Will a Category Cue Affect You? Category Cues, Positive Stereotypes and Reviewer Recall for Applicants

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Abstract. Most empirical research on stereotypes and recall has examined how a single social category of a target can influence a perceiver's recall. Will subtle cues of one or another social category of a target lead reviewers to markedly different recall? In this study one of two social categories of an applicant was subtly cued for reviewers – gender or ethnicity. Common cultural stereotypes hold that Asians have superior quantitative skills compared to other ethnic groups and that women have inferior quantitative skills compared to men. Participants reviewed the college application of a female Asian American high school senior, which included her score on the math scholastic aptitude test (SAT). In a recall task, cues of her gender category resulted in participants recalling significantly lower math performance for the applicant, while cues of her ethnic category resulted in participants recalling significantly higher math performance, compared to a control condition for which neither category was cued. Thus, positive stereotypes can influence reviewer recall, and subtle category cues can result in markedly different recall of an applicant. Findings suggest that category cues and multiple social categories are under-appreciated aspects of stereotyping in general and stereotyping in educational processes in particular.

1. Introduction

Psychologists have long known that people simplify their social environments by using features, such as gender and ethnicity, to categorize others into groups and reduce the complexity of their social world (Hamilton, 1981; Hamilton & Trolier, 1986). Allport (1954) first suggested that categorization of people into groups is necessary for adaptive functioning. Yet while categorization may facilitate information processing, other less desirable consequences such as stereotyping and biased recall may result (Fiske & Taylor, 1991). Stereotypes can be particularly consequential because certain social categories can be highly accessible to perceivers and may implicitly influence recall even in the absence of explicit intentions and awareness (Banaji & Greenwald, 1995).

An appreciation for how stereotypes may influence recall in educational contexts derives from the more general evidence that stereotypes can distort a perceiver's recall of information about a target (e.g., Duncan, 1976; Hamilton & Rose,

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1980). In many educational contexts, such as university admissions processes, individuals must be careful to avoid stereotyping an applicant on the basis of a social group to which they belong. Stereotypes may be of particular concern in application processes because many do not involve face-to-face contact between applicant and reviewer, and because stereotypes may have their greatest impact when a perceiver does not know a target personally.

The individuals we encounter each day, in face-to-face interactions and through mediated channels such as an application process, have many different features and simultaneously belong to many different social categories (Deaux, 1993). Social perception is complicated by the fact that people belong to multiple social categories, such as ethnic, gender, and socio-economic class categories. Some categories which may lead to stereotyping may be readily apparent to a perceiver while others may be less readily apparent (Frable, 1993).

Surprisingly, while much attention has been directed to theoretical and empirical research on stereotyping, little attention has been directed to stereotyping in light of multiple social categories. In fact, in most stereotype research paradigms, a single social category of a target is explored. More recently, psychologists have begun to empirically investigate how perceivers negotiate the many social categories of targets. Advances on this front have been made by social cognition researchers who are conducting research to improve our understanding of how perceptual categorization unfolds when there are multiple possible bases for categorization (see, for example, Macrae, Bodenhausen, & Milne, 1995; Pendry & Macrae, 1996; Smith & Zarate, 1992; Stangor, Lynch, Duan, & Glas, 1992; Zarate & Smith, 1990). Stangor et al. (1992, p. 207) expressed surprise that "the question of which of the many different features of target persons that present themselves are used in social categorization, by which people, under which conditions, and how the use of different features are combined," has only recently come to be a focal interest of social psychologists. Kunda and Thagard (1996) underscored the lack of research on how a perceiver chooses among the many possible categorizations of a target. Kihlstrom and Hastie (1997) warned that "models of social cognition developed to characterize the formation and maintenance of mental representations of stable (laboratory) entities are bound to provide inadequate accounts of social cognition."

Indeed, in order to understand the social and cognitive process involved in stereotyping, psychologists must understand when and why each of a target's many social categories affect a perceiver's impression of, and recall of, a target. For example, we must understand when and why an application reviewer may attend to one or another of an applicant's multiple social categories and how this may differentially affect his or her recall of details about the applicant.

