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Cue Convergence

Associative Effects on Social Intolerance

Jaeho Cho
University of California-Davis
Homero Gil de Zuniga
Dhavan V. Shah
Douglas M. McLeod
University of Wisconsin–Madison

Studies examining the effects of news cues (i.e., labels used to characterize issue domains and social groups) typically fail to consider the possibility that news stories may contain multiple cues that have interactive effects on audience processing and opinion expression. To test this possibility, the authors conduct a Web survey–embedded experiment that manipulates features of a news report about civil liberties restrictions targeted at Arabs portrayed as either immigrants or citizens and as either extremists or moderates. Hypotheses predict stronger intercorrelations and faster speed of response among a range of social intolerance evaluations when respondents encounter the combination of immigrant and extremist cues. Findings indicate the convergence of immigrant and extremist cues not only yield stronger associations between group evaluations, social intolerance, immigration opposition, and minority disempowerment but also reduce response latencies. The results across these two measures provide support for a theory of associative priming via cue convergence.

Keywords: *cueing; cue convergence; associative priming; spreading activation; tolerance*

As research on cognitive effects of mass media moves forward, researchers have started to look beyond simple, direct effects of news content to consider how content elements interact with one another to influence the thinking of the audience (Keum et al., 2005; Shah, Kwak, Schmierbach, & Zubric, 2004). To date, most of this work focuses on the interaction of distinct news frames on audience cognitions, with scant attention to the interplay of news cues—the labels used to identify policy issues, characterize social groups, and define public figures in the news—and their potential influence. In particular, we are concerned with the convergence of defining cues in news texts and the implications of this co-occurrence as a situational trigger of various cognitions related to these cues.

As a context for our research on cue convergence, we explore the cues used to characterize Arabs in coverage concerning the war on terrorism in the aftermath of

the September 11 attacks. Different cues were simultaneously employed to depict Arab groups as more or less threatening by presenting them in ways that highlighted their status as out-group or in-group and as extremists or moderates. Defining the subject of a story as an outsider or a radical seems likely to foster threat perceptions and trigger related thoughts. We examine whether the co-occurrence of these cues fosters perceptions of threat, thus, encouraging the spread of activation to socially intolerant thoughts. We contend that if the convergence of threatening cues encourages the spread of activation to such cognitions, this should be observable in two indicators of associative priming: (a) a strengthening of associations between evaluations of Arabs and judgments of intolerance and (b) a hastening of the speed with which such judgments are formed (see Marcus, Sullivan, Theiss-Morse, & Wood, 1995).

Accordingly, this research considers whether cues that characterize Arab targets of U.S. government surveillance as immigrants rather than citizens and extremists rather than moderates come together to influence the strength of correlations between perceptions of the featured group and tolerance for expression, support for immigration, and minority empowerment. We also consider whether under conditions of cue convergence the speed at which these judgments are made increases, an unobtrusive indicator of the spread of activation among associated cognitions. This was accomplished by experimentally manipulating the cues contained in a news story concerning applications and extensions of the Patriot Act that was embedded in an online survey.

Literature Review

Cues and Convergence

The concept of cues (i.e., the labels used to characterize issues, groups, and figures in the news) and the related concept of frames (i.e., organizing devices used by journalists to structure press accounts) have increasingly gained attention in mass communication as a means to describe how subtle changes in news reports influence audience understanding (Shah, Watts, Domke, & Fan, 2002). Cues and frames are both thought to shape how people think about issues, groups, and figures by influencing individuals' mental activation and social evaluations. Unfortunately, the similarity in their effects have led to conceptual confusion about their status in news reports and their origins in the political arena (Reese, 2001).

Cues and frames differ in a number of ways. First, cues operate linguistically as modifiers used to define specific objects, whereas frames function as a means of structuring entire press accounts (Kuklinski & Hurley, 1994; Mondak, 1993; Shah, Keum, Boyle, Zubric, & Armstrong, 2004). As such, cues tend to vary from issue to issue and from group to group, whereas frames tend to reoccur across news reports as journalists return to established ways of presenting public affairs to citizens (Shah

et al., 2002). Second, cues are thought to result from the ideological competition among elites concerning the labels used to characterize entities in the news (e.g., the use of the *freedom fighter* as opposed to *insurgent rebel*), whereas frames result from norms of reporting and an implicit judgment on the part of news workers that certain ways of presenting the news garner audience attention (Edelman, 1993; Entman, 2004; Gamson, 1992; Gans, 1980; Iyengar, 1991).

Nonetheless, the presence of certain cues and frames in a text is believed to have similar effects as features of the news report interact with an individual's cognitive system to promote particular appraisals and prime certain associations (Price & Tewksbury, 1996). Research that examines the effects of news cues generally supports this perspective (Kuklinski & Hurley, 1994; Mondak, 1993). These studies find that subtle changes in the descriptors used to characterize objects can shape a range of social judgments made by the audience. Yet most examinations do not consider the interplay among different cues. That is, certain cues may resonate with one another and generate stronger reactions among audience members. Given that studies find such interplay among news frames (Keum et al., 2005; Shah, Kwak, et al., 2004), the potential for cue combinations to influence construct activation and social judgment should be explored.

