Communication, Influence, and Informational Asymmetries among Voters

T. K. Ahn
Florida State University and Korea University

Robert Huckfeldt
University of California, Davis

John B. Ryan
University of California, Davis

Abstract

Informational asymmetries occur frequently and systematically within political communication networks, and this paper focuses on the implications for the quality of political judgments, as well as for political influence among citizens. Political information often comes at a cost to individual citizens, and this cost is likely to vary quite dramatically across individuals. As a consequence, some individuals become politically expert, while others demonstrate persistently low levels of political knowledge and awareness. Among those citizens for whom information is prohibitively costly, one attractive lower cost alternative is to rely upon the political advice of other individuals who are experts. A problem arises with respect to the utility of such expert opinion, particularly in situations where the respective preferences of the informant and recipient are divergent. Within this context, we employ an experimental platform to undertake an analysis of cost conscious, goal oriented subjects who must obtain information on political candidates to realize their goals. The experimental design provides an opportunity to address a range of questions. How important is individually purchased information to the subjects' assessments of the candidates? Is more information better than less information? How does the utility of this information compare to the utility of information obtained from other subjects? What are the criteria imposed by subjects in their search for other subjects who will be useful information providers?

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Political Judgment, Informational Asymmetries, and Influence among Citizens

The costs of becoming politically informed are highly variable across individuals. As Wolfinger and Rosenstone (1980) suggest, information costs are lower among those individuals for whom the acquisition and processing of information is easier – typically individuals with higher levels of education. And as Fiorina (1990) argues, not only are information costs highly variable across individuals, but the costs are often negative – many individuals find the acquisition of information to be quite rewarding and even enjoyable. Hence, in the spirit of Downs (1957) and Berelson et al. (1954), we might expect to see a division of labor in the communication of political information. Individuals with high information costs might rely on communication with individuals who have minimal or even negative information costs.

Informational asymmetries should thus occur quite frequently and systematically within networks of political communication, and this paper focuses on the implications for political influence and communication. Are individuals more likely to trust their own judgments if they have invested more heavily in the acquisition of political information? Are they less likely to be persuaded by the judgments of others? Does the quality of their judgments reflect their own investments in political information? Are those individuals who rely on socially mediated information less well equipped to make effective choices? Or does the social communication of political information level the playing field among those individuals who invest more-or-less heavily in individually acquired versus socially mediated information?

The analysis is based on a series of small group experiments, each of which involves seven subjects who communicate with one another via networked computers. Each experiment involves two candidates who have fixed positions in a one-dimensional policy space, but these positions are unknown to the experimental subjects. The goal subjects is to cast a vote for the candidate who most closely matches their own predetermined positions on the same dimension, and subjects are rewarded with a cash incentive if the candidate closest to them wins the election. Information comes to the subjects in three different forms: publicly available information that is free but of low quality; privately acquired information that may cost more but is of higher quality; and socially communicated information taken from other individuals.

Variable Information Costs

The collective benefit of a more highly informed citizenry cannot be withheld from individuals who do not themselves become informed. These benefits occur at two different levels. At the level of the overall electorate, one might assume that democracy is more likely to thrive when citizens are better informed – certainly an ignorant electorate will compromise democratic control (Delli Carpini and Keeter 1996). At the level of politically meaningful groups with divergent political interests, it will also be in the best interests of the particular group if its members are aware and informed regarding the group interest. In both instances, the problem of political information costs would appear to constitute a classic collective action problem. To the extent that you value democracy and share the interests of your group, you will realize a benefit due to the higher levels of information both within the electorate and within your group. At the same time, whether or not you cooperate by becoming informed yourself

constitutes the individual calculation that frequently leads to an unraveling of collective action and a poorly informed electorate (Olson 1966).

A central ingredient of this particular collective action problem revolves around the cost structures surrounding political information, as well as the implications that derive from both publicly available information (Downs 1957) and shared information among interdependent individuals (Berelson et al. 1954). First, the individual acquisition costs of political information vary widely across different individuals. Some individuals acquire the information as a byproduct in the course of pursuing other instrumental activities, while other individuals obtain recreational value from political information – they are the political junkies who enjoy following politics and hence realize inherent benefits from the information that are unrelated to its utility in reaching political decisions (Fiorina 1990).

Second, these variations in costs take on additional meaning because people who find the collection of political information to be politically costly are often in a situation where they can rely on information collected by others. In other words, they can free ride on the investments of individuals who pay for the acquisition of information, even if they must defer to the source's judgment based on the information (see Katz 1957). Unlike the classical free-rider situation, in this particular context there are many individuals who are ready and perfectly willing to pay the costs of information acquisition and share that information with others – the political junkies for whom the costs of information acquisition are modest, non-existent, or even negative (Huckfeldt and Sprague 1995).

A problem arises because group membership does not always translate directly and unambiguously into a particular political choice. Any particular individual may simultaneously belong to a variety of groups and therefore possess a heterogeneous set of political interests and preferences. That is, for example, a pro-life Democratic union member, an affluent Republican who is a secular humanist, and a Democrat who is a card carrying member of the ACLU may have a difficult time figuring out at which points their individually held preferences and interests intersect and diverge. And hence several questions arise: Can any one of them trust either of the others for political advice and guidance? Are informationally impoverished individuals able to form judgments regarding the quality and veracity of the advice they receive from the experts?

