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Category membership moderates the inhibition of social identities☆

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Abstract

Although all people belong to a multitude of different social categories and occupy various social roles, the mechanism(s) through which people manage such a complex and potentially incoherent self-concept is not well understood. We report a study showing that excitatory and inhibitory processes act in tandem to keep potentially conflicting self-categorizations from simultaneously occurring. Specifically, when members of the fraternity/sorority system activated their "Greek" identities, the mental representation of their normatively conflicting identity as university students was inhibited below baseline. Importantly, participants who were non-members of the Greek system, although equally familiar with the relevant stereotypes, did not show this pattern of inhibition, indicating that it is only when one experiences conflict between two relevant social categories that such inhibitory processes are engaged.

Introduction

Every person belongs to a diverse variety of social categories (e.g., gender, ethnicity, occupation, etc.), and this complexity of identity poses challenges for processes of social perception and impression formation. Given the array of characteristics associated with each of a target's social identities, the perceiver faces a glut of implied information, not all of which will necessarily be useful in any given situation. Social perceivers must navigate among these multiple categories when making decisions about others, constantly determining which categories are situationally important and which are not (e.g., Bodenhausen & Macrae, 1998).

In principle, attending to all detectable social categories would provide the most complete picture of a social target. However, the sheer complexity of social life, paired with an all-too-common lack of motivation or capacity to process others in a complex manner, can lead to focusing on just one of the many available categorizations (Fiske & Taylor, 1991; Sherman, Macrae, & Bodenhausen, 2000). Once this initial categorization is made, perceivers can form a simplified impression of a target, based on the single dominant category. The efficiency and coherence of impressions based on only one category suggests that category dominance may be a common default preference of social perception (Macrae, Bodenhausen, & Milne, 1995). According to this view, available categories "race" with one another for enough activation to cross an attentional threshold. Once a particular category gains sufficient activation, it wins the race and becomes the dominant category, guiding subsequent processing.

The existence of a "mental race" between competing bases for social categorization, however, raises the question of what happens to the losing competitors. One possibility is that of simple decay, wherein the activation levels of the losing categories slowly decay back to their baseline levels. Macrae et al. (1995) provided empirical evidence consistent with a second possibility, namely an inhibitory process in which the losers of this mental race are *actively suppressed* below baseline levels. Macrae et al. (1995) posited that this inhibitory system dampens the influence of potentially competing categories, avoiding the potential confusion that might arise if

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diverse associations from multiple categories became simultaneously activated.

Inhibitory processes in self-categorization

The present study sought to extend previous work on category inhibition to the case of self-perception. Self-categorization theorists have argued that, under appropriate circumstances, our sense of identity shifts from a personal to a social level (e.g., Turner, Oakes, Haslam, & McGarty, 1994). When we self-categorize at the social level, the norms of the social category become central to self-conceptions and self-regulation through a process termed *self-stereotyping* (e.g., Hogg & Turner, 1987). One factor potentially complicating this process is the fact that, as just noted, people always belong to multiple social groups, and the norms of one group identity may be orthogonal to, or even contradictory with, the norms of other group identities. For example, the norms that accompany identification as a mother (e.g., nurturance, patience) conflict with the norms that might be associated with identification as a corporate lawyer (e.g., aggressiveness). How, then, is a working mother able to manage the inconsistency between different social identities?

The self is arguably one of the richest and most complex memory structures (Baumeister, 1998), and just as we must tune into an appropriate view of others in order to form a meaningful impression, so too must we tune into an appropriate view of ourselves in order to behave in a coherent and situationally appropriate manner. Considering the complexity of our own web of social roles and identities, processes of category selection, dominance, and inhibition may be essential for effective self-regulation. When the social situation or our own goals activate a particular social identity, we may actively inhibit other self-categories that could otherwise compete for influence over self-regulatory processes (e.g., recently active identities). This inhibitory mechanism may be particularly functional when the identities in question provide conflicting normative standards for self-regulation.