These effects may be most pronounced on the activation of applicable constructs and associative priming to related ideas. Unfortunately, most examinations of framing and cueing effects treat basic cognitive network variables, such as conceptual integration and cognitive associations, as unmeasured mediating factors to focus on "higher order" attitudinal and behavioral outcomes. Given that the primary influence of news framing and cueing is on the cognitive responses of audience members, greater attention should be paid to the nature and structure of individuals' thoughts, particularly the connections among constructs (Domke, Shah, & Wackman, 1998; Price & Tewksbury, 1996).

Mental Networks and Associative Priming

Scholars concerned with interattitudinal structures have argued for a conception of memory as a network of interconnected cognitions (Anderson, 1985; Anderson & Bower, 1973; Collins & Loftus, 1975). These scholars have maintained that any one concept is associated with other constructs when encoded in memory, and the linkages between constructs are strengthened each time they are activated in tandem. Furthermore, as the number of separate linkages between constructs increases, so does the likelihood that one will be activated indirectly by the invocation of the other because of an "implicational relation" (Judd & Krosnick, 1989).

As a result, Berkowitz and Rogers (1986) argued, "When a thought element is activated or brought into focal awareness, the activation radiates out from this particular node along the associative pathways to other nodes" (pp. 58-59), increasing the probability that related constructs will come to mind. Drawing from these perspectives, theories of "spreading activation" contend that the stronger or more

numerous the mental pathways between constructs, the greater the chance that thoughts activated to process information about one construct will cascade through memory to other constructs, influencing subsequent evaluations and the formation of impressions (Lodge & Stroh, 1993).

Only a few scholars, however, have examined how cognitions activated by media coverage may spread to other constructs via mental pathways. Schleuder, McCombs, and Wanta (1991) examined how linkages among mental constructs influence the retrieval of information about candidates from memory; they concluded that media effects research should more thoroughly consider the outcomes of spreading activation. Building on these insights, Domke et al. (1998) found that individuals with well-developed cognitive connections among mental constructs produced more coherence among a range of evaluations when spurred by certain types of media content. That is, individuals exposed to certain message features displayed strengthened associations among directly primed and related elements, suggesting that for these individuals, activation spread more readily among the nodes composing their mental networks.

These findings share some similarity with Neuman's (1981) notion of integrative complexity. Typically assessed through content coding of open-ended responses, Neuman's measures have been confounded with loquacity (Luskin, 1987). Others have tried to develop alternate methods for assessing the interconnection between cognitive elements, including closed-ended measures (Eveland, Marton, & Seo, 2004). For this study, we adopt an approach similar to Sniderman, Hagendoorn, and Prior (2004), who examined the intercorrelation among various perceptions under different experimental conditions, and Fazio, Sanbonmatsu, Powell, and Kardes (1986), who assessed response latency as an indicator of the degree of integration between objects and their evaluations.

We consider these two approaches to gauging the spread of activation as complementary; each provides unique insights into the nature of spreading activation resulting from interaction with news texts. Specifically, measures of associational strength provide some indication of the degree to which cues trigger the cascade of activation to related cognitions, thereby offering some insight about the structure of the mental network as a greater correspondence is seen between constructed activated through an implicational relation. On the other hand, measures of response latency reveal whether the spread of activation resulting from situational triggers alters the actual accessibility of these cognitions, as can be observed in more rapidly accessible cognitions.

Cue Convergence and Threat

The presence of particular cues, thus, may encourage the application of certain cognitions, which then trigger other aspects of long-term memory as activation spreads through the cognitive network. The convergence of cues and the resulting activation of applicable constructs may encourage particular avenues of thought (Wyer & Srull, 1986, 1989). This perspective is consistent with Edelman (1993), who

argued that the public's understanding of political issues and social groups is often swayed by transparent "categories" offered up by political elites. These categories constrain a range of potential realities, shaping political "enthusiasms, fears and antagonisms" when presented as natural, self-evident, or simple descriptions rather than carefully constructed linguistic and rhetorical choices (Edelman, 1993, p. 232). These cues have the potential to shape evaluations beyond the issue or group at hand, providing criteria for a range of other judgments. As this suggests, media may broadly influence the nature of responses and the coherence among a range of elements.

