

The impact of the social context on resistance to persuasion: Effortful versus effortless responses to counter-attitudinal information ☆

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Abstract

Past research has demonstrated that the presence of attitudinal diversity within a person's social network increases his or her openness to attitude change. The current research explores whether this increased openness to attitude change is the result of relatively thoughtful or nonthoughtful processes. A nationally representative sample of US adults was exposed to a counter-attitudinal persuasive message that contained either strong or weak arguments. Attitudinal diversity within participants' social networks was associated with greater argument quality differentiation: people embedded in networks that included a variety of views were more likely than those in attitudinally homogenous networks to carefully scrutinize attitude-relevant information, modifying their attitudes in response to strong but not weak arguments.

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The influence of attitudes can be observed in virtually every domain of life. They underlie many of our mundane personal decisions such as what to eat for breakfast, and what movie to see on Saturday night. Attitudes also underlie more consequential facets of our lives: they often lie at the root of personal feuds, they may form the basis of social relationships, they sometimes motivate us to take action to promote a particular social or political cause, they influence which consumer products flourish and which ones fail, and they determine who leads our country.

However, not all attitudes are so influential, and attitude researchers have devoted much effort to understanding the specific features of attitudes that differentiate those that are strong and consequential from those that are weak and

ineffectual. This search has been tremendously productive—roughly a dozen discrete attitude features have been identified that regulate attitude strength. Recently, attitude researchers have expanded the scope of their inquiry, exploring the impact of interpersonal factors on attitude strength.

Attitudes are held by individuals residing in a richly textured social world. Each of our lives is intertwined with the lives of the friends, family members, and acquaintances with whom we interact everyday: working with them, relaxing with them, influencing them, and having them do the same in return. Recent research has demonstrated that features of the social context in which people are situated do indeed have implications for the strength and durability of their attitudes.

In particular, the attitudinal composition of the social network in which an individual is situated affects the strength of his or her attitudes (Visser & Mirabile, 2004). When the attitudes of those around us are congruent with our own views on an issue, our attitude is strengthened and we are less susceptible to persuasion. When the important people in our lives hold a diversity of attitudes toward an

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issue, our own attitude is weakened and we are more vulnerable to attitude change.

The current research explores the nature of the information processing that results from these different network attitudinal compositions. Specifically, we investigate whether being embedded in a diverse social network motivates thoughtful consideration of attitude-relevant information or instead encourages nonthoughtful reliance on peripheral cues available within the persuasion context.

Attitude strength

Attitudes can be profoundly influential, shaping our perceptions of the world and guiding our responses to the objects we encounter. A favorable attitude toward a political candidate, for example, can color our perception of his or her debate performance, motivate us to put a bumper sticker on our car, and ensure that we turn out on election day to vote for that candidate. Further, our attitude may exhibit tremendous durability, resilient even in the face of a strong challenge.

Not all attitudes are so durable and influential, however. Another person may hold an equally favorable attitude toward the same political candidate and yet exhibit none of these outcomes—he or she may be relatively unbiased in perceptions of the candidate’s debate performance, and do nothing to express the attitude behaviorally. His or her attitude may also fluctuate over time as the campaign unfolds.

Clearly, knowing an individual’s attitude toward a particular object is extremely useful in predicting behavior toward the object, but as the preceding example illustrates, it is just as important to know the *strength* of that attitude. Strong attitudes are those that motivate and guide behavior, influence information processing, are resistant to change, and are persistent over time (Krosnick & Petty, 1995). Over the last two decades, attitude researchers have made great strides in identifying specific features that differentiate strong from weak attitudes. For example, attitudes tend to be stronger to the extent that they are highly accessible (e.g., Fazio, 1995), lacking in ambivalence (e.g., Thompson, Zanna, & Griffin, 1995), built on a substantial knowledge base (e.g., Wood, Rhodes, & Biek, 1995), held with certainty (e.g., Gross, Holtz, & Miller, 1995), and deemed personally important (e.g., Boninger, Krosnick, Berent, & Fabrigar, 1995).

Social network composition and attitude strength

In addition to these intra-individual features, researchers have also turned their attention to social factors that may also regulate the strength of an individual’s attitudes. Some scholars have focused on the “social networks” in which people are embedded (Huckfeldt & Morehouse Mendez, 2004; Mutz, 2002b; Visser & Mirabile, 2004). A social network consists of the people with whom an individual maintains ongoing personal relationships and discusses important matters. An individual’s social network

has the potential to exert a noteworthy influence upon his or her attitudes.