The capacity for inhibiting our own social identities may serve a number of beneficial functions, including the establishment and maintenance of a subjectively stable self-concept. Indeed, maintaining a consistent self-concept has been shown to be a particularly strong motive, and cognitive inconsistency can lead to a host of strategies to regain consistency (Festinger, 1957; Higgins, 1989; Swann, 1990). The dissonance literature indicates that cognitive inconsistencies are at their most aversive when conflicting ideas or beliefs are simultaneously active (McGregor, Newby-Clark, & Zanna, 1999; Newby-Clark, McGregor, & Zanna, 2002). Indeed, it is when one is reminded of one behavior or cognition (e.g., not using condoms) that conflicts directly with another highly accessible behavior or cognition (e.g., giving a speech on safe sex) that dissonance is most intensely aroused (Stone, Aronson, Crain, Winslow, & Fried, 1994). If the inconsistent elements are not simultaneously considered, then one can potentially remain blissfully ignorant of the cognitive conflict. Similarly, possessing two or more identities with conflicting norms or ideologies would likely be aversive if these dissonant norms were simultaneously active. However, if the situational dominance of one identity also leads to the inhibition of normatively conflicting alternate identities, the likelihood of conflicting sets of identity-related norms becoming simultaneously active would be greatly reduced. Thus, such inhibitory processes could reduce the chance of experiencing an incoherent sense of oneself.

Study overview

This study tested the hypothesis that our own social identities can be activated and inhibited in the same way that we activate and inhibit social categories when perceiving others. The study used a paradigm similar to one initially used by Macrae et al. (1995) to show category-based stereotype inhibition. Northwestern University students who were either members or non-members of a fraternity/sorority (the so-called ''Greek system'') were primed with either the Greek identity or a neutral, control prime. This Greek prime was expected to activate relevant aspects of the self-concept for members of the Greek system, while simply activating the concept ''Greek'' for non-Greeks. Next, a lexical decision task was administered to test the mental accessibility of concepts associated with Greek and student identities.

It is important to note that Macrae et al.'s (1995) Study 2 indicated that inhibition only occurs in cases where individuals are presented with a target who is simultaneously categorizable into multiple categories. For example, when presented with a Chinese woman, priming ''woman'' resulted in inhibition of Chinese stereotypes. However, priming ''woman'' in the absence of exposure to a Chinese woman did not have any influence on accessibility of Chinese stereotypes. Thus, in their case, simple priming was not a sufficient condition for category inhibition. It was only when a category was accessible *in addition to* encountering a salient target in which the two categories came into competition that inhibitory processes were engaged. In our paradigm, we primed both Greeks and non-Greeks with the concept ''Greek'' but did *not* explicitly offer participants a multiply categorizable target. Pretesting of both Greek and non-Greek students indicated that the dominant group norms for the Greek identity (e.g., partying and socializing) and the Northwestern student identity (e.g.,

studying and academics) were in conflict. We therefore hypothesized that after priming the Greek category, members of the Greek system would show inhibition of the descriptively competing category "student," because these participants regularly experience the role conflict associated with these two social identities and thus should have inhibitory mechanisms in place to minimize the inconsistency. In other words, for Greek participants, the self serves as a multiply categorizable target in which the categories can conflict. In contrast, non-Greeks were not expected to engage in inhibition of the "student" category because they do not experience this role conflict.

Method

Participants and design

Fifty-eight Northwestern University students (32 female) participated in this study for partial completion of a course requirement. Thirty of the participants (17 female) were pre-selected based their membership in a Greek-letter social organization (i.e., fraternity or sorority). Additionally these Greek participants were selected from all potential Greeks in the participant population because they scored highest in collective self-esteem for their Greek identity using Luhtanen and Crocker's (1992) Collective Self-Esteem scale. The remaining 28 participants (15 female) were selected due to their non-membership in a Greek organization. Pre-selection occurred via a mass testing session 4 weeks prior to the main study.

The study had a mixed 2 (Identity: Greek or Non-Greek) $\times$ 2 (Identity Prime: Greek or Control) $\times$ 2 (Lexical Decision Word Type: Greek-related or Student-related) design, with the last factor manipulated on a within-subject basis. Three participants were removed from the analyses due to unusually high error rates (2 Greek, 1 non-Greek), leaving 28 Greek and 27 non-Greek participants (13 non-Greeks with Control prime; 14 Greeks with Control prime).