Of course, the effectiveness of the cue depends on its construction—the more complicated the cue, the less effective it will be. At their most powerful, cues are "contestable metaphors" found in word choices such as *freedom fighter* (as opposed to *insurgent rebel*) or *pro-choice* (as opposed to *abortion advocate*). In the case of Arabs, cues concerning residence status (immigrant vs. citizen) and radicalism (extremist vs. moderate) may be particularly powerful descriptors. Indeed, these cues may work in combination to shape a range of thoughts that are connected to evaluations of Arabs in the minds of audience members, including thoughts about civil liberties and multiculturalism. This suggests the need for scholars to examine the psychological underpinnings of these evaluations of tolerance and intolerance.

Particularly relevant for this article, a constrained set of ideologically laden cues was already believed to accompany portrayals of Arabs before and after September 11, 2001.[1] According to Said (2003), Arabs, who were represented as backward, fundamentalist, unpredictable, and dangerous prior to September 11, 2001, are increasingly depicted in these terms and presented as even more at odds with Western ideals. In Europe, a surge in Arab immigration has heightened these representations and sparked disputes concerning notions of nationality, civil liberties, and minority empowerment. As Sniderman et al. (2004, p. 35) noted, these changes have "triggered intense debate about the nature of citizenship" (Favell, 1998), "the claims—and limits—of multiculturalism" (Barry, 2001; Parekh, 2000), and even "the scope of free speech." The connections among these discrete judgments further suggest that the presence of particular cues may align a range of judgments.

Hypotheses

This study draws on the reviewed research to explore the interplay of different news cues on the structural coherence of individuals' group evaluations, judgments on civil liberties, and attitudes toward immigration and minority empowerment, as well as the speed with which these judgments are made. Of course, this research begins with the assumption that cues influence individuals' cognitive responses and expressed attitudes through their effects on spreading activation through mental networks. We are particularly concerned with how cue convergence affects the alignment of expressed attitudes and the speed of cognitive responding.

We argue that the combination of cues that mutually emphasize certain aspects of a perceived reality, while excluding others, seems likely to foster associative priming effects among linked concepts in memory. Specifically, we contend that the convergence of cues that reinforce stereotypes of Arabs as the "radical other" creates a context in which activation resulting from evaluations of Arabs becomes particularly likely to spread to connected constructs such as speech tolerance or support for immigration for those with existing linkages among these mental elements. This assumes that many individuals have cognitive connections between beliefs about Arabs, civil liberties judgments, attitudes toward immigration, and feelings about minority power in the United States. In this case, the co-occurrence of two cues, Arabs as immigrants (as opposed to citizens) and Arabs as extremists (as opposed to moderates), should trigger this associative priming effect and lead to greater coherence between evaluations of the group, speech freedoms, immigration policy, and feelings about minority power. Accordingly, we state the first research hypothesis:

Hypothesis 1: Correlations between evaluations of Arabs and (a) civil liberties judgments, (b) attitudes toward immigration, and (c) feelings about minority power will be stronger when individuals encounter the cue combination of immigrant and extremist as descriptors of Arabs than under other cue combination conditions.

If, as we expect, activation spreads through the cognitive network to related nodes, the convergence of stereotyping cues should lead to heightened correlations not only between the primary evaluation (i.e., group evaluations) and other judgments (i.e., support for freedom of speech, immigration, and minority empowerment) but also among these judgments, which we expect are all interconnected for many people. That is, under the situation that an individual encounters the convergence of immigrant and extremist cues, associative priming will likely increase the degree of association among these previously mentally linked elements, such as the second-level correlation between support for immigration and minority empowerment that exists distinct from the linkage to group evaluations. Based on this reasoning, we propose the second research hypothesis:

Hypothesis 2: Correlations among civil liberties judgments, attitudes toward immigration, and feelings about minority power will be stronger when individuals encounter the cue combination of immigrant and extremist as descriptors of Arabs than under other cue combination conditions.

As noted above, we theorize that the process underlying these predictions involves associative priming through the spread of activation. If in fact the effects of cue convergence on these evaluations are the result of an associative priming process, people should make related judgments more rapidly. As Fazio et al. (1986) observed, response latency should be facilitated when there is "a strong association

between the attitude object and an evaluation of that object" (p. 229). That is, people should render speedier responses concerning civil liberties, immigration, and minority power if there is a strong cognitive connection between these constructs and the primary evaluative object, which should be most likely to occur when the two cues co-occur. In this study, we consider response latency for these related judgments to be unobtrusive evidence of the strength of their association with evaluations of the targeted group. Accordingly, we predict that people will require less time to render judgments when there is a convergence of stereotyping cues. This leads to the following hypothesis:

Hypothesis 3: The latency of response when forming (a) civil liberties judgments, (b) attitudes toward immigration, and (c) feelings about minority power will be reduced when individuals encounter the cue combination of immigrant and extremist as descriptors of Arabs than under other cue combination conditions.

Method

Design

This study employs a 2 × 2 design for an experiment embedded within a Web-based survey. A group of students enrolled in courses at a large midwestern university participated in this study; their instructors offered extra credit for involvement in this research experience. All potential participants were contacted by e-mail and given the Web site of the online survey. A total of 578 students completed the survey experiment.