Visser and Mirabile (2004) recently tested the idea that the strength of one’s attitude toward a target issue would be increased by being embedded within a social network composed of others who share one’s views on that issue. In two experiments, participants who were led to believe that their social networks contained a diversity of attitudes toward a target issue subsequently exhibited greater attitude change in response to a counter-attitudinal persuasive message regarding that issue than did participants who believed that their network was composed of like-minded others. These findings were replicated in two naturalistic investigations of social network composition: in both an undergraduate sample and a nationally representative sample, people whose actual social networks were attitudinally diverse on a given issue exhibited greater attitude change in response to a counter-attitudinal persuasive message than those who were embedded in attitudinally congruent social networks.

Attitude change through what process?

The finding that attitudinal diversity within social networks increases attitude change opens the door to a new set of questions about the social bases of attitude strength. The first among these involves the process through which this attitude change occurs.

Dual process models of persuasion posit two relatively distinct routes by which attitude change can occur. The elaboration-likelihood model (ELM; Petty & Cacioppo, 1986a) and the heuristic-systematic model (HSM; Chaiken, 1987) both suggest that attitude change can result either from effortful processing of a persuasive message, or through less effortful “short-cuts.” To use ELM terminology, the central route to persuasion occurs when people scrutinize the information contained within a persuasive message, thinking carefully about that information and relating it to other information they have stored in memory, and modifying their attitudes accordingly. In contrast, the peripheral route to persuasion occurs when individuals devote few cognitive resources to scrutinizing the content of a persuasive message, instead modifying their attitudes in response to readily available cues within the persuasion context.

The attitude change resulting from increased social network diversity may occur through either of these processes. One possibility is that people embedded within attitudinally diverse social networks find the conflict of views within their network uncomfortable, and avoid thinking about the contentious issue to mitigate this discomfort. When directly confronted with information about the issue, they may choose to process the information superficially rather than devoting careful attention to it. If cues are readily available within the persuasion context (e.g., a credible source, a large number of arguments), these individuals may adjust their attitudes accordingly. Thus, the heightened attitude change observed among people embed-

ded within attitudinally heterogeneous social networks may occur through peripheral processes.

Alternatively, diversity of opinions among important others may be taken as a signal that something is amiss, and that one's attitude needs to be re-evaluated. Consistent with this notion, Visser and Mirabile (2004) found that network diversity was associated with greater uncertainty about the validity of one's attitude. This uncertainty may motivate people to scrutinize new attitude-relevant information in an effort to identify and adopt the most valid attitude. This careful scrutiny of attitude-relevant information may lead people in diverse social networks to adjust their attitudes in response to cogent arguments, through central route processes.

Identifying the process of persuasion

One way to differentiate central from peripheral processes of attitude change is to gauge people's reactions to arguments of varying quality (see Petty & Cacioppo, 1986a). When people engage in central processing, they exhibit more attitude change in response to strong arguments than to weak arguments. When they engage in peripheral processing, on the other hand, they are insensitive to argument quality because they do not fully process the content of persuasive messages. It is therefore possible to use argument quality differentiation as an index of central versus peripheral processing of a persuasive message.

Indeed, much prior research validates the use of this method in for indexing depth of processing (for review, see Petty & Cacioppo, 1986b). Across numerous studies, factors known to influence the extent to which individuals engage in central processing have been shown to influence the extent to which individuals differentiate between strong and weak persuasive messages. Individuals under cognitive load, for example, have fewer mental resources to devote to information processing, and those under load draw less of a distinction between strong and weak arguments than do individuals who are not under load (Petty, Wells, & Brock, 1976). Further, caffeine is known to improve depth of processing (Lieberman, 1992), and individuals who have consumed caffeine exhibit greater differentiation of strong from weak arguments than individuals who have consumed a placebo (Martin, Laing, Martin, & Mitchell, 2005). Individual differences in the tendency to deeply process information are also related to argument quality differentiation: those who are high in need for cognition, and thus prefer to thoroughly consider new information, differentiate more between strong and weak arguments than do those lower in need for cognition (e.g., Cacioppo, Petty, & Morris, 1983). Various other studies similarly demonstrate that variables that influence the ability or motivation of individuals to carefully process a message also influence the extent to which these individuals differentiate between strong and weak arguments (e.g., Cacioppo & Petty, 1985; Petty & Cacioppo, 1979; Petty, Harkins, & Williams, 1980).