This is an important problem, particularly to the extent that people encounter advice offered by informants with divergent preferences. The Downsian solution to this problem is to seek out an expert with shared preferences, but in some instances these individuals might not be available. One might have to choose, in short, between a political expert with divergent preferences, and a political novice with convergent preferences. In this context, a variety of empirical results suggest that individuals are often quite willing to obtain information from expert individuals even when their political preferences are divergent (Calvert 1985; Huckfeldt 2001; Ahn, Huckfeldt, and Ryan 2006).

In situations such as these, it is in the interests of the recipient to employ processing strategies that offer protection from being misled. Indeed, neither the interests of individual citizens nor the collective interests of democratic electorates are well served by a process based on misinformation. The crux of the difficulty is that individuals who are bereft of information

may have a difficult time assessing the quality of information and advice they receive from other citizens. And thus we end up with another version of *Catch-22* – individuals without information need information to evaluate the information they receive from others.

At the same time, this dilemma may overstate the level of previously acquired information necessary to assess the quality of incoming information, as well as to function effectively in democratic politics. A great deal of information is publicly available at little or no cost to individuals – information obtained from comedy routines on late night talk shows, yard signs, bumper stickers, and so on. While political scientists and readers of *The New York Times* may tend to dismiss the information acquired through these venues, it is an open question regarding the extent to which even modest levels of information might provide valuable political guidance.

Experimental Design and Research Questions

This paper's analysis is based on a series of small group experiments, each of which involves subjects who communicate with one another via networked computers. The experimental setting involves two candidates, each of whom has a fixed position in a one-dimensional policy space. The goal of the experimental subjects is to cast a vote for the candidate who most closely matches their own predetermined position on the same dimension, and subjects are rewarded with a cash incentive if the candidate closest to them wins the election. Information comes to the subjects in three different forms: publicly available information that is free but of low quality; privately acquired information that may cost more but is of higher quality; and socially communicated information taken from other individuals that is free.

We conducted 17 sessions of these computerized small group experiments, with seven subjects participating in each session. The experimental design builds on a spatial voting model in which voters and candidates have preferences on a single-dimensional policy space, voters cast their votes in an election, and the voters' payoffs depend on which of the two candidates win the election. The exact positions of the candidates were not known to the voters, creating a need to obtain information. Subjects were paid a show-up fee of five dollars and given an additional opportunity to earn more money based on the decisions they and other subjects make during the experiment. In 15 of the 17 sessions, the baseline voting game was repeated for 15 rounds. The other two sessions lasted for 13 rounds.[1] The experimental program was written using z-Tree (Fischbacher 2007). Subjects were paid volunteers recruited primarily from political science classes at UC Davis. The typical range of total payoffs was between 15 and 25 dollars. A session lasted on average about 60 minutes.

The Underlying Spatial Voting Model. Candidates and voters have preferences which are represented as integer numbers from 1 to 7 on a one-dimensional policy space. At the beginning of a session each subject was assigned a preference such that there is one voter with

[1] Our target was to have 15 rounds, but in two of the sessions we were unable to complete 15 rounds within the announced time limit of 60 minutes. Hence, the experimental sessions included 105 subjects who participated in sessions that involved 15 rounds, and an additional 14 subjects who participated in sessions that involved 13 rounds, for a total of 1757 subject-rounds. Analyses are pooled with a clustering correction for multiple observations on the same subjects (Rogers 1993). .

ideal point 1, one voter with ideal point 2, one voter with ideal position 3, etc. Thus, the seven subjects are evenly distributed on the scale. Once assigned, a subject's preference remained unchanged for the duration of the experiment. We will refer to the subjects as voter 1, voter 2, etc., where voter *j* means the subject's preference is *j*.

The two candidates, candidate A and candidate B, were not real human subjects, but computer-generated positions. Candidate A's position was randomly drawn in each period from a set {1,2,…, 6}. Candidate B's position was also randomly, and independently from candidate A's position, drawn from a set {2,3,…,7}. The candidates' positions also took only integer values. Subjects were told that the candidates were computer-generated positions as well as how their positions would be drawn in each period, and the voters did not know the exact positions of the candidates. In each round each subject cast a vote for either candidate A or candidate B. Voting was costless and abstention was not allowed. Subjects had a monetary incentive to vote for the candidate whose position is closer to her than the other candidate's.

At the beginning of each round of voting, subjects were endowed with 100 ECUs or Experimental Currency Units. Subjects were allowed to use up to 50 ECUs out of the endowed 100 ECUs to purchase information on the candidates' positions. (Information purchase and exchange will be explained in detail later.) After voting, if the winning candidate's position was closer to a voter than the losing candidate's, the voter earned 50 extra ECUs. If the winning candidate's position was farther away from the voter's position than the losing candidate, 50 ECUs were subtracted from the voter's account. If the two candidates were equally distanced from the voter, then the voter neither gained nor lost ECUs due to the outcome of an election.[2] Theoretically, a voter could earn 150 ECUs maximum in a round: the initial 100 ECUs endowment plus 50 more ECUs if his favorite candidate wins. This of course is when the voter does not spend any ECUs to purchase the information on the candidates' true positions. On the other hand, the minimum possible payoff for a subject in a period is 0 ECUs; this happens when a voter spends 50 ECUs on purchasing information and her favorite candidate loses the election. At the end of the experiment, the subjects were paid in cash the show-up fee plus their total earnings during the experiment.[3]

Obtaining information on candidates' positions. Though the true positions of the two candidates were unknown, the voters have three potential sources of information on which to base their votes. First, the fact that the two candidates' positions were drawn from different intervals could potentially help a voter in the absence of other forms of information. This fact should be more helpful to voters with more extreme positions (i.e., voter 1 and voter 7) than to those in the middle (voter 4). For example, voter 7, in the absence of any other information, should always vote for candidate B.[4]

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[2] Subjects were paid based on their actual distance from the candidates, not how they voted. So, for example, if candidate A was closer to subject *j*, but the subject voted for B, subject *j* was paid based on whether or not candidate A won.

