-0.53 (1.04)	-1.34 (0.98)	0.57 (1.07)
Prior attitudes x treatment	-2.42* (1.00)	4.05*** (1.06)	-0.72 (0.97)	0.40 (1.05)	--	--	--	--
Politician x treatment	0.73 (1.18)	1.02 (0.93)	0.83 (0.91)	-0.92 (0.91)	--	--	--	--
Prior attitudes x politician x treatment	-0.21 (1.57)	-2.03 (1.47)	-1.72 (1.34)	1.12 (1.43)	--	--	--	--
Intercept	0.63 (0.43)	1.05* (0.44)	0.74 (0.41)	0.54 (0.42)	1.87*** (0.48)	-1.09* (0.47)	0.96* (0.44)	0.52 (0.49)
Wald Chi^2	27.31***	43.43***	26.00***	8.15	21.80***	36.99***	17.91***	4.22
N	494	493	477	485	248	250	234	233
Data	Schools; T1, P1	Schools; T2, P2	Roads; T1, P1	Roads; T2, P2	Schools; T1	Schools; T2	Roads; T1	Roads; T2

Note: The dependent variable measures whether politicians identify the supplier with the highest rate of satisfaction as being the one that performs best. ***;**;*: P<0.001; 0.01; 0.05; two-sided significance tests. Entries are logistic regression coefficients. Robust standard errors in parentheses.

Table A3: *Differences between politician and citizen responses in experiment 3*

	Model 1 Private provider performs best	Model 2 Private provider performs best	Model 3 Public provider performs best	Model 4 Public provider performs best
Prior attitudes (pro public)	-2.076*** (0.360)	-1.854** (0.590)	2.805*** (0.385)	3.358*** (0.669)
Politician	0.53 (0.328)	-0.107 (0.512)	0.719* (0.314)	1.241* (0.552)
One piece of information	Ref.	Ref.	Ref.	Ref.
Three pieces of information	0.018 (0.165)	0.687 (0.568)	-0.052 (0.171)	0.699 (0.579)
Five pieces of information	0.030 (0.167)	-0.376 (0.522)	0.224 (0.179)	0.432 (0.583)
Prior attitudes x Politician	-0.068 (0.476)	0.604 (0.763)	-0.503 (0.515)	-1.460 (0.876)
Three pieces x Prior attitudes		-1.330 (0.919)		-1.171 (0.932)
Five pieces x Prior attitudes		0.470 (0.836)		-0.421 (0.948)
Three pieces x Politician		0.416 (0.816)		-0.773 (0.766)
Five pieces x Politician		1.649* (0.784)		-0.821 (0.779)
Prior attitudes x Three pieces x Politician		-0.089 (1.202)		1.328 (1.222)
Prior attitudes x Five pieces x Politician		-2.028 (1.124)		1.740 (1.315)
Constant	1.381*** (0.241)	1.335*** (0.366)	-1.120*** (0.260)	-1.419** (0.425)
Wald chi^2	83.40	88.04	104.77	105.79
n	993	993	967	967

Note: The dependent variable measures whether respondents identify the provider with the highest rehabilitation success rate as being the one that performs best. ***;**;*: P<0.001; 0.01; 0.05; two sided significance tests. Entries are logistic regression coefficients. Robust standard errors in parentheses.

Notes

[1] Support for this research was provided by the Aarhus University Supplementary Pool. An online appendix is available at the journal website while replication data, and a replication do file is available at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/FKWZHF.

[2] Moynihan 2008; Van Dooren 2011.

[3] See, e.g., Jerit and Barabas 2012; Kunda 1987, 1990; Lodge and Taber 2000; 2013; Parker-Stephen 2013; Taber, Cann, and Kucsova 2009; Taber and Lodge 2006; James and Van Ryzin 2016.

[4] See, e.g., Lodge and Taber 2013, 159; Strickland, Taber, and Lodge 2011.

[5] Kunda 1990, 482.

[6] Redlawsk, Civettini, and Emmerson 2010.

[7] Kunda 1987, 1990; Lodge and Taber 2013, 150; Taber and Lodge 2006.

[8] Kunda 1990.

[9] Taber and Lodge 2006.

[10] Kunda 1987; Wyer and Frey 1983.