Together, these diverse lines of evidence establish that people's responses to strong versus weak arguments provide a valid and reliable index of the depth with which they processed a persuasive message. Therefore, manipulating the quality of the arguments within a persuasive message is a valuable tool for determining the extent to which variables of interest influence depth of processing. We took advantage of this tool in the current research.

Current study

To determine whether diversity of opinion within one's social network triggers primarily thoughtful or non-thoughtful consideration of attitude-relevant information, we embedded an argument quality manipulation into a design that otherwise replicates that of Visser and Mirabile (2004). Like Visser and Mirabile, we assessed the attitudinal composition of participants' social networks and explored openness to attitude change by exposing participants to a counter-attitudinal persuasive message. In the current research, however, some participants were exposed to a message containing strong, cogent arguments, whereas others were exposed to a message containing arguments that were relatively weak and easily refuted.

If diversity of opinion within one's social network triggers thoughtful consideration of attitude-relevant information, individuals in attitudinally heterogeneous networks should exhibit more attitude change to strong than weak arguments. Alternatively, if attitudinal diversity motivates people to avoid careful thought about an attitude object, then individuals embedded within heterogeneous networks should not differentiate between strong and weak arguments.

Methods

Participants and data collection

Data were collected from 353 participants via an internet-based survey administered by Knowledge Networks and supported by Time-sharing Experiments for the Social Sciences (TESS). Participants were selected from a nationally representative panel of adults initially recruited through random-digit dialing procedures. In exchange for completing surveys, panel members receive internet access and other incentives.¹ Of the 353 participants, 18 were excluded for failing to complete the primary independent or dependent measure.

Procedure and materials

Prescreening

Participants first answered a prescreening question indicating on a fully labeled 7-point bipolar scale the extent to which they favored or opposed capital punishment for peo-

¹ For more information, see www.knowledgenetworks.com.

ple convicted of first degree murder. Those who favored capital punishment were permitted to continue, ensuring that the persuasive message (arguing against capital punishment) was counter-attitudinal for all participants. Of the 535 individuals screened, two-thirds were qualified for the study.²

Initial attitude measure

Qualified participants then completed three additional items assessing their attitudes toward capital punishment on 7-point semantic-differential scales with anchors of good/bad, wise/foolish, and beneficial/harmful. The four attitude measures were coded to range from 0 to 1 (where higher numbers reflected more favorable attitudes toward capital punishment). They were then averaged together (Cronbach's $\alpha = .89$).³

Social network assessment

Participants read a description defining social network members as the people with whom an individual comes into contact regularly and with whom he or she discusses important matters. Participants were asked to list the first names of up to five of their own social network members. They then answered a series of questions about each of these network members. In particular, participants indicated the extent to which they generally agreed with the political views of each social network member using a fully labeled 5-point bipolar scale (ranging from agree strongly to disagree strongly).⁴ Responses were coded to range from 0 to 1 (where higher numbers reflect greater disagreement). Overall social network heterogeneity was calculated by averaging the amount of political disagreement between participants and each of their social network members.⁵

Counter-attitudinal persuasive message

Participants were next told that they would be presented with some ideas that have been written on the issue of capital punishment in recent years. They viewed several paragraphs containing arguments against capital punishment. Participants were randomly assigned to read either five

strong arguments or five weak arguments (see Appendix A).

Post-message attitudes

Following the persuasive message, participants again reported their attitudes toward capital punishment using the same four attitude measures described above. These measures were combined to create an index of participants' post-message attitudes (Cronbach's $\alpha = .90$).

Demographics

Demographic information was collected from panel members upon enlisting in the panel.

Education. Level of education was coded into six categories ranging from no high school diploma to doctorate degree. The categories were coded to range from 0 to 1 (higher numbers reflect more education).

Age. Participants' age was coded to range from 0 (corresponding to age 18, the youngest observed) to 1 (corresponding to 89, the oldest observed). Because age has been shown to relate to openness to attitude change in a nonlinear fashion (Visser & Krosnick, 1998), the age variable was also squared to capture the quadratic effect of age.