[3] The conversion rate between ECUs and dollars was 100 ECUs equals a U.S. dollar.

[4] There are 36 possible combinations of the two candidates' positions and the joint distribution is uniform; in 21 out of these 36 possibilities, candidate B would be closer to voter 7 than candidate A.

Second, voters were allowed to spend up to 50 ECU's to obtain additional information on the candidates' true positions. There were three types of voters in terms of the costs they had to pay to obtain these additional pieces of information. In each session, two voters paid zero costs to obtain information (these are referred to as low information cost voters), two paid 5 ECUs per piece of information (medium information cost voters) and three paid 25 ECUs per piece of information (high information cost voters). Once assigned, the information cost for a subject remained unchanged for the entire experiment. Each voter was allowed to purchase up to 4 pieces of information, but because of the 50 ECU limit on information purchasing, the high information cost voters were able to purchase only 2 pieces of information. When a voter purchases a piece of information, it arrived in the form (a, b) where a is an estimate of A's true position and b is an estimate of B's true position. Let α and β denote the true positions of candidates A and B in a round. Then the signals a and b are randomly and independently drawn from a uniform interval $[\alpha - 3, \alpha + 3]$ and $[\beta-3, \beta +3]$, respectively. The signals took only integer values. Subjects were told how the signals were drawn as well as the fact that the signals on average reflect the true positions of the candidates.

Third and finally, each subject has an opportunity to request information from one other subject. Before they make this request, all subjects are shown the policy positions of each subject, as well as the number of pieces of information each subject purchased. After all subjects have made their requests, the subjects are told if anyone requested information from them. If any requests have been made, the policy positions of the requestors are revealed. The subjects are not required to comply with the information request, and they are not required to provide truthful information. When there are multiple requestors, a subject is not required to provide the same information to all of the requestor. Hence, they may decide to provide no information, to provide accurate information, or to provide misleading information. When a subject chooses to accept the information request from another subject, the information provider sends a message in the form of (a, b) where a is meant to be the provider's guess on the true position of candidate A and b is meant to be the provider's guess on the true position of candidate B.

In summary, the following steps occur during the experiment. At the beginning of the experiment, subjects were assigned their respective, mutually exclusive, integer preferences on a one-dimensional policy space from 1 to 7. Information costs are randomly assigned to subjects such that two subjects have low cost, two have medium cost, and three have high cost. Once assigned, these positions and information costs remained unchanged for each subject for the duration of the experiment. The candidate positions are set between 1 and 7, inclusively, and subjects are accurately informed that Candidate A's position lies between 1 and 6, while Candidate B's position is set between 2 and 7. Then in each of the approximately 15 rounds per session, the following steps occur:

1. The two candidates' positions are drawn from the respective intervals.

2. The subjects are given an opportunity to purchase information at the assigned information cost.

3. After the subjects have received the information, they are asked to provide an assessment of where they believe each candidate's position to be. This information is not communicated to other subjects.

4. After being shown all the subjects' positions on the scale, as well as the amount of information each has purchased, they are allowed to request information from one other subject. The subject need not comply with the request, and they need not provide accurate information.

5. After receiving information from one another, the subjects are provided a summary of the information they have received, and they vote for one of the candidates.

6. The outcome of the election is revealed to the voters. If the winning candidate's position is closer to a voter than the losing candidate's, the voter receives additional 50 ECUs as a reward. If the losing candidate's position is closer to a voter than the winning candidate's, 50 ECUs are taken off from the voter's account. The subjects are informed of their net earnings, which are accumulated across rounds.

7. The candidate positions are reset, and subjects proceed to the next round.

The value of information can be measured in terms of its variance around an unbiased central tendency. Each bit of individually purchased information is drawn from uniform distributions with midpoints centered at the candidates' true position and boundaries that are symmetrical to the midpoints. This means that individuals must make judgments regarding candidates based on multiple pieces of unbiased but noisy information. In contrast, when individuals rely on the judgments of other subjects, they not only depend on the mix of noisy information that serves as the basis for these subjects' judgments, but also on the veracity of the source to compile this information in an unbiased manner. This basic structure provides an opportunity to address a series of issues related to asymmetries in information among subjects, and the implications of these asymmetries both for political communication and for levels of information within electorates.

The Cost and Value of Individually Obtained Information

The first issue that arises relates to the value of the privately held information thus acquired. We address this question by considering the subjects' prior judgments regarding candidate judgments. These judgments are "prior" in the sense that they made by the subjects wholly based on privately obtained information, prior to communication with other subjects.

The randomly assigned information costs make a substantial difference in the amount of information purchased by individual subjects. More than seventy percent of those without information costs request the maximum amount of information, but only 21.5 percent of those who pay 5 cents request the maximum. Those who pay 25 cents are only eligible to request 2 pieces of information, but 36.2 percent do not request any at all. As a consequence, the mean acquisition is 3.39 pieces of information among subjects for whom information is free; 2.42 among subjects who pay 5 cents, and .93 for subjects who pay 25 cents. In short, within the

constraints of the experiment, subjects economize in purchasing information, and hence the amount of information they purchase is a direct function of cost.