Procedure

After giving informed consent, participants were seated in an individual cubicle with a computer and instructed that the experiment consisted of two short, unrelated pilot tests designed to obtain behavioral baselines for future experiments. These tasks consisted of the prime manipulation and the lexical decision task.

For the first task, participants randomly assigned to the Greek prime condition were asked to complete a paper-and-pencil collective self-esteem scale tailored for the Greek identity (Luhtanen & Crocker, 1992), whereas participants in the control condition completed a personal self-esteem scale that made no mention of any social groups (see Cheryan & Bodenhausen, 2000, for a similar method). Greek participants were asked to complete the collective self-esteem scale in reference to their own fraternity or sorority membership, whereas non-Greek participants were instructed to fill out the collective self-esteem scale as if they were members of the Greek system (ostensibly because this would help in the development of a psychometrically valid scale).

Following this prime manipulation, participants completed a lexical decision task designed to test the accessibility of concepts strongly associated with Greek and student identities. The task consisted of 96 trials in which participants were presented with letter strings on a computer screen. The letter strings were presented at the center of the computer screen, with a 1500-ms inter-trial interval during which a fixation point ("+") was presented. Participants were instructed to decide as quickly as possible whether or not each presented letter string was an English word and to respond by pushing either a "word" button (the "a" key) with their left hand or a "non-word" button (the "5" key on the keypad) with their right hand. Each letter string remained on the screen until the participant responded. Response time served as the primary dependent measure.

Forty-eight of the stimulus words consisted of actual words, and the other 48 consisted of pronounceable, non-word letter strings (e.g., rinty). The 48 actual words consisted of 24 non-stereotypic control words, matched for length with the 24 critical trials. These critical trials were split into two groups of 12 words each, each pre-tested to be associated either with membership in the Greek system (e.g., party and keg) or with participants' identity as Northwestern students (e.g., study and read). Both Greek and non-Greek students were pre-tested for lexical decision words involving behaviors, norms, and simple lexical associates of Greek and Northwestern student identities. There was a very high degree of overlap between Greek and non-Greek students in responses for both relevant identities. The order of the presentation of these 96 lexical decision trials was randomized for each participant.

Results

Response latencies faster than 200 ms or 2.5 standard deviations above the mean of correct latencies for actual words (<2% of trials) were eliminated prior to analysis. Incorrect responses, which were uniformly infrequent across both identity and prime conditions (<5% of trials), were similarly eliminated.

The latency data for the lexical decision task were subjected to a 2 (Group Identity: Greek or Non-Greek) $\times$ 2 (Prime: Greek or Control) $\times$ 2 (Word Type: Greek or Student) mixed-model analysis of covariance

(ANCOVA), with repeated measures on the third factor. Each participant's own average latency of non-error responses to neutral words served as the covariate, to control for individual differences in general response speed. The covariate was significant, $F(1, 50) = 126.44$, $p < .001$, and did not interact with any other factors.

Although no main effects were reliable, the ANCOVA did yield a marginally significant Prime × Word Type interaction, $F(1, 50) = 3.24$, $p = .08$. However, this interaction was qualified by the hypothesized Identity × Prime × Word Type interaction, $F(1, 50) = 5.96$, $p = .02$; the relevant means for this interaction are depicted in Fig. 1. To examine the nature of the interaction, the three-way interaction was decomposed into two Prime × Word Type interactions, one at each level of the identity variable. The interaction of prime and word type was significant for Greek participants, $F(1, 24) = 7.37$, $p = .01$, but not for non-Greek participants, $F(1, 25) = 0.15$, *ns*.

Planned contrasts further revealed that members of the Greek system who had been primed with their Greek identity showed the predicted pattern of facilitation for Greek-related words, as compared to those who received the control prime, $F(1, 50) = 3.51$, $p = .03$, one-tailed, which is generally understood to indicate activation of a concept. As predicted, those same Greek participants also showed the predicted pattern of inhibition of words associated with their identity as Northwestern students, a normatively conflicting identity, $F(1, 50) = 5.41$, $p = .01$, one-tailed, indicating that the Greek-identity prime led to inhibition of the student identity.