Sex. Females were coded 0 and males were coded 1. Forty-nine percent of participants were female.

Race. Nonwhite participants were coded 0 and white participants were coded 1. Sixteen percent were racial minorities.

Results

Argument quality

We assessed the effectiveness of our argument quality manipulation by comparing the magnitude of attitude change among participants who received strong versus weak arguments. Attitude change was calculated by subtracting participants' post-message attitudes from their initial attitudes.⁶ Positive values reflected attitude change in the direction advocated in the persuasive message. As expected, participants exposed to strong counter-attitudinal arguments exhibited significantly more attitude change ($M = .11$) than those exposed to weak arguments ($M = .05$), $t(328) = 3.70$, $p \leq .001$.

Network composition and attitude change

To examine the relation between network composition and attitude change, network heterogeneity was used to predict attitude change in an ordinary least squares regression. Demographic factors (age, education, race, sex) were included as control variables.

² The qualifying individuals were not different from others in terms of age or education, though slightly fewer women and minorities favored capital punishment.

³ Five additional participants were excluded because their full initial attitude measure was not favorable toward capital punishment.

⁴ We also measured network heterogeneity with respect to capital punishment. Unfortunately, participants indicated that they did not know the capital punishment attitudes of 42% of the network members they listed. Our past research has demonstrated that heterogeneity at the level of the specific attitudes regulates attitude strength when the individual knows network members' attitudes. The current research is the first to explore the implications of social network diversity versus congruence at the level of general political views, which we expect to operate in much the same way as specific attitudes.

⁵ Mean heterogeneity fell between "neither agree nor disagree" and "agree" on the 5-point scale of political disagreement ($M = .40$, $SD = .14$). The lowest observed disagreement was none (0), and the highest was strong disagreement with all network members (1).

⁶ Initial attitudes did not significantly differ across levels of network composition or quality of argument, suggesting that random assignment to conditions was successful.

Table 1
Standardized regression coefficients predicting attitude change

Predictor	Standardized regression coefficients		
	Model 1	Model 2	Model 3
Age	-.39*	-.35†	-.37†
Age squared	.35†	.30	.33†
Education	.10†	.10†	.09†
Race	-.06	-.05	-.05
Sex	-.09	-.07	-.06
Network diversity	.11*	.12*	.00
Argument quality		.19**	.19**
Network diversity × Argument quality			.16*

* $p \leq .05$.

** $p \leq .01$.

† $p \leq .1$.

Replicating previous findings (e.g., Visser & Mirabile, 2004; Visser & Krosnick, 1998), attitude change varied with age in a nonlinear fashion, decreasing across the first half of the adult life span and then increasing with age later in life. Education was positively associated with attitude change.

Controlling for these demographic associations, variety of opinions within one's social network was associated with attitude change (see column 1, Table 1).⁷ As anticipated, people embedded within attitudinally diverse networks exhibited more attitude change in response to a persuasive message than did people whose network members shared similar views.

Network composition, argument quality, and attitude change

We next explored the process by which diversity of opinions within one's social network increases openness to attitude change. If being embedded within an attitudinally diverse social network motivates individuals to scrutinize persuasive messages, this would imply an interaction between network composition and argument quality. A significant interaction would indicate that the impact of argument quality on participants' attitudes depended on the composition of their social networks. To examine this possibility, a dummy variable contrasting the strong and weak argument conditions was added to the regression equation, along with a term reflecting the interaction between network composition and argument quality.⁸ The interaction

⁷ We also ran this and all other regression analyses reported below with attitude extremity included as a control variable to test whether the observed associations between the various independent variables and attitude change were driven by confounds between network composition and attitude extremity. Results were comparable to those reported in the text.

⁸ Before computing the interaction term, the index of social network composition was centered (Aiken & West, 1991). All further interactions were computed with this same procedure.