Is this information helpful to the subjects in forming judgments regarding the locations of the candidates? We address this question on the basis of the subject's initial judgments regarding the candidates' positions. Recall that they provide these judgments ***after*** obtaining the individually purchased information but ***prior*** to obtaining the information communicated by another subject. A measure of judgmental error is formed by taking the absolute value of the difference between this prior judgment and the true candidate position, which is unknown to the subjects.

The effect of information on judgmental errors is initially considered in Part A of Table 1, where an error is defined as the absolute value of the difference between the candidate's true position and the subject's judgment. As this table shows, subjects who purchase more information are less likely to make larger errors of judgment regarding the positions of the candidates. The problem with this model is that it does not allow us to consider the possibility of discontinuities across the information purchases, and whether there may be diminishing returns in the purchase of increasing amounts of information.

Thus, in part B of Table 1, four dummy variables are defined: the first for those who purchase one or more pieces of information, the second for those who purchase two or more, the third for three or more, and the fourth for four pieces of information. As these two linear regressions demonstrate, the first piece of information is most influential in reducing errors, with generally declining effects across the pieces of information.

Part C of Table 1 provides a final alternative specification. Once again, a dummy variable is defined for those who purchase one or more pieces of information, and a second variable is defined as the number of ***additional*** information purchases. Hence if a person did not purchase any information, they would score zero on both, but a person who purchased three pieces of information would score 1 on the dummy variable and 2 on the second count variable. This specification shows, once again, a larger effect for the first piece of information. In terms of the error in judgment regarding Candidate A, purchasing one piece of information reduces the error by .57, and each additional information purchase reduces error by .14. Hence, this specification suggests a modest increment in error reduction after the first piece of information, but a substantial accumulation in error reduction over the range separating one piece of information from four pieces of information.

An alternative perspective regarding the value of information is obtained by considering its content rather than its volume. In Table 2A we only consider the subjects who purchased four pieces of information. Their prior judgments regarding the candidates' positions are regressed on the content of each piece of information – the estimate of the candidate position provided by the privately obtained information. As the two regressions in Part A show, the effects of the four pieces of information are highly comparable. There is no evidence here to suggest that the order in which the information is provided has any effect on the value of the information. To the contrary, the comparative estimates of the effects are strikingly similar.

In Part B of the table, we only consider those subjects who purchased one piece of information. In this instance, the effect of this single piece of information is much larger. Indeed, it is nearly three times larger than any one of the four pieces of information purchased by the high volume consumers. At the same time, it is important to note that, while the standard error of the estimate and the R^2 are reduced among the high volume consumers, the magnitude of the difference is much less pronounced.

In summary, information costs inhibit information purchases. While those who purchase more information are less likely to make errors in judgment regarding candidates, returns from information diminish quite rapidly (see McKelvey and Ordeshook 1985). Most reduction in judgmental error comes with the purchase of a single piece of information, and beyond that point, additional purchases generate much more modest effects. This is ***not*** because individuals fail to learn from additional pieces of information. The content provided by the last piece of information is as important as the content provided by the first piece. Rather, in the stochastic world that we have created, a single piece of unbiased information is likely to be quite valuable, even in the context of considerable background noise in the reliability of transmission. Thus, the information junkies may do a better job than the information economizers, but depending on the cost structure, the added value in their judgments may not generate efficiency gains.

Criteria for Selecting Informants

One might offer two alternative hypotheses with respect to the selection of informants. If one expects the recipient to maximize the convergence of viewpoints, the positions of the informant and the recipient should always be adjacent to one another, making the distance measure equal to 1. Alternatively, if recipients select informants independently of the convergence or divergence of positions, then one might expect a random mixing pattern, in which the distribution of issue differences is randomly distributed with respect to the distance measure.

Both possibilities are considered in Table 3, where the observed distributions of distances between the informant and the recipient are shown, contingent on the distance of the recipient from the middle of the position space. This contingency is necessary because subjects with more extreme positions have a greater potential range of position divergence. Finally, the random mixing expectation is shown immediately below the observed distribution.

Neither substantive hypothesis is wholly satisfactory. First, it becomes apparent that the random mixing assumption fails to take account of the somewhat skewed nature of the distribution: the observed frequencies tend to surpass the random mixing assumption for shorter distances and fall short of it for longer distances. Second, it becomes equally clear that the distribution of distance measures extends far beyond informants who occupy adjacent positions on the seven-point scale. The distribution of distances for the extreme subjects with positions 1 and 7, for example, diverges quite modestly from the random mixing assumption.

While the total observed distribution is highly skewed across the distance measure, this is driven primarily by the centrality of those holding intermediate positions and their lack of opportunity to encounter positions that are dramatically divergent from their own. Thus, a

relatively modest tendency for patterns of communication to be clustered among subjects with similar positions does not eliminate communication among subjects with divergent positions. This situation arises because the individual subjects are frequently caught between a rock and a hard place with respect to the selection of informants. Other analyses of these data (Ahn, Huckfeldt, and Ryan 2006) show that subjects are primarily driven by the availability of expertise in selecting an informant. This is not to say that the proximity of the potential informant's position to their own position is unimportant. Rather, given a choice between a poorly informed informant with a convergent position and a well informed informant with a divergent position, they regularly choose the latter.