In addition to a standard battery of pretest and posttest questions, the respondents read and responded to an experimentally manipulated, fictional news story about potential civil liberties restrictions. This story appeared in several sections. The main section introduced a target of FBI monitoring as a result of an unspecified threat. At the end of this brief story, respondents had four choices. They could continue with the survey or they could read more information in one of three categories: tracking and monitoring, search and seizure, or secret arrest. Each section contained information about additional FBI efforts regarding the target of investigation. At the end of each section, individuals could either read more about the topic or switch to a different topic. Each topic had three levels of content, meaning that respondents could read up to nine additional story segments (beyond the main section) if they chose to do so.

Embedded within these stories were two manipulations that are the focus of this study. The first concerned the citizenship status attached to the subject of FBI scrutiny; the subject was described as an Arab American group in New York founded by U.S. citizens of Arab descent for one condition and an Arab group in New York founded by immigrants from Arab countries for the other condition. A second experimental factor concerned whether the target was defined as extremist or nonextremist. Language cues

such as *extremist* and *Front* were used in the story to describe the target under FBI suspicion for the extremist condition (e.g., Arab Solidarity Front, a New York–based extremist group) and *League* was used to describe the target of the FBI in the nonextremist condition (e.g., Arab Solidarity League, a New York–based group).[2]

Measures

After reading the manipulated stories, respondents answered questions concerning their evaluation of the group, their tolerance for the expression of extreme views, support for immigration, and their feelings about minority empowerment. Regarding group evaluation, participants were asked to assess the group targeted by the FBI using four semantic differential scales (foolish/wise, unfair/fair, threatening/nonthreatening, and dangerous/harmless). An additive index was created by averaging the scores from these four items (Cronbach's alpha = .87, $M = 5.17$, $SD = 1.63$). Although these items cover a range of evaluations, their high degree of association and consistency in tapping negative affect toward the group led us to treat them as a single scale.

The second variable examines the degree of tolerance for mediated expression by the group. Two statements, "The media should give extremist groups the opportunity to express their views" and "The media should not encourage extremist groups by providing news coverage" were used. Participants rated their agreement with each statement using a 10-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. The second item was reverse coded and averaged with the first item to create an index indicating that the higher score means more tolerance (interitem correlation $r = .39$, $M = 6.56$, $SD = 1.99$).

Support for restricting immigration was operationalized with an additive index of two items: "U.S. immigration guidelines should be more restrictive" and "U.S. restrictions on immigration have gone too far." Again, a 10-point scale was used to assess participants' agreement with the statements. This scale tapped whether respondents favored a more or less restrictive stance toward immigration, not simply their support or opposition to current immigration policy. To create an index for support of restricting immigration, the first item was reverse coded and averaged with the second item (interitem correlation $r = .58$, $M = 5.35$, $SD = 2.13$).

Finally, to gauge the level of political power that respondents would concede to ethnic minorities, the following question was used in the survey: "How would you feel about these groups gaining more political power in the U.S.?" This question was applied to five categories, including Hispanic Americans, Arab Americans, Asian Americans, African Americans, and Native Americans. As in the preceding indexes, a 10-point Likert-type scale, ranging from *extremely negative* to *extremely positive*, was employed and scores were averaged to construct an index for minority empowerment (Cronbach's alpha = .93, $M = 7.04$, $SD = 2.02$).

It is notable that for all of these measures, and all other measures and manipulations contained in the online survey, a time measure was recorded in the Web experiment log

file. This log file was used to create measures of response latency for each set of measures. When analyzing time measure in the Web experiment log file, we first identified abnormal outliers defined as responses 2 standard deviations higher than the mean score. It is likely that these outliers are attributed to time away from the online experiment engaging in other activities (e.g., answering a phone call), a limitation from which most Web-based experiments suffer. Although this is an issue related to our decision to collect data outside the laboratory, it affected only a small number of responses ($n = 6$) and was equally distributed across experimental conditions.

To generate a more valid measure grounded in the assumption that the outliers do not measure the actual time participants spent in answering questions, we replaced them with corresponding sample mean scores. As Mulligan, Grant, Mockabee, and Monson (2003) asserted with regard to the challenges of measuring response latencies in a survey response setting, researchers typically deal with the problem of outliers by transforming response times that are 2 or 3 standard deviations above the mean. Although seemingly arbitrary,

> trimming the tail of the latency distribution in this manner results in the loss of a very small proportion of the latencies and improves analysis by reducing the signal-to-noise ratio, allowing researchers to assess more clearly associations between accessibility and substantive variables of interest. (Mulligan et al., 2003, p. 293)

We also considered the potential differences in the rate of response as influenced by individual and technological differences particular to each participant. For example, some people are naturally faster than others in answering questions or have faster Internet connections that influence baseline response latencies. To control for this,

> researchers typically include in their models the latency or average latency on one or more simple, factual, nonpolitical questions considered to be indicative of respondents' baseline rate of response. Controlling for the baseline speed of response allows researchers to isolate between-respondent differences in response latency on particular survey questions from systematic differences in answering survey questions generally. (Mulligan et al., 2003, p. 294)

Accordingly, time scores used for our analyses were normalized by dividing time spent responding to item battery by overall time spent completing preexperimental survey questionnaires.