Table 2
Mean values of attitude change by argument quality and network heterogeneity

Network heterogeneity, median split	Weak arguments	Strong arguments
Low heterogeneity	.05 (.10)	.09 (.14)
High heterogeneity	.06 (.11)	.13 (.15)

Note. Because attitude measures have been recoded to range from 0 to 1, attitude change values may be interpreted as a percent of possible attitude change from one end of the scale to the other. Standard deviations are in parentheses.

between network composition and argument quality significantly predicted attitude change (last column, Table 1).⁹

To explore the nature of this interaction, simple effects tests were conducted. Specifically, to examine the effects of argument quality when heterogeneity is low, network composition was re-centered at one standard deviation below the mean, the interaction with argument quality was recalculated, and the regression equation reported above was re-estimated. The coefficient for argument quality in this equation provides an estimate of the effect of argument quality when network heterogeneity is low. Results revealed no significant effect of argument quality, $b = .07$, $t(321) = .94$, *ns*, suggesting that participants in attitudinally congruent social networks were equally persuaded by both types of arguments. This analysis was repeated, this time with network composition centered at one standard deviation above the mean to examine the impact of argument quality when network heterogeneity is high. When heterogeneity was high, participants were more persuaded by strong than weak arguments, $b = .30$, $t(321) = 3.96$, $p \leq .001$, demonstrating that attitude change observed in people who are embedded within attitudinally heterogeneous social networks reflects thoughtful consideration of attitude-relevant information rather than mindless reliance on cues within the persuasion context (Table 2 and Fig. 1).

Discussion

The current results replicate and offer an instructive extension of prior findings regarding the impact of social network members' attitudes on one's openness to attitude change. As in past research, individuals embedded in social networks whose members held a variety of attitudes were less resistant to persuasion than individuals whose social network members held attitudes more congruent with their

⁹ Not all participants listed five network members (though 80% did), so additional analyses were conducted to determine whether participants listing different numbers of network members differed in their responses to the persuasive message. Regression analysis showed a trend such that participants who listed more network members tended to be more sensitive to heterogeneity within their network, $b = .13$, $t(317) = 1.75$, $p \leq .10$. No other effects of network size upon attitude change approached significance, $ps > .3$.

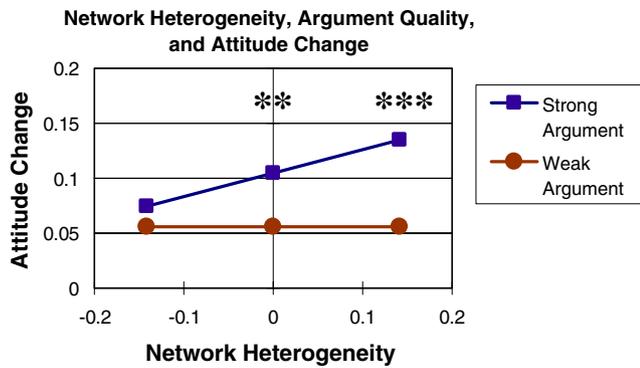


Fig. 1. Plot of the regression lines reflecting the interaction between argument quality and network heterogeneity predicting attitude change. Note: Heterogeneity has been mean-centered such that mean heterogeneity equals 0. Other points correspond to 1SD below the mean and 1SD above the mean. $**p \leq .01$; $***p \leq 0.001$.

own. The current findings shed new light on the processes underlying this heightened susceptibility to persuasion.

These findings suggest that individuals whose networks include a variety of perspectives will thoughtfully examine attitude-relevant information, contemplating its implications for their attitudes rather than mindlessly accepting or rejecting the new information. Specifically, individuals with heterogeneous social networks were significantly more persuaded by strong arguments than by weak ones, suggesting that diversity of views within their social networks motivated them to effortfully process the attitude-relevant information. The greater attitude change observed among individuals embedded within heterogeneous social networks therefore appears to reflect central rather than peripheral route processes of attitude change. In contrast, individuals with like-minded social network members drew little distinction between strong and weak arguments, suggesting that their final attitude was not a result of scrutiny of the attitude-relevant information.

This begs the question of why those in attitudinally congruent social networks fail to base their attitudes upon examination of attitude-relevant information. One possibility is that those in congruent networks are simply not motivated to may fail to scrutinize attitude-relevant information and adjust their attitudes accordingly. Alternatively, individuals embedded within attitudinally congruent social networks may be highly motivated *not* to reflect on the information. Laumann (1973) work with Detroit men indicates that congruence within social networks increases intolerance of alternate viewpoints (see also Mutz, 2002a). Individuals surrounded by like-minded others may realize that attitude change would not be tolerated, and they may therefore actively avoid devoting careful attention to attitude-relevant information that might advocate unwanted attitude change. Social constraints within congruent network may render effortful processing of attitude-relevant information wasteful at best and socially costly at worst.