The Veracity of Expert Advice

A basic question arises with respect to the motives that a potential informant has for being less than candid in the communication of information – to what extent do informants communicate biased information? For purposes of this analysis, the focus is on the divergence between the prior judgment of the informant and the message they send to the subject who is requesting guidance. To the extent that the candidate is being entirely candid, the message they communicate should be equal to their own prior estimate of the candidates' positions, and hence there should be no difference between the prior and the message. That is, the subjects form a prior estimate based on public and privately purchased information. Immediately after forming that prior estimate, people ask them for that information, and they are given the opportunity to obtain information from others. If the communication is driven by their candid assessment, it should be predicted by the prior estimate and nothing else.

In Part A of Table 4, the dependent variable in the regressions is the absolute differences between the informants' prior judgments and the candidate messages that they send to the recipients. The explanatory variable is the absolute difference between the ideal positions of the informants and the recipients. The positive coefficients with substantial t-values suggest that divergence between the priors and the communicated messages reflect divergent preferences between the informant and the recipient. While this provides clear evidence of biased communication, the extent of the bias is reasonably constrained. The maximum distance between two subjects is an interval of 6 units, and hence the maximum predicted bias in the information would be .96 for candidate B and .72 for candidate A.

In Part B of Table 4, the communicated message is regressed on the informant's prior judgment, the distance between the positions of the informant and the recipient, and an interaction between the distance and the prior judgment. The regression shows a positive and substantial coefficient on the prior that is diminished in size when the recipient and the informant hold positions that diverge. For example, the magnitude of the effect of the prior on the message regarding Candidate A is .78 for informants and recipients who occupy adjacent positions (.85-.07X1). In contrast, for informants who are at opposite ends of the scale, the magnitude of the effect is reduced to .43 (.85-.07X6). These results suggest that the primary factor driving the communication among and between experimental participants is the informant's own prior judgment, which is driven by the information purchased by the communicators. At the same time, the quality of the message is attenuated by the existence of divergent positions between the

informant and the recipient. Hence, an important issue resolves around the capacity of the recipients to make sophisticated judgments regarding the value of these messages.

Coping with Advice from Suspect Sources

In their effort to obtain expert guidance, subjects run the risk of exposing themselves to cheap talk (Johnson 1993; Farrell and Rabin1996) and misinformation. Why would individuals take such a chance? Our argument is that subjects employ coping mechanisms to evaluate the veracity of the information they receive from others, based primarily on their own privately held information and expertise. That is, privately held information is likely to occupy a central role in the assessment of socially communicated information, and this privately held information becomes important in two different ways.

First, subjects might weigh their prior judgments more heavily when they invest more resources in the private information on which the prior is based. Based in large part on the purchase of this information, the subjects develop a preliminary judgment regarding the location of candidates, and as we have seen, this prior is anchored in the volume and content of the information they have purchased. Some of the subjects purchased a great deal of information, while others did not purchase any at all. We expect that individuals who have invested more heavily in the acquisition of information would be more likely to place higher levels of confidence in their own priors. In contrast, individuals who fail to purchase information might not place any confidence at all in these priors, depending more heavily on the information they obtain from other individuals.

The first logit model in Table 5 provides a baseline analysis of the recipient's vote choice regressed on their priors regarding the candidates, as well as the information they obtain from the informant, and it shows that both demonstrate discernible effects on the subjects' voting behavior. Our argument regarding the impact of private information purchases is evaluated in the second model. In this model, both the prior and the socially communicated information are entered separately, as well as the amount of privately held information purchased by the subject. The amount of privately purchased information is, in turn, included in interaction terms with both the amount of information purchased by the recipient and the message communicated by the informant. The model shows a statistically discernible coefficient in the expected direction for the prior, the socially communicated information, the amount of information purchased, and the interaction between information purchased and the prior. The coefficient for the interaction between information purchased and the socially communicated information is ***not*** discernible.

A second argument is that individuals are less likely to infer credibility to socially communicated information when the messages are at variance with their own views. That is, we expect that individuals will be less likely to trust a message that diverges sharply from their own judgments regarding the state of the world. This argument is evaluated in the third logit model of Table 5, where the subject's vote is regressed on their priors regarding the candidates, the message taken from informants, and the distance between their own priors and these messages. In addition, interactions are included for each of the first two factors (the priors and the messages) with the distance between priors and informant messages. Only the prior, the socially

communicated message, and the interaction between the socially communicated message and the distance measure are statistically discernible.

Thus, we see evidence to support the argument that subjects weight their own priors more heavily when they invest more extensively in the acquisition of privately held information. Moreover, we also see evidence that individuals weight socially communicated messages more heavily when these messages coincide with their own prior judgments regarding the positions of the candidates.

In order to address these arguments simultaneously, we re-estimate the baseline model for four separate groups: subjects with low information purchases and divergent informant messages; subjects with low information purchases and convergent informant messages; subjects with high information purchases and divergent informant messages; and subjects with high information purchases and convergent informant messages. The models show no discernible effect due to priors among low information subjects with convergent messages, as well as no discernible effect for socially communicated messages among high information subjects with divergent messages. These effects are consonant with our argument: absent private information, a reasonable message outperforms the prior; in the context of abundant private information, an implausible message has no effect.

In Part B of Table 6, magnitudes of the predicted effects on the probability of voting for Candidate B are calculated on the basis of the four models. Two patterns are particularly worthy of attention. First, controlling for message divergence, the effect of the prior is consistently larger for subjects who invested more heavily in private information. Thus the subject's confidence in their prior would appear to be higher as a function of the investment in information.