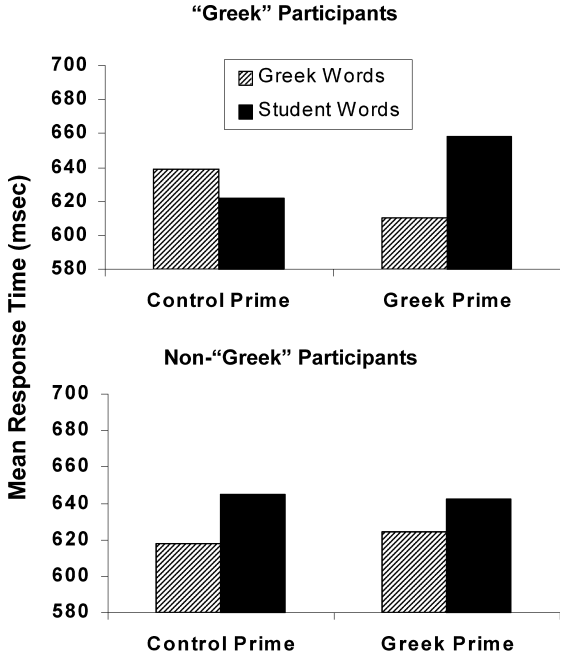

Fig. 1. Mean lexical decision latencies (ms) as a function of social identity, identity priming, and word type.

Unexpectedly, planned contrasts on the latencies of the non-Greek participants yielded no reliable effects of the prime for either Greek-related or student-related words, both Fs < 1. It was predicted that the Greek prime would activate Greek-related concepts for non-Greek participants, leading to a facilitation of responses for Greek-related words, while simultaneously having no effect on response latencies to student-related words (in contrast to the inhibition effect seen among Greek participants). The lack of a simple priming effect of the Greek prime for non-Greek participants was certainly surprising, especially considering the robustness of basic priming effects. Inspection of the pattern of means reveals that the anomaly seems to lie in the relatively fast responses of the non-Greek participants to the Greek words under the control prime condition (under the Greek prime condition, Greek and non-Greek participants were comparably fast, as would be expected based on simple facilitation of the primed category). Theoretically, there is no reason why the Greek words should be more accessible for non-Greek participants than for Greek participants under the control prime. To determine whether this might simply be an anomalous result, an additional 36 non-Greek participants were subjected to the procedure described above, with half randomly assigned to the Greek prime condition and half to the neutral prime condition. As can be seen in Table 1, these additional non-Greek participants did show the basic priming effect, such that a Greek prime facilitated responses to Greek-related words, $F(1, 33) = 8.07$, $p < .001$, one-tailed. Again, as predicted, the prime had no effect on response latencies to student-related words, $F(1, 33) = 0.14$, *ns*.[2] Moreover, when the data from both samples are combined, an overall analysis of lexical decision latencies for the student words revealed the predicted interaction pattern, such that Greek students primed with the Greek identity were significantly slower in responding to student words ($M = 650$) than were participants in the other three conditions (Ms = 612 for the Greek participant/Control prime condition, 635 for the non-Greek participant/Greek prime condition, and 633 for the non-Greek participant/Control prime conditions), $F(1, 86) = 5.75$, $p = .02$. Thus, the facilitation effect on responses to Greek words following Greek priming was common to both participant groups, but the concomitant inhibition effect on responses to student words was unique to the Greek participants.

[2] Alternate analyses were performed such that the data from the additional 36 non-Greek participants were added to the data from the original study. Such analyses do not change the nature of the Prime × Word Type interaction for Greek participants. For non-Greek participants, however, these analyses yielded the predicted facilitation effects for the Greek prime for Greek-related words, $F(1, 86) = 3.20$, $p = .04$, one-tailed, but no effect of the prime for student-related words, $F(1, 86) = .04$, *ns*.