Much of the limited attention given to categorization in light of multiple potential bases for categorization has addressed the question: "Which of competing categorizations will come to dominate a perceiver's evaluation of another?" (Bargh, Bond, Lombardi, & Tota, 1986; Brewer, 1988; Devine, 1989; Fiske & Neuberg, 1990; Hamilton & Sherman, 1994). Stangor et al. (1992) considered several factors

that might influence categorization, including the momentary accessibility of a feature (Higgins & King, 1981), the relative salience or uniqueness of a feature (Fiske, 1980; McGuire, McGuire, Child, & Fujioka, 1978), and the affective or motivational importance of a feature to the perceiver (Erber & Fiske, 1984; Hansen & Hansen, 1988). Perhaps surprisingly, little experimental attention has been paid to understanding the role of category cues – features of the environment or the behavior of an actor which may explicitly or implicitly draw a perceiver to one of a target's many social categories. Can subtle cues lead reviewers to stereotype the same target in different ways and exhibit significantly different recall about a single target?

Concurrent with lack of attention to category cues, and more generally to multiple categories of targets, little empirical work has been directed to understanding positive stereotypes about gender and ethnic groups and the power of positive stereotypes to affect recall. Recent research (Shih, Pittinsky, & Ambady, 1999) found that positive stereotypes such as 'Asians have superior skills in math' can lead to boosts in the academic performance of Asian Americans. While most research focuses on the threatening nature of negative stereotypes, stereotypes which leave their targets vulnerable to self-application and self-confirmation (Steele & Aronson, 1995), this work found that individuals are more generally susceptible to stereotypes. At times they are threatened by, and vulnerable to, negative stereotypes, but at other times they are susceptible to the self-application and self-confirmation of positive stereotypes. Will positive stereotypes influence a reviewer's recall of details about an applicant?

This study examined whether subtle cues of a target's different social categories, gender and ethnic categories, will make salient different stereotypes about the target and influence reviewer recall during an application review. The term 'category cue' is used to refer to a feature of the environment or a behavior of an actor which either explicitly or implicitly draws the attention of a perceiver to one of a target's many social categories. Salience, a property of a stimulus in a particular context (McArthur, 1981; Taylor & Fiske, 1978), is a term researchers use to describe which external objects capture a perceiver's attention. Here the term 'category salience' refers to an instance in which one of many social categories of a target captures a perceiver's attention.

It is important to recognize that a category cue will not eliminate or completely overshadow other influences on perception. For example, the chronic accessibility of some categories may cause them to affect recall independent of the presence or absence of cues of that category. The goal of the present work is to examine swings which may result from cues, not to test hypotheses about the more general accuracy or inaccuracy of person perception.

In this study, participants reviewed the college application materials of an Asian American female. Reviewers had either her gender category (female), her ethnic category (Asian American), or neither category cued. A common stereotype about Asian Americans is that they have superior quantitative skills compared to other

ethnic groups (Oyserman & Sakamoto, 1997; Shih et al., 1999). A common stereotype about women is that they have inferior quantitative skills compared to men (Shih et al., 1999). We hypothesized that reviewers would recall lower math SAT scores if the applicant's gender category was cued, compared to reviewers who had her ethnic category or neither category cued. We further hypothesized that reviewers would recall higher math SAT scores if the target's ethnic category was cued, compared to reviewers who had her gender category or neither category cued. Thus this study investigated:

(a) whether a positive stereotype about an ethnic group would affect reviewers' recall, and

(b) whether different category cues would result in very different recall of details about a single applicant by reviewers.

2. Method

The college application of a female, Asian American college-bound high school senior was reviewed by 109 participants (52 female and 57 male undergraduates). Participants were led to believe that they would be reviewing the actual materials of several college applicants and were told that they would be asked to make a series of assessments of each applicant. The participants then read the application materials of an Asian-American high-school senior, Emily Chen.

The application that participants read was a slightly modified version of the Common Application and included the applicant's math SAT score (670 out of a possible 800). The Common Application is the recommended standardized application form of 181 selective, independent colleges and universities, including the school attended by study participants. The application materials, which participants were led to believe were the actual materials of a recent college applicant, were written by an Asian American research assistant.