Analysis

Testing Hypotheses 1 and 2 requires comparing the strength of associations among concepts rather than paying attention to mean differences across experimental conditions. Thus, Pearson correlations were calculated among four indexes

created and the correlation coefficients (r) were statistically compared throughout the manipulations using z statistics. As described earlier, participants in our experiment were allowed to continue reading more news stories after reading the main news story. This potentially different amount of self-opted exposure to experimental treatment may have an impact on the results. To address this concern, we created a variable for the number of stories read after being exposed to the main story and employed it as a control variable for all correlation analyses reported below. Other controlling variables were not used in this study because this analysis is based on an experiment where respondents were randomly assigned to experimental conditions.

Results

Before testing our hypotheses formally, we performed a series of ANOVA tests to detect whether the experimental manipulations created any significant mean differences in the four variables of our concern. Results showed no significant differences, indicating that the changes in the story did not have a notable influence on respondents' mean scores concerning the group under FBI suspicion, tolerance for expression, immigration policy, or minority power more generally (see Table 1). Thus, the manipulations did not sway the extent of these evaluations, although they did produce a more subtle set of effects.

As predicted, the relationship between group evaluation and the other three variables—expressive tolerance, support for immigration, and minority empowerment—differed depending on the cue combinations to which the participants were exposed (see Table 2). More specific, as we hypothesized, the correlations in the immigrant/extremist (IE) condition were higher than those in the other experimental conditions. We consider the correlations between group evaluations and each assessment in turn and test whether they are significantly different across experimental conditions.

Group evaluation and expressive tolerance. Under the IE condition, a Pearson correlation between group evaluation and expressive tolerance was .382, whereas correlations for citizen/nonextremist (CN) and immigrant/nonextremist (IN) conditions were .017 and .055, respectively. Once we compared correlation score in the IE condition to those in the CN and the IN conditions, z statistics indicated that the differences were statistically significant ($z = 3.179$, $p < .001$ for the IE and the CN comparison; $z = 2.865$, $p < .01$ for the IE and the IN comparison). When the story characterized the FBI target with cues of citizen/extremist (CE), the correlation between group evaluation and expressive tolerance was .279. Although the correlation in the CE condition is weaker than that in the IE condition, the formal test comparing the two correlation coefficients did not achieve statistical significance. Overall, when the extremist cues were emphasized, the group evaluation and expressive tolerance correlations were stronger. But when extremist cues were used along with immigrant cues (IE condition), the strength of correlation increased dramatically.

Table 1
Mean Differences Across Experimental Conditions

Condition	Group Evaluation	Expressive Tolerance	Support for Immigration	Minority Empowerment
Citizen-Nonextremist	5.27 (1.72)	6.60 (1.86)	5.52 (2.04)	7.05 (2.04)
Immigrant-Nonextremist	5.37 (1.61)	6.56 (1.96)	5.21 (2.15)	7.03 (2.05)
Citizen-Extremist	4.98 (1.59)	6.53 (2.26)	5.13 (2.17)	7.20 (1.99)
Immigrant-Extremist	5.08 (1.61)	6.59 (1.88)	5.55 (2.17)	6.91 (2.03)

Note: Entries are mean scores for each item battery; standard deviations are in parentheses.

Table 2
Correlations With Group Evaluation by Condition With Difference Tests

Condition	Expressive Tolerance	Support for Immigration	Minority Empowerment
Immigrant-Extremist	**.382 (n = 131)**	**.410 (n = 131)**	**.306 (n = 131)**
vs. Citizen-Nonextremist	.017*** (n = 147)	.164* (n = 148)	.140 (n = 148)
vs. Immigrant-Nonextremist	.055** (n = 146)	.095** (n = 146)	.184 (n = 145)
vs. Citizen-Extremist	.279 (n = 139)	.168* (n = 139)	.254 (n = 138)

*p < .05. **p < .01. ***p < .001.

Group evaluation and support for immigration. In a similar manner, the correlation between group evaluation and support for immigration was strongest (r = .410) in the IE cue combination. This compared with much weaker correlations under the CN (r = .164), IN (r = .095), and CE (r = .168) conditions. When the IE correlation was statistically compared with the correlations obtained in the other experiment conditions, the z statistics confirmed that differences were statistically significant (z = 2.227, p < .05 for IE vs. CN; z = 2.806, p < .01 for IE vs. IN; z = 2.160, p < .05 for IE vs. CE). Moreover, not even one of the z-statistic tests among the rest of the experiment conditions attained statistical significance, providing implicit support for our hypothesis.