Table 1
Mean lexical decision latencies (ms) of non-Greek participants (second sample) as a function of identity priming and word type

	Control prime	Greek prime	Difference
Greek-related words	611	573	−38
Student-related words	622	617	−05

Discussion

Inhibitory processes have been central to psychological theorizing in many domains (e.g., Clark, 1996; Kimble, 1994). The present findings add to a small but growing set of studies establishing the importance of inhibitory mechanisms in the realm of social perception (e.g., Dunn & Spellman, 2003; Macrae et al., 1995; von Hippel, Silver, & Lynch, 2000; for a review, see Bodenhausen, Macrae, & Hugenberg, 2003). In particular, these results provide evidence for the hypothesized role of excitatory and inhibitory mechanisms in self-categorization. Membership in the target category clearly moderated the influence of the Greek prime on accessibility of the student category. In prior research, Macrae et al. (1995) showed that activation of one category inhibited another category in a person perception task, but only if the two categories were competing for dominance in categorization of the target. In the absence of a multiply categorizable target, activating one did not result in inhibition of the other. Analogously, in the present study, response inhibition for student-related words occurred *only* for Greek participants, implying that experienced conflict between different social categories is necessary for inhibition in this context. In other words, Greek participants had the self available as a salient, multiply categorizable target, whereas non-Greek participants were likely simply to think about the Greek identity in isolation from other possibility identities (thus having no need to inhibit any other identities).

The obtained pattern suggests that the results are not simply due to priming effects; instead, the current results implicate the importance of category membership. Simple priming effects may explain the pattern of activation of Greek concepts among participants. However, the fact that inhibition occurred for the normatively conflicting category of student *only* for Greek participants (and not for either sample of non-Greek participants) indicates that fraternity/sorority members have experienced a conflict between these two identities in a way that non-Greek participants did not. Considering the high degree of stereotype consensus in the pretest of Greek and non-Greek participants, it seems unlikely that this conflict is simply due to differences in category knowledge. But even if this were so, the results for Greek participants would still fundamentally arise as a result of membership in the relevant categories. Thus, the present findings extend the earlier work of Macrae et al. (1995) by demonstrating for the first time (to our knowledge) that category membership can moderate the inhibitory consequences of priming a social category.

The very capacity to inhibit identities is likely to be determined by the interconnection of the mental representations of those identities, and the degree of psychological separation between different self-aspects is likely to vary across persons (e.g., Settles, Sellers, & Damas, 2002). Roccas and Brewer (2002) recently introduced the concept of social identity complexity, suggesting that individuals differ in the extent to which their subjective mental representations of identities are interrelated. According to Roccas and Brewer's typology, identity inhibition is likely to occur most powerfully when individuals have *compartmentalized* identities, or identities that are represented in relative isolation to one another and are typically not simultaneously active. If identities are represented together in memory, they will likely be recalled together and as such, it is only when identities are represented in a relatively compartmentalized manner that identity inhibition will have its most powerful effect.

Similarly, we propose that this inhibitory effect in self-categorization will be strongest in cases where the norms of different identities are in competition. The initial work of Macrae et al. (1995) might be taken to suggest that the incoherence of potentially diverging stereotypes, when applied to the same target, is at least a mildly aversive state of affairs for the social perceiver, leading to inhibitory mechanisms that help increase the coherence of social impressions. However, when the self is the target of categorization, the psychological "stakes" are potentially much higher. In addition to facilitating easier processing, inhibiting non-dominant self-categorizations may reduce the possibility of conflicting cognitions, norms, and goals associated with different identities becoming simultaneously activated.

In the "Song of Myself," Walt Whitman famously wrote, "Do I contradict myself? Very well then, I contradict myself (I am large, I contain multitudes)." In line with the long tradition of cognitive consistency research, we suspect that most people are not quite so sanguine about their self-contradicting tendencies as Mr. Whitman evidently was. Nevertheless, changes in families, workplaces, and social structure may bring diverse identities that were previously rarely held simultaneously into direct conflict. From managing both motherhood and a career to struggling to integrate bicultural identities, inhibition of self-aspects may facilitate the maintenance of a stable self-concept by reducing the likelihood that conflicting identities will be simultaneously active. Moreover, these processes of activation and inhibition almost certainly have implications for self-regulation. Every social identity is bound up with certain norms, attitudes, and expected behaviors, and

when an identity is activated, those self-same norms and attitudes become more likely to guide behavior. By inhibiting conflicting self-categories, we may also inhibit the normative standards attendant to the categories. As such, we not only reduce the subjectively experienced conflict between two identities caused by simple activation but also reduce the self-regulatory conflict that could occur when competing norms and standards exist.