After finishing reading the application materials, participants were asked to recall several details about the applicant, including her math SAT score, under one of the three conditions:

(a) 'Female cue,' in which the applicant's gender category was cued;
(b) 'Asian American cue,' in which the applicant's ethnic category was cued;
(c) and 'Control' condition, in which neither category was cued.

All participants reviewed the same application materials, with the only differences being those of the experimental manipulation. Across conditions, the manipulation was one of emphasis, through cuing, rather than the presence or absence of information about the applicant's gender or ethnicity.

In the Female cue condition the gender category of the applicant was subtly cued. This was done in two ways. First, instead of appearing at the end of a line in which other information was solicited, the application section in which the applicant reported his or her sex was moved to the beginning of a line. Second, the set of

follow-up questions for reviewers in the Female cue condition was introduced with a paragraph including the sentence: "Please answer the following questions for the female high school student whose materials you just read."

In the Asian American cue condition the ethnic category of the applicant was subtly cued. This was done in two ways. First, the application section in which the applicant reported his or her ethnicity was set off in a box. Also, in addition to a question asking the applicant to voluntarily identify his or her ethnicity which appeared in all conditions, this application included two additional questions related to the applicant's ethnicity: "Is English your first language?" and "Were you born in the United States?" Second, the set of follow-up questions for reviewers in the Asian American cue condition was introduced with a paragraph including the sentence: "Please answer the following questions for the Asian American high school student whose materials you just read".

In the Control condition neither category was cued. The application section in which the applicant reported his or her sex was not moved to the beginning of a line. The application section in which the applicant reported his or her ethnicity was not set off in a box, nor were the two additional ethnicity-related questions included. The set of follow-up questions for reviewers in the Control condition was introduced with a paragraph including the sentence: "Please answer the following questions for the high school student whose materials you just read."

3. Results

Participants in each of the three conditions recalled lower math SAT performance for the applicant than had been presented. In the Control condition, for example, the condition in which neither category was cued, the score recalled was nine points below the actual score presented. Yet, as hypothesized, cuing different social categories of the applicant without introducing any new information led reviewers to stereotype the target in different ways, and to recall significantly different math SAT performance. An ANOVA revealed an effect of participant condition on math SAT score recalled, $F(2, 106) = 3.79$, $p = 0.02$, $\eta = 0.27$.

As hypothesized, reviewers for whom the applicant's gender category was cued recalled lower math SAT scores, relative to the reviewers for whom her ethnic category, or neither category, was cued. Reviewers for whom the ethnic category of the applicant was cued recalled higher math SAT scores, relative to the reviewers for whom her gender category, or neither category, was cued. A contrast analysis conducted to test this pattern of results, using lambda weights $-1, 0, +1$ for Female cue, Control, and Asian American cue, respectively, was significant: $t(106) = 2.74$, $p = 0.008$ (one tailed), $r = 0.26$ (see Table I and Figure 1).

Male and female reviewers responded similarly to category cues. T-tests revealed no sex differences within each of the three conditions. A t-test by sex for participants in the Control condition was not significant: $t(34) = 1.11$, $p = 0.27$ (two tailed). A t-test by sex for participants in the Female cue condition was not