Group evaluation and minority empowerment. This general pattern continued in the correlations between group evaluation and minority empowerment. The correlation was strongest in the IE condition (r = .306). The other experimental conditions—CN, IN, and CE—revealed a somewhat stronger set of associations relative to the prior comparisons (r = .140, r = .184, and r = .254, respectively). As a result, z statistics comparing the correlations did not achieve statistical significance. Thus, although the differences are directionally consistent with the hypothesis, formal tests do not provide support in this case.

To summarize, the pattern of results shows that the correlations between group evaluations and the other assessments are consistently strongest in the condition where respondents are exposed to the combination of immigrant and extremist cues. Indeed, the formal tests indicate that the correlations in this condition are significantly higher than the other three conditions in five out of nine tests, providing some support for Hypothesis 1. As this suggests, under the condition where the cues converged, individuals' like or dislike for the groups became more tightly aligned with a range of other seemingly linked judgments about civic liberties, immigration, and minority power.

To test Hypothesis 2, we examined whether there was a difference between conditions in the strength of the correlations among expressive tolerance, support for immigration, and minority empowerment, depending on whether the cue combination was convergent (IE condition) or divergent (the other three conditions as a whole). Table 3 presents the patterns of intercorrelations, with the cue convergence condition above the diagonal and in the cue divergence conditions below the diagonal.

First-level correlations. As observed above, results indicate that group evaluations were more strongly correlated with each of the other assessments in the cue convergence condition than in the cue divergence conditions. Given the larger cell sizes, the differences in the size of correlations across experimental conditions more readily achieved statistical significance for group evaluation and speech tolerance ($z = 2.219$, $p < .01$) and group evaluation and immigration ($z = 2.956$, $p < .01$). Likewise, the correlation between group evaluation and minority empowerment was stronger when cues converged ($r = .306$) than when they diverged ($r = .183$), but z statistics for this comparison did not reach statistical significance.

Second-level correlations. Beyond the linkage of group evaluations with tolerance, immigration, and minority empowerment, the results reveal that the intercorrelations among the second-order variables (i.e., tolerance, immigration, and minority power) were also stronger in the cue convergence condition than in the cue divergence conditions. More specific, expressive tolerance was more strongly correlated with support for immigration in the cue convergence condition ($r = .474$) than in the cue divergence conditions ($r = .282$), with the z statistic being statistically significant ($z = 2.246$, $p < .05$). In a similar manner, the correlation between expressive tolerance and minority empowerment was stronger in the cue convergence condition ($r = .453$) than in the cue divergence conditions ($r = .324$), but the z statistic comparing these two coefficients did not achieve statistical significance. A similar pattern was found for the correlation between immigration and minority power. That is, although the correlation between the two variables was stronger in cue convergence condition ($r = .412$) than in cue divergence conditions ($r = .382$), formal test of the difference did not reach statistical significance.

Table 3
Correlations Among Variables Contrasting Immigrant/Extremists With Others

	Group Evaluation	Expressive Tolerance	Support for Immigration	Minority Empowerment
Group evaluation	1.00	**.382** (*n* = 131)**	**.410** (*n* = 131)**	**.306 (*n* = 131)**
Expressive tolerance	.117** (*n* = 432)	1.00	**.474* (*n* = 132)**	**.453 (*n* = 132)**
Support for immigration	.137** (*n* = 433)	.282* (*n* = 435)	1.00	**.412 (*n* = 132)**
Minority empowerment	.183 (*n* = 431)	.324 (*n* = 433)	.382 (*n* = 434)	1.00

Note: Cue convergence = above diagonal; cue divergence = below diagonal.
*$p < .05$. **$p < .01$.

In sum, the trend is consistent; participants who read news stories with convergent cues more strongly associated the four variables with one another than those who read news stories with divergent cues. In addition, statistical comparisons of the size of the correlations found that they were significantly different in three out of six tests.

Response latency. Furthermore, time measures recorded in the Web experiment log file were analyzed to test Hypothesis 3, predicting that participants in the cue convergence condition—IE cue combination—would generate faster response to the postmanipulation survey questions tapping the four variables of our interest than those in the rest of the experimental conditions. As reported in Table 4, the results of *t* tests indicate a clear pattern in which participants spent less time answering questions under the cue convergence condition than under the cue divergence conditions.[3] More specific, participants' answers to the questions of expressive tolerance were faster under the cue convergence condition than under the cue divergence conditions ($t = 1.72$, $df = 575$, $p < .05$, one-tailed). In a similar manner, participants in the cue convergent condition spent less time answering the questions of minority empowerment than those in the cue divergence conditions ($t = 2.58$, $df = 575$, $p < .001$, one-tailed). Although the *t* test for support for immigration was not statistically significant, the result of mean differences in time spent was consistent with the hypothesized pattern in that responses were faster under the cue convergence condition than the cue divergence conditions.