Second, among those who invested more heavily in private information, the message effect is greater for convergent messages than for divergent messages. In contrast, among those who did ***not*** invest in private information, the message effect is marginally higher for divergent messages.[5] Hence, these results support the argument that individuals who have invested more heavily in private information are less likely find divergent messages persuasive.

In short, the subjects place more confidence in their priors when they have invested more extensively in the acquisition of information. Confidence in the priors increases among individuals who have purchased more information and decreases among individuals who have purchased less. Moreover, subjects with heavier investments in private information are less likely to find messages persuasive when they diverge from their own priors. In contrast, the importance of social communication is relatively enhanced among those subjects who invest few resources in the acquisition of information. This suggests that those who invest less are more vulnerable to being misled, and we consider this possibility before concluding.

[5] Making these divergence comparisons requires something close to a counterfactual. Recall that the samples are subset in part on the basis of divergence from the priors, but we are holding divergence constant at -1 to 1 in generating changes in predicted probabilities. Thus, the comparison is an abstraction that permits the use of a common metric.

Net Effects on the Vote among Cross Pressured Subjects

While the subjects would prefer expert informants with compatible political preferences, they are subject to constraints imposed by scarcity in the supply of these individuals. When faced with a choice between expertise and compatibility, they often turn to experts with divergent perspectives. Many subjects are thus confronted with the dilemma of messages that conflict with their own priors. We focus on these cross pressured subjects in the analyses that follow. What are the net consequences for their actual votes? What are the implications for voting correctly – that is, for voting in line with their own underlying preferences?

First, both the subject priors and the informant messages come as a set of point estimates regarding the positions of each candidate. Each set of point estimates translates into three possible vote cues: vote for candidate A, indifference between A and B, and vote for candidate B. The analyses of Table 7 translate these point estimates into the correspondingly appropriate vote cues.

Second, the subjects are not provided with an opportunity to abstain, and hence we use a logit model in Part A of Table 7 to regress a binary choice – vote for A or vote for B – on the message cue coming from the informant as well as the cue coming from the subject's own prior. The analysis is undertaken for all subjects who receive a message cue from an informant that diverges from their own priors regarding the candidates, and the results are shown for three groups: all such subjects, the well informed subjects, and the poorly informed subjects.

The predicted probabilities in Table 7B show that, for the group as a whole, the effect of the prior is somewhat stronger than the effect of the message. The relative effect for the prior is much stronger among the high information subjects, but the effect of the prior is actually weaker than the message effect among low information subjects. Hence, better informed subjects are more likely to vote in line with their own priors and to dismiss the communicated message.

The question thus arises, are subjects more likely to vote correctly on the basis of the informant messages or on the basis of their own priors? In addressing this question, we employ an ordered logit model in Part C of Table 7 to regress the "correct vote" for the subject on the message cue and the prior cue within the same three groups. In this context, a "correct vote" is defined as a vote for the candidate with a true position that lies closest to the subject's own position: -1= candidate A is closer to the subject's own position; 0= the candidates are equally distant; and 1=candidate B is closer. (This coding accounts for the fact that some subjects should be indifferent between candidates even though they are not allowed to abstain.) The logit models show that both the subject priors and the informant messages consistently point toward the correct vote, with positive coefficients that generate substantial t-values and discernible effects.

Based on these model estimates, Part D of Table 7 shows the predicted probabilities of voting correctly based on priors and messages. The lesson comes through quite clearly: when the subject's prior conflicts with the informant's message, the subjects would be well advised to rely on their own priors. This is ***especially*** true among well informed subjects. In contrast, the difference barely matters among the poorly informed – relying on the prior rather than the message produces very modest increases in the probability of voting correctly.

Before we become too critical of these seemingly gullible subjects, it is important to place their judgments in context. First, the subjects who receive conflicting advice from informant messages and their own priors typically lie within uncertain terrain. That is, neither the message nor the prior provides a definitive, slam dunk source of guidance. All these probabilities lie in an anemic range, where the probability of voting correctly never exceeds .5.

Second, when the subject's prior provides the same guidance as the informant's message (N=647), either voting cue provides correct guidance 74 percent of the time. When the two provide divergence guidance (N=762), the prior provides correct guidance 42 percent of the time, and the message provides correct guidance 35 percent of the time. In short, the subjects face a complex decision-making task when their own priors conflict with the messages they receive from others. Not surprisingly, such conflicts are more likely to arise when the distance separating the candidates is minimized, when the average distance between the candidates and the subject is minimized, and when the subject is more equally distant between the candidates.

A final problem relates to real-world interpretation. While the subjects are not omniscient, they have the decided advantage of possessing complete information regarding preferences. Each subject occupies a unique position, and all the subjects know their own positions exactly, as well as the positions of their informants and potential informants. In real life, these conditions seldom hold. Not only do citizens lack precise information regarding the true preferences of others, but they often lack information regarding their own preferences regarding political issues and debates. All auto workers want better salaries and higher levels of job security, but these two goals typically run in contrary directions. Any particular autoworker might reasonably be uncertain, not only regarding the preferences of the other auto workers who surround them, but regarding their own preferences as well. In real life situations such as these, preferences need to be informed, and persuasion is more than a simple act of passing along information.

The important point is not simply that subjects were sometimes misled by placing too much confidence in messages that conflicted with their own priors. Rather, even when subjects have precise information regarding preferences – their own as well as those of others – they are often quite willing to entertain information from individuals with diverse preferences, as well as to take those preferences quite seriously. Indeed, in settings marked by ambiguity, uncertainty, and minimal information, the effects of these informant messages correspondingly increase!