Table I. Math SAT score recalled by condition

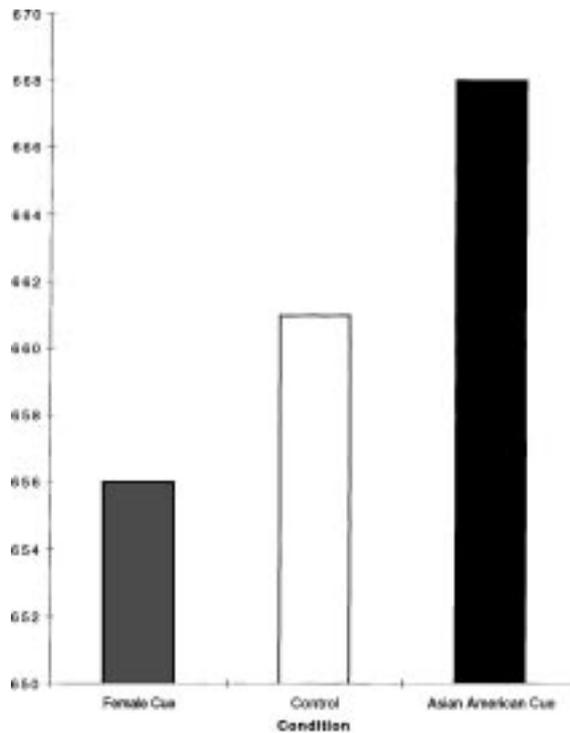| Participants (N = 109)	Female cue			Control			Asian American cue		
	X	SD	N	X	SD	N	X	SD	N
	656	22.5	38	661	16.5	36	668	16.2	35

Figure 1. Recall by Condition.

significant: $t(36) = 1.01$, $p = 0.32$. Finally, a *t*-test by sex for participants in the Asian American cue condition was not significant: $t(33) = 0.72$, $p = 0.48$.

Participant debriefings revealed that all participants believed the study framing, that they had reviewed and evaluated the actual application materials of a college applicant applying to colleges. Participant debriefings also revealed that all participants believed the exercise was one of applicant review and evaluation, and none of the participants surmised the presence of an experimental manipulation.

4. Discussion

The goal of this study was to investigate whether swings in recall occur in response to category cues. The results indicate that subtle category cues can influence application reviewers in different, and in this case opposite, directions when recalling details about an applicant, compared to reviewers for whom no cues were introduced.

While the focus of the present work is the investigation of swings in recall in response to category cues, it is interesting to note that in all conditions participants recalled a lower math SAT score for the applicant than had been presented. It is plausible that an implicit gender stereotype (Banaji & Greenwald, 1995) may be operating across conditions, depressing the scores recalled independent of the cues. A second plausible explanation is that gender may be a more chronically accessible category (Bruner, 1957; Taylor et al., 1978) than ethnicity. This might be true for gender and ethnicity in general, or alternatively might be true of Asian American ethnicity and female gender in particular. As a result, gender may be used as an organizing category in perception more often and faster than ethnicity in the context studied. In this case category cues of ethnicity or gender may have altered the relative salience of gender over ethnicity, but did not completely determine whether or not gender, and the negative stereotypes associated with gender in this context, are influential. Some empirical research has demonstrated that gender is a highly accessible category for perceivers and that perceivers may use gender to categorize targets more strongly than other social categories (van Knippenberg, van Twuyver, & Pepels, 1994). A third and final explanation for the fact that baseline recall is anchored below the actual score in all three conditions can be found in details about the target provided in the application materials beyond her membership in the two categories experimentally studied. For example, the applicant described her accomplishments in sports. Her identity as a student-athlete, 'a jock,' may account for why, wholly independent of the cues, recall was lower across conditions. Research has demonstrated that people hold negative academic stereotypes of student athletes (Burke, 1993).

While research on stereotyping has typically considered a single social category of a target, the present research indicates that depending on subtle category cues, recall may proceed in markedly different ways. And while research on gender and ethnic stereotypes has typically investigated only negative stereotypes, this research indicates that at times positive stereotypes about a group can influence recall in a magnitude similar to, albeit in the opposite direction from, negative stereotypes. These data raise important issues for social psychologists and for educational practitioners.

A rich body of theoretical and empirical research has demonstrated that people are often influenced by stereotypes when they lack information, time, mental resources, or motivation (e.g., when they are tired or mentally preoccupied, see Gilbert & Hixon, 1991; Pratto & Bargh, 1991). This study evidences that subtle category cues will influence which of several possible stereotypes a perceiver may

employ. This finding is consistent with the work of Macrae, Bodenhausen, and Milne (1995), who examined perceiver categorization of a Chinese woman, categorizable alternatively as 'Chinese' or as 'a woman.' These researchers found that both categories, Chinese and woman, are activated in parallel; perceivers identify the several competing categories to which the target belongs (Brewer, 1988; Fiske & Neuberg, 1990