Limitations

Because these findings are correlational with respect to the relation between network diversity and argument quality differentiation, strong causal conclusions cannot be drawn from these data alone. Prior research has established a causal relation between network diversity and attitude change (Visser & Mirabile, 2004) and further research confirms that the convergent results of experimental and correlational studies arise from the same underlying processes (Levitan & Visser, in preparation), but it remains possible that the relation between network diversity and argument quality differentiation observed here is due to some third variable.

It is possible, for example, that individuals misperceive the attitudinal composition of their social networks, and that factors governing this misperception also govern openness to attitude change. For example, it may be that individuals who are uncertain of their attitudes may be both more motivated to process and integrate new information, and more likely to misperceive their networks as attitudinally diverse. Other data suggest that this is unlikely, however. In an elaborate field study, Levitan and Visser (in preparation) assessed individuals' perceptions of their network members' attitudes as well as network members' actual attitudes. They found that perceptions of social network composition were remarkably accurate. Furthermore, they found that individuals who were uncertain about their own attitudes were no more or less likely to misperceive network composition than those who held their attitudes with great certainty. These findings suggest that the relation between network composition and argument quality differentiation observed in the current study are not likely to be attributable to the tendency for those who are uncertain of their attitudes to overestimate the degree of attitudinal diversity within their social networks.

A second possibility is that individuals who are high in need for cognition (Cacioppo & Petty, 1982) and enjoy effortful cognitive tasks are more likely to think carefully about a variety of topics, including persuasive messages and features of their social networks. This, too, appears not to account for our findings. Our data set also included two items designed to assess individual differences in need for cognition (Krosnick, Visser, & Holbrook, 2002). Individuals embedded in more attitudinally diverse social networks were no higher in need for cognition than were individuals embedded in more congruent networks. In fact, participants whose networks included more attitudinal diversity were somewhat *lower* in need for cognition than those whose networks were more attitudinally congruent. Thus, this unexpected association between need for cognition and network composition would actually work to obscure the current result, rather than account for it. In fact, controlling for individual differences in need for cognition did not alter our findings.

Although far from definitive, these findings are reassuring regarding our interpretation of the current results.

Prior research has demonstrated the causal nature of the relation between network composition and attitude change, and prior and current data demonstrate that several third variables which might plausibly account for the current results cannot, in fact, do so. Nonetheless, experimental investigations of the impact of network composition on message processing are clearly worthwhile and will provide an important extension of the current findings.

Integration with related findings

These findings serve as a useful addition to a body of interdisciplinary scholarship that has tended to emphasize the *informational* value of diverse networks. In various investigations, researchers have concluded that diversity of opinions within social networks facilitates dissemination of information, increasing tolerance (Mutz, 2002a; Mutz & Martin, 2001), ambivalence (Huckfeldt & Morehouse Mendez, 2004), and informed decision-making (Huckfeldt, Johnson, 2004; Sunstein, 2003). The current results suggest that diverse networks not only facilitate dissemination of information, they also influence individuals' responses to the new information they receive. Individuals whose social contacts hold a range of viewpoints will devote careful attention to new information and adjust their attitudes according to their assessment of that information, whereas those surrounded by like-minded others do not. Thus, social network composition appears to influence not just access to information, but also processing of that information.

Although our investigation has focused on the consequences of presenting attitude relevant information to individuals with varying network compositions, it raises interesting questions about the role of network composition in instigating information seeking. Individuals embedded within diverse social networks may be motivated not only to maintain an attitude based on careful examination of information presented to them, but they may also seek out such information when it is not immediately available. They may turn to newspapers, books, the internet, and other people for more information. Ultimately, this motivation to better understand an issue may lead individuals with diverse social networks to have better informed opinions, not only because they have exposure to more viewpoints, but also because they seek out additional information and make better use of the information available to them.