Summary and Conclusion

Lower information costs translate into higher levels of information consumption. More information, in turn, translates into higher quality decisions. The subjects in our experiment tend to integrate all the information they obtain in reaching prior judgments regarding the candidates (but see Lodge and Taber, forthcoming). Hence, they are less reliant on any single piece of information, and because the information is taken from a stochastic distribution, this means that they are less likely to be misled by a single piece of noisy information. Thus, it comes as no surprise that those individuals who purchase more information tend to be more accurate in constructing their priors.

What is perhaps more surprising is the steadily decreasing value of additional information with respect to accurate judgments. This is not to say that additional information has no value – those subjects who purchase four pieces of information are certainly more accurate in their judgments than those who purchase only one piece. But the value added by purchasing one piece of information is not replicated by purchasing an additional three pieces. In short, minimal amounts of information go a long way toward informing judgments, particularly when the information is unbiased, and even when it is noisy.

The value of minimal information may sometimes be underappreciated, not only in scholarly discussions of political judgments by citizens, but also within the deliberations that occur among our subjects. This is not to say that ignorance is instrumental or beneficial. To the contrary, some information is necessary even for the use of the most basic cognitive short cuts, and modest amounts of information go a long way toward informing the choices of our subjects (see Kuklinski and Quirk 2000; Lau and Redlawsk 2006). The analysis does, however, support an argument that the marginal utility of additional information tends to decrease quite rapidly (Lupia and McCubbins 1998).

In this context, one might well question the willingness of the subjects to take advice from others who occupy divergent political positions. Given the bias that is attached to messages taken from politically divergent experts, it may be judicious to pay more heed to the less biased messages sent by politically proximate informants, even if these messages are based on less information. Our results suggest that the low information subjects were sometimes overly deferential in their willingness to accept the advice given by experts when that advice conflicted with their own prior judgments (see also Mondak 1995). Indeed, a primary benefit of being better informed is that individuals acquire the courage of their convictions – they become less willing to accept communicated messages that conflict with their own priors.

Subjects have their own heuristic defenses with respect to the dangers of cheap talk and misinformation. Rightly or wrongly, they are more likely to trust their own judgments when they have invested more heavily in information, and they are less likely to trust messages that diverge from their own judgments. These mechanisms for the evaluation and verification of messages are known to both the senders and receivers of messages, and hence they serve two purposes. They empower the recipients to consider communicated information from others, at the same time that they constrain the senders to keep their attempts at persuasion within believable boundaries.

Hence, a crucial aspect of the process is that the participants are involved as both producers and consumers of knowledge. The subjects occupy roles where they can both offer information to others as well as obtain information from others. This means that the informant is well aware of the concerns facing the recipient regarding the potentially compromised value of shared information. (You know that I know that you know.) Correspondingly, while increased distance between the preferences of the informant and the recipient serve to attenuate the quality of the message, resulting levels of misinformation are relatively constrained.

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Table 1. Information and errors.

A. Absolute value of difference between prior and actual position of candidate, by number of pieces of information purchased.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
pieces of information	-.22	9.19	-.26	9.36
constant	1.56	24.02	1.69	21.08
N=	1757		1757	
R^2=	.10		.12	
standard error of estimate=	.95		1.05	
number of clusters (subjects)=	119		119	

B. Absolute value of difference between prior and actual position of candidate, by level of information purchase

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
pieces of information (dummies):				
one or more	-.55	5.08	-.71	8.93
two or more	-.20	2.55	-.29	3.83
three or more	-.07	.98	-.02	.26
four or more	-.18	2.34	-.17	1.97
constant	1.73	33.85	1.95	34.89
N=	1757		1757	
R^2=	.12		.15	
standard error of estimate=	.94		1.03	
number of clusters (subjects)=	119		119	

C. Absolute value of difference between prior and actual position of candidate, by whether subject purchased one piece of information and the number of additional pieces.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
first piece (dummy)	-.57	5.57	-.78	6.11
number of additional pieces	-.15	5.24	-.14	6.51
constant	1.74	19.52	1.95	16.16
N=	1757		1757	
R^2=	.12		.15	
standard error of estimate=	.94		1.03	
Number of clusters (subjects)=	119		119	

Table 2. Judgmental priors and amount of information received.

A. Subject priors by private information received, for individuals who purchased four pieces of private information.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
first piece of information	.17	10.88	.18	6.82
second piece	.19	9.33	.19	8.09
third piece	.19	12.14	.19	8.99
fourth piece	.18	9.43	.21	10.17
constant	1.06	9.34	1.14	7.26
N =	456		456	
R^2=	.74		.73	
Number of clusters (subjects)=	46		46	
Standard error of estimate=	.76		.84	

B. Subject priors by private information received, for individuals who purchased one piece of private information.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
first (only) piece of information	.59	15.56	.59	15.03
constant	1.40	11.07	1.71	9.70
N=	328		328	
R^2=	.69		.63	
Number of clusters (subjects)=	61		46	
standard error of estimate=	.95		1.09	

Table 3. Comparison of observed distance between discussant and information to expectation based on random mixing, for recipient positions.

recipient position		distance between informant and recipient 1	2	3	4	5	6	N
4	observed	.42	.36	.22				199
	random mix prob.	.33	.33	.33				
3 or 5	observed	.48	.32	.11	.09			408
	random mix prob.	.33	.33	.17	.17			
4 or 6	observed	.45	.14	.16	.11	.14		399
	random mix prob.	.33	.17	.17	.17	.17		
1 or 7	observed	.20	.22	.14	.14	.16	.13	403
	random mix prob.	.17	.17	.17	.17	.17	.17	
Total observed		.38	.24	.15	.10	.09	.04	1409
N		541	345	209	140	121	53	

Table 4. Biases in communicated messages.