Conclusion

Given these results, there is general support for the three hypotheses guiding this inquiry. People who encountered the Arab portrayal cueing conceptions of the

Table 4
Difference in Time Spent Between Cue Convergence and Divergence Conditions (*t* test)

Survey Questions	Cue Convergence (n = 133)	Cue Divergence (n = 444)	t value
Expressive tolerance	1.21 (.45)	1.29 (.51)	1.72*
Support for immigration	.92 (.30)	.94 (.35)	.40
Minority empowerment	.42 (.15)	.46 (.17)	2.58***

Note: Entries are normalized seconds calculated by dividing time spent responding to item battery by time spent answering preexperimental items; standard deviations are in parentheses.
*p < .05. ***p < .001.

immigrant extremist most closely connected their evaluations of the group featured in the news story to other judgments involving civil liberties, immigration, and minority empowerment. Specifically, favorable group evaluations became more closely aligned with tolerance for mediated expression of extreme perspectives, opposition to restrictive immigration policies, and minority empowerment, whereas unfavorable evaluations of the group became more closely linked to intolerance for such expression, support for immigration restrictions, and opposition to minority empowerment. Thus, these data provide considerable support for Hypothesis 1. The results further reveal that the correlations among these variables grew when the cues converged to portray the Arab as the radical other, such that intolerance, immigration opposition, and minority disempowerment were more tightly interrelated, although support for Hypothesis 2 is considerably weaker.

When coupled with the fact that we did not observe differences in mean scores on these variables across experimental conditions, these findings become more interesting. Traditional approaches to analyzing experimental data would not have revealed these effects. We examined these effects because of the expectation that spreading activation and associate priming would strengthen the correlations among these related evaluations. Many individuals appear to have mental networks that contain cognitive connections among these constructs, yet it was under the conditions of cue convergence that we observed more coherence among these evaluations. Thus, measures of associational strength provide some evidence of the degree to which cues trigger the cascade of activation to related cognitions, offering insights about the structure of the mental network as a greater correspondence is seen between constructed activated through implicational relations. This tightening of intercorrelations, although underexplored in mass communication research (cf. Domke et al., 1998), may have important consequences. Balance theories of attitude consistency (e.g., Heider, 1946) would suggest that these attitudes would be more longstanding and resistant to change and may work in combination to inform other related evaluations.

The increase in the positive interrelationship among these judgments under certain cue combinations implies that news use matters in ways not well explored.

These conclusions are bolstered by the results of the time analysis testing of Hypothesis 3, which reveals that participants who encountered the IE cue combination generated the fastest normalized responses to the postmanipulation survey questions concerning civil liberties, immigration, and minority power. This measure of response latency suggests that the spread of activation resulting from situational triggers altered the actual accessibility of these cognitions, as can be observed in more rapid accessibility. Specifically, participants spent significantly less time when answering questions of expressive tolerance and minority empowerment under the IE condition as compared to the other experimental conditions. In sum, when coupled with the results for Hypotheses 1 and 2, these findings that people consume less time in making decisions on social issues under a certain cue combination lend additional support to our claim of cue convergence effects on knowledge activation and associative priming.

Although there are some limitations of any response latency measure conducted outside the strict controls of a laboratory setting, we believe it validates the associational analysis and provides some triangulation on our examination of cue convergence effects. Respondents to our study may have been distracted while completing the questionnaire, although our analysis suggests that any distraction appears equally distributed across experimental conditions. As such, it is just another randomized factor that did not affect the test of Hypothesis 3. Indeed, any error would be noise in the data set, make hypothesis testing more conservative, and reflect real world distractions.

Moreover, our approach for constructing our measure of response latency is consistent with other renderings of this type of metric outside the laboratory (Mulligan et al., 2003). We took appropriate steps to minimize measurement error, such as recoding extreme outliers and normalizing response latency measures with baseline response time measures as advised by other scholars attempting to move response latency measurement outside the laboratory (Mulligan et al., 2003). When paired with the associational analysis, the consistency of these findings provides support for our theoretical argument.

Together, these findings have clear implications for future research on media effects. Most important, this research reveals how news cues work in combination to produce effects. It was the co-occurrence of the immigrant and extremist cues that generated the observed results. That is, this study finds that cues can have interactive effects, consistent with other recent framing research (Shah, Kwak, et al., 2004). The co-occurrence of certain types of language cues has effects on the structure of individuals' thoughts and the speed at which judgments are made.

There are two possible reasons why certain cues may interact to influence the connections individuals make between attitudes: (a) certain combinations caused individuals to consciously feel more motivated to think about and respond consistently

with a range of activated constructs and (b) certain combinations triggered increased associations with existing mental structures, thus, activating a greater number of constructs when responding more or less automatically, absent the motivation to process. The most likely explanation of the data seems to be a combination of the two.