Individuals embedded in diverse social networks would seem to benefit from attitudes based on thoughtful attention to attitude-relevant information, but social network diversity also has less beneficial consequences. In addition to rendering attitudes more open to change, diverse social networks weaken attitudes by decreasing attitude stability (e.g., Levitan, Mirabile, & Visser, 2004) and decreasing the tendency for individuals to act in accordance with their attitudes (Levitan, Kwong, & Visser, 2006). In line with these findings, other researchers have found that cross-cutting social connections lead to decreased political action,

including lowered rates of activism and voting (Mutz, 2002b). Thus, the same factors that lead to the careful deliberation on attitude-relevant information seem also to lead to a decreased willingness to act upon those attitudes.

Will any diversity do?

Given the impact of exposure to different views within one's social network, it is tempting to suppose that exposure to any divergent points of views will increase careful consideration of attitude-relevant information, regardless of its source. Indeed, there is evidence that exposure to differing attitudes through other venues such as the news media can increase tolerance for diverse attitudes (Mutz & Martin, 2001).

However, other evidence suggests that social network members have unique impact. In Visser and Mirabile (2004, study 2), only participants exposed to dissenting opinions attributed to network members (rather than other participants in the study) exhibited decreased attitude strength in response to attitudinal diversity. Although exposure to differing perspectives in general may have effects, social network members may have a special ability to regulate the strength of individuals' attitudes.

Future directions

The impact of social network composition upon depth of processing reflected in the current results raises a number of interesting new questions regarding the impact of attitudinally diverse social networks. In general, these results suggest that the impact of social network heterogeneity upon attitude strength may not be as simple as it first appeared. The current results demonstrate that, although individuals embedded in attitudinally diverse networks are more susceptible to persuasion, they are not uncritical of persuasive messages. In fact, because they base their attitudes on careful scrutiny of message content, they may be less persuaded than those in congruent networks when a persuasive message contains extremely weak arguments.

Another potential complexity arising from these differences in information processing involves the implications of network composition over time. In cross-sectional and experimental studies, we have consistently found that network diversity is associated with weaker attitudes that are susceptible to attitude change. The current results suggest that this enhanced attitude change was due to careful processing of new attitude-relevant information. This careful processing, in turn, may have implications for long term attitude strength. Attitudes that form or change through thoughtful processes tend to be relatively enduring (e.g., Petty & Cacioppo, 1986b), and so the careful consideration of new information motivated by exposure to divergent views within one's social network may ultimately enable individuals to establish stronger and more enduring attitudes. Thus, being embedded within a heterogeneous social network may weaken attitudes in the short term, but it may

set into motion processes that lead to stronger attitudes in the long term. Exploration of the temporal dynamics of social networks appears likely to reveal interesting complexities.

Conclusion

The results of the current investigation contribute to a growing appreciation of the social bases of attitude strength. Increasingly, attitude researchers have turned their attention to factors such as group membership and social identity, social roles, social power, culture, social norms, and social networks, and have begun to explore the implications of these social factors for attitude properties and processes. The social contexts in which people are situated vary in countless ways, and the implications for attitudes are undoubtedly complex. Understanding the interplay between features of the social context and the operation of attitudes represents the next big challenge for attitude researchers.

Appendix A. Counter-attitudinal persuasive messages

A.1. Strong argument condition

Next, we'd like to get your reaction to some ideas that have been written on the issue of capital punishment in recent years. On the following screens, you will see a message that was written by an organization that is interested in this issue. Please take your time and read each screen carefully.

Some people support the death penalty as a deterrent to crime, especially murder. But in fact there is absolutely *no* evidence that the death penalty deters crime. States that have death penalty laws do not have lower murder rates than states without such laws. And murder rates do not go down when states start using the death penalty, nor do they go up when states outlaw the death penalty. The reason the death penalty has no effect on murder rates is because, most often, people commit murder in the heat of passion, or under the influence of alcohol or drugs. They do not stop to think about the possible consequences of their acts.

Others suggest that murderers deserve to die. And certainly, the punishment should fit the crime. But in our society, we do not use the "eye for an eye" rule—doing to criminals what they have done to their victims. The punishment for rape cannot be rape. If a drunk driver hits an innocent victim, we do not punish the driver by running him over with a car. Nor should we punish the murderer with death. When the government puts people to death, it stoops to the level of the criminal and ignores the fundamental value of human life. The United States must stand firm in the belief that no one has the right to take another's life. Convicted murderers should be sentenced to prison for the rest of their lives, with absolutely no chance of parole.