A. Absolute difference between informant prior and the communicated message by the absolute difference in the positions of the informant and recipient.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
difference between positions of informant and recipient	.12	3.25	.16	3.60
constant	.53	5.83	.56	5.15
N=	1409		1409	
R^2=	.02		.03	
Number of clusters (subjects)=	110		110	
standard error of estimate=	1.14		1.30	

B. Informants' communicated messages by informant priors, the absolute difference in the positions of the informant and the recipient, and the interaction between the communicated message and the difference in positions.

	Candidate A		Candidate B	
	coefficient	t-ratio	coefficient	t-ratio
informant prior	.85	13.81	.84	12.10
difference between positions of informant and recipient	.34	2.94	.32	3.39
prior X difference	-.07	2.72	-.08	3.34
constant	.39	1.50	.76	2.32
N=	1409		1409	
R^2=	.39		.36	
Number of clusters (subjects)=	110		110	
standard error of estimate=	1.32		1.49	

Table 5. Subject vote by priors and socially communicated information, with weights for the amount of privately held information purchased by the subject and for the divergence of the informant message from the subject's prior. (Logit models.)

	no weight	private information	informant divergence
subject priors regarding candidates	.58	.28	.67
	(7.89)	(3.25)	(4.18)
messages regarding candidates	.40	.45	.61
	(7.43)	(4.34)	(4.64)
amount of information purchased		-.01	
		(.09)	
information purchased X priors		.18	
		(3.68)	
information purchased X messages		-.02	
		(.58)	
distance between prior and message			-.05
			(.62)
prior X distance			-.07
			(1.20)
message X distance			-.10
			(2.12)
constant	-.13	-.13	-.05
	(1.89)	(1.07)	(.17)
N=	1409	1409	1409
χ^2,df,p=	77,4,.00	88,5,.00	103,5,.00
Number of clusters (subjects)	119	119	119

priors regarding candidates= |prior regarding A - subject position| -|prior regarding B - subject position|

messages regarding candidates= |message regarding A - subject position| -|message regarding B - subject position|

prior to message distance= [(prior regarding A - message regarding A)^2+ (prior regarding B - message regarding B)^2]/2

Table 6.

A. Subject vote by priors and socially communicated information, for groups ordered by amount of information purchased and divergence of informant message. T-ratio in parentheses.

Amount of information purchased:	low	low	high	high
Divergence of Informant message:	low	high	low	high
subject priors regarding candidates	.34	.46	.99	.71
	(1.61)	(5.72)	(4.84)	(3.50)
messages regarding candidates	.43	.49	.69	.16
	(3.30)	(5.95)	(5.15)	(1.63)
constant	-.21	-.03	-.27	-.05
	(.98)	(.16)	(1.63)	(.25)
N=	243	309	328	194
χ^2,df, p=	13,2,.00	45,2,.00	51,2,.00	13,2,.00

B. Effect of prior and message on predicted probability of vote for candidate "B" by informational level and divergence of communicated message from prior.

	low information	high information
low divergence	prior effect= .21	prior effect= .45
	message effect= .17	message effect= .33
high divergence	prior effect= .15	prior effect= .34
	message effect= .24	message effect= .08

Prior effects are calculated at two units variation in one explanatory variable (from -1 to 1) with the other variable held constant at the sample mean (0). The ranges on the both the combined priors and the combined messages are from -6 to 6 with a mean near zero.

Source: Estimates from Part A.

Table 7. Votes and "correct" votes when messages conflict with priors.

A. Subject's vote by informant message and subject prior.

	All Subjects		Information Purchased by Subjects: low information		high information	
	coefficient	t-value	coefficient	t-value	coefficient	t-value
messages	1.24	8.54	1.86	7.72	.74	3.93
priors	1.44	9.35	1.68	6.57	1.21	6.13
constant	-.21	2.63	-.16	-1.25	-.25	2.44
N	762		330		432	
X2,df,p	109,2,.00		86,2,.00		45,2,.00	

B. Predicted probability of voting for candidate A.

	All Subjects		low information		high information	
	Message		Message		Message	
	A	B	A	B	A	B
Prior=A		.60		.49		.67
Prior=B	.50		.58		.45	

C. The "correct" vote by informant message and subject prior.

	All Subjects		Information Purchased by Subjects: 0 or 1 piece		2 to 4 pieces	
	coefficient	t-value	coefficient	t-value	coefficient	t-value
messages	.46	4.12	.50	3.14	.44	2.72
priors	.85	7.02	.64	3.56	1.00	6.03
cut 1	-.71	s=.08	-.75	s=.12	-.68	s=.11
cut 2	.43	s=.08	.27	s=.11	.58	s=.10
N	762		330		432	
X2,df,p	55,2,.00		14,2,.00		49,2,.00	

D. Predicted probability that priors and messages lead to correct messages.

	All Subjects		Low Information		High Information	
	Probability that correct vote is:		Probability that correct vote is:		Probability that correct vote is:	
	A	B	A	B	A	B
Prior=A Message=B	.42	.31	.35	.40	.47	.24
Prior=B Message=A	.25	.49	.29	.47	.22	.50