[11] Druckman 2012; Jerit and Barabas 2012; Kahan et al. 2013; Lodge and Taber 2013; Taber, Cann, and Kucsova 2009; Taber and Lodge 2006.

[12] Lodge and Taber 2013, 159; Strickland, Taber, and Lodge 2011; Taber and Lodge 2006.

[13] Kahan 2013.

[14] See Garrett (forthcoming) for a discussion of different strategies of countering misperceptions of scientific facts generally and facts about climate change specifically.

[15] Festinger 1957, 243.

[16] Redlawsk, Civettini, and Emmerson 2010, 583.

[17] Redlawsk, Civettini, and Emmerson 2010, 581.

[18] Petty and Cacioppo 1984; 1986.

[19] Maddux and Rogers 1980, 237.

[20] Steffens et al. 2013, 403.

[21] See, e.g., Hart and Nisbet 2012; Nyhan and Reifler 2010; Nyhan, Reifler, and Ubel 2013.

[22] Chong and Druckman 2007.

[23] Baekgaard 2010.

[24] Lodge and Taber 2013.

[25] Andersen and Hvidman 2016; Baekgaard and Serritzlew 2016.

[26] The three questions were:*"To what extent do you agree or disagree to the following statements?*

1. *Many public activities could be produced both better and cheaper by private providers*
2. *We should to a larger degree outsource public services (such as child care, elderly care, and hospital treatments)*
3. *The public sector is best at providing public services " (reversed when constructing the index)*

Possible responses were: Completely agree, partly agree, neither agree nor disagree, partly disagree, completely disagree, or don't know. In the factor analysis, factor scores were all above 0.8 for the politicians and above 0.7 for the citizens. The index has a Cronbach's Alpha of 0.92 for the politicians and 0.85 for the citizens.

[27] Kahan et al. 2013; Baekgaard and Serritzlew 2016.

[28] Balance tests (Table S3, S4, S6, and S7 in the supplementary material) show that some experimental groups are imbalanced with regard to gender, age, preference for public vs. private sector, and party affiliation. Robustness tests (also reported in the supplementary material in Table S9) do, however, show that our findings are not substantially altered if we control for these variables.

[29] Respondents were presented with the following instruction which was in turn followed by the experimental condition shown in Figure 2: "Now, we want you to consider the following fictitious example.
Below you can see a table showing the satisfaction with two schools. The numbers are based on satisfaction surveys and show how many parents who are partly or completely satisfied, and how many who are partly or completely dissatisfied with the education at the school. The composition of both students and parents at the two schools were highly comparable. Based on this information, which school do you evaluate as best performing?"

[30] Note that we do not test whether respondents update their general attitudes towards public vs. private welfare provision based on the information provided in the experiment but whether respondents' opinions influence the ability to correctly interpret specific information about specific suppliers of a public service.

[31] A balance test (Table S5 in the supplementary material) shows that all experimental groups balance in terms of age, gender, education, years of membership in current party, years of membership in a city council, the proportion who are members of a municipal finance committee, the proportion who are parents to children who go to school, preferences for public vs. private service provision, and party affiliation. Likewise, the experimental groups are balanced in the citizen sample (see Table S8 in the supplementary material).

[32] See, e.g., Baekgaard and Serritzlew 2016; Kahan et al. 2013.

[33] Bullock 2009.

[34] Nyhan and Reifler 2010.

[35] Barabas 2004; Bullock 2009; Gerber and Green 1999.

[36] Festinger 1957.

[37] Eppler and Mengis 2004; Reyna et al. 2009; Schick, Gordon, and Haka 1990.

[38] Swain and Haka 2000.

[39] Schultze and Vandenbosch 1998, 143.

[40] Schultze and Vandenbosch 1998, 131.

[41] Kahan 2013.

[42] Van Dooren 2011.

[43] Prior, Sood, and Khanna 2015.

[44] For instance by means of monetary incentives like in Prior, Sood, and Khanna 2015.

[45] See, e.g., Baekgaard and Serritzlew 2016; Kahan et al. 2013; Lodge and Taber 2013; Taber, Cann, and Kucsova 2009; Taber and Lodge 2006.

[46] Jerit and Barabas 2012.

[47] Parker-Stephen 2013.

[48] See, e.g., Garrett forthcoming.

[49] For a review, see Lerner and Tetlock 1999.