References

Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. 2, pp. 982–1026). Boston: McGraw-Hill.

Bodenhausen, G. V., & Macrae, C. N. (1998). Stereotype activation and inhibition. In R. S. Wyer (Ed.), *Stereotype activation and inhibition: Advances in social cognition* (Vol. 11, pp. 1–52). Mahwah, NJ: Lawrence Erlbaum Associates.

Bodenhausen, G. V., Macrae, C. N., & Hugenberg, K. (2003). Activating and inhibiting social identities: Implications for perceiving the self and others. In G. V. Bodenhausen, & A. J. Lambert (Eds.), *Foundations of social cognition* (pp. 131–154). Mahwah, NJ: Erlbaum.

Cheryan, S., & Bodenhausen, G. V. (2000). When positive stereotypes threaten intellectual performance: The psychological hazards of "model minority" status. *Psychological Science, 11*, 399–402.

Clark, J. M. (1996). Contributions of inhibitory mechanisms to unified theory in neuroscience and psychology. *Brain and Cognition, 30*, 127–152.

Dunn, E. W., & Spellman, B. A. (2003). Forgetting by remembering: Stereotype inhibition through rehearsal of alternative aspects of identity. *Journal of Experimental Social Psychology, 39*, 420–433.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York: McGraw-Hill.

Higgins, E. T. (1989). Self-discrepancy theory: What patterns of self-beliefs cause people to suffer?. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 93–136). San Diego, CA: Academic Press.

Hogg, M. A., & Turner, J. C. (1987). Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology, 26*, 325–340.

Kimble, G. A. (1994). A frame of reference for psychology. *American Psychologist, 49*, 510–519.

Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18*, 302–318.

Macrae, C. N., Bodenhausen, G. V., & Milne, A. B. (1995). The dissection of selection in person perception: Inhibitory processes in social stereotyping. *Journal of Personality and Social Psychology, 69*, 397–407.

McGregor, I., Newby-Clark, I. R., & Zanna, M. P. (1999). Remembering dissonance: Simultaneous accessibility of inconsistent cognitive elements moderates epistemic discomfort. In E. Harmon-Jones, & J. Mills (Eds.), *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 325–353). Washington, DC: American Psychological Association.

Newby-Clark, I. R., McGregor, I., & Zanna, M. P. (2002). Thinking and caring about cognitive inconsistency: When and for whom does attitudinal ambivalence feel uncomfortable? *Journal of Personality and Social Psychology, 82*, 157–166.

Roccas, S., & Brewer, M. B. (2002). Social identity complexity. *Personality and Social Psychology Review, 6*, 88–106.

Settles, I. H., Sellers, R. M., & Damas, A., Jr. (2002). One role or two? The function of psychological separation in role conflict. *Journal of Applied Psychology, 87*, 574–582.

Sherman, J. W., Macrae, C. N., & Bodenhausen, G. V. (2000). Attention and stereotyping: Cognitive constraints on the construction of meaningful social impressions. *European Review of Social Psychology, 11*, 145–175.

Stone, J., Aronson, E., Crain, A. L., Winslow, M. P., & Fried, C. B. (1994). Inducing hypocrisy as a means of encouraging young adults to use condoms. *Personality and Social Psychology Bulletin, 20*, 116–128.

Swann, W. B. (1990). To be adored or to be known: The interplay of self-enhancement and self-verification. In R. M. Sorrentino, & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 408–448). New York: Guilford.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20*, 454–463.

von Hippel, W., Silver, L. A., & Lynch, M. E. (2000). Stereotyping against your will: The role of inhibitory ability in stereotyping and prejudice among the elderly. *Personality and Social Psychology Bulletin, 26*, 523–532.