Regardless, these data indicate that the interaction between cues has implications for individual cognitive responding. Research on media cueing has only begun to discover how subtle elements of news content interact to produce effects (Shah, Keum, et al., 2004). A recognition that multiple cues exist in all news stories and dedicated effort to understand how they may interact with one another is clearly required. Future research of cue interactions should test outcomes across topics to help clarify what aspects of human cognition and media coverage might help explain the reasons for these relationships.

On a related point, examinations of communication cueing effects are aided by looking beyond mean scores to consider the associations among variables under different experimental conditions and latency of response. These methodologies allow the researcher to observe the most basic consequences of cueing on cognitive processing and attitude expression. They provide some insight into the structure of expressed thoughts and the cognitive process underlying these expressions. A particularly important innovation of this research is the application of response latency techniques outside the laboratory, which provides a new direction for future survey and survey-experimental work in communication.

In addition, these findings suggest that content analyses of media should determine the relative frequencies and co-occurrence of cues. If the co-occurrence of cues has potency above and beyond the effects of these cues individually, media content studies must begin attending to not only the presence of cues but also the degree to which these cues overlap with one another. Such research might include tracking the simultaneous presence of cues in various types of news content, followed by an examination of the implications of this convergence for the processing of news texts.

These findings also obviously have implications for media portrayals of Arabs and research on minorities and the media. In the wake of September 11, media representations of Arabs have varied widely, presenting a range of Arab and Muslim groups as more or less threatening. Our finding that cues highlighting their status as out-group rather than in-group and as extremists rather than moderates interact with audience members' existing cognitions to produce the observed effects is notable on a number of fronts. First, it seems that a range of intolerant, xenophobic, and prejudice attitudes are linked to the notion of the Arab as the radical outsider. Although portrayals of Arabs were simply the context for this study, this certainly has implications for those interested in how media coverage of Arab groups may be reinforcing intolerant beliefs. Second, and perhaps more important, this research suggests that the cueing of race and ethnicity can have important, albeit subtle, effects on the thinking of media consumers.

As a whole, this study provides a promising but preliminary avenue of research. It remains to be discovered whether such interactions occur across other topics and

for other groups, as well as whether the co-occurrence of cues can be systematically cataloged in the media production process. Nevertheless, it is clear that cue convergence has effects that go beyond what would be predicted by examining the individual outcomes of the components. This lends a new layer of complexity to our understanding of how the choices and patterns present in media texts may contribute to the cognitions and ultimately the behaviors of individuals.

Notes

1. Literary critic and social commentator Edward Said (1978) first critiqued journalistic, literary, and academic representations of Arabs three decades ago in *Orientalism*. In this seminal text, Said contended that portrayals of Arabs emphasize their traditionalism, even orthodoxy, and reinforce notions of "otherness"—an opposition to Western ways of being and thinking.

2. A third experimental factor, the frame of the news story as structured on a group or an individual target, was crossed with these two experimental manipulations in a full factorial design. In the group condition, respondents read a story in which the selected group was the subject of FBI scrutiny. The group was discussed as a unit, and any quotes came from an anonymous spokesperson for the group. Where possible, the story made reference to *groups* rather than *individuals*. In the individual condition, participants read about a particular member of the selected group, Joseph Hazim for the citizen condition or Youssef Hazim for the immigrant condition, who also provided the quotes. Although this frame manipulation factor was not part of this analysis, its inclusion did not alter the effects of cue convergence reported in the text.

3. The only exception of this pattern was found for group evaluation; time spent answering the questions of group evaluation was virtually equal in the two experimental conditions, cue convergence and cue divergence. And this finding was not reported in Table 4 because the comparison of time spent for group evaluation, a judgment directly grounded in the manipulated news story, was not of our interest.

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Jaeho Cho, PhD, (University of Wisconsin–Madison, 2005) is an assistant professor in the Department of Communication at the University of California, Davis. His research interests concern the influence of mass media and new communication technologies on political judgment and behavior.

Homero Gil de Zuniga is a doctoral candidate in the School of Journalism and Mass Communication at the University of Wisconsin–Madison. His research interests are twofold and include the role of the media, particularly new media, in civic and political participation and the effects of the Internet in our daily lives.

Dhavan V. Shah (PhD, University of Minnesota) is professor of journalism and mass communication and political science at the University of Wisconsin–Madison. His research centers on social psychology of political communication. His two primary programs of research concern are the capacity of interpersonal and mass communication, particularly the Internet, to encourage engagement in civic life and the influence of news framing and cueing on cognitive complexity, social judgment, and public opinion.

Douglas M. McLeod (PhD, University of Minnesota) is professor of journalism and mass communication at the University of Wisconsin–Madison. His research interests are in social movements, conflicts, public opinion, and the mass media.