The death penalty is also applied unfairly. Specifically, several recent studies have shown that the death penalty discriminates against the poor and against minorities. If a white person and a black person commit the exact same crime, the black defendant is *much* more likely to be sentenced to death, *especially* if the victim is white. Similarly, poor people are *much* more likely to be sentenced to death than people who can afford the high costs of private investigators and skilled criminal lawyers. Incredibly, over 90% of people charged with capital crimes are impoverished and are forced to rely on inexperienced, underpaid court-appointed attorneys.

Our legal system is not perfect, and mistakes do happen. A study published recently in the Stanford Law Review showed that there have been 350 cases where people have been sentenced to death, but it was later proven that they had *not* committed the crime. Some of those people had already been put to death before the error was discovered. Our legal system will never be perfect because it is run by people, and people do make mistakes. If we use the death penalty, some innocent people are bound to be put to death.

Some people support the death penalty in hopes that the death penalty may provide peace of mind for victims of crime. It's clearly true that all of us would feel extreme anger and a desire for revenge if a loved one was murdered. But a civilized society cannot base its legal system on rage and revenge. And in fact, the death penalty often makes things *worse* for victims' families, not better. Many family members of murder victims have reported that going through the death penalty process prolonged their pain, making it harder for them to put the terrible loss behind them and go on with life. What the families of murder victims really need is financial and emotional support to help them recover from their loss and resume their lives.

Conclusions. The death penalty does nothing to reduce crime. It is unfair—used most often against minorities and people who can't afford expensive lawyers. And there is no way to avoid mistakes, so innocent people *will* sometimes be put to death. People who commit crimes must be punished, but the death penalty has no place in our society.

A.2. Weak argument condition

Next, we'd like to get your reaction to some ideas that have been written on the issue of capital punishment in recent years. On the following screens, you will see a message that was written by an organization that is interested in this issue. Please take your time and read each screen carefully.

Some people support the death penalty because they believe that it makes criminals think twice before committing a serious crime. But this is not necessarily the case. A punishment will only cause people to think twice if it is applied swiftly and consistently. That isn't true of the death penalty. Only about 1% of all murders result in a death sen-

tence, and there are often long delays in carrying out the sentence. Since few criminals are sentenced to death and the process often drags on for many years, having the death penalty won't always cause criminals to think twice before committing a serious crime.

Other people favor the death penalty because they don't think taxpayers should pay to feed, clothe, and house people who have been convicted of committing brutal murders. But this logic doesn't hold up. It's true that life in prison is expensive, but with all of the extra appeals and other safety measures, the death penalty also costs taxpayers a lot of money. Murder trials take far longer when the death penalty is involved. It takes longer to assemble the jury, and after a murderer is convicted and sentenced to death, there are many lengthy appeals. The death penalty wastes the time and energy of the courts, the lawyers, members of the jury, and other personnel. It is a burden on the criminal justice system.

Politicians spend a lot of time debating the death penalty, and this is time that could be spent on more productive tasks. The time and energy that goes into debating the death penalty takes attention away from the kinds of social changes that might reduce the frequency of crime. By supporting the death penalty, politicians are simply hiding their own failure to find anti-crime policies that will really work. The death penalty should be abolished so that politicians can turn their attention to other matters.

Some people support the death penalty in hopes that the death penalty may provide peace of mind for victims of crime. Of course, all of us would feel extreme anger and a desire for revenge if a loved one was murdered. And indeed, many family members and loved ones of murder victims may themselves favor the death penalty. But some relatives of murder victims may not approve of the death penalty. There is no way to satisfy everyone.

Furthermore, the death penalty is "cruel and unusual" punishment. These days, people are most often put to death by receiving a shot, like the ones your doctor might give you. Although this method is considered less cruel and is less expensive than other methods, there can still be problems. For example, if there is not enough poison in the shot, people might not die immediately. In one case, a convicted murderer choked for several minutes before dying. People who have watched convicted killers being put to death have said that it is sometimes a painful, degrading process. It should therefore be abolished.

Conclusions. The death penalty is slow, and it is inefficient. Furthermore, the debate over the death penalty detracts attention from other important issues. And occasionally, things go wrong and convicted murderers suffer painful executions. People who commit crimes must be punished, but the death penalty has no place in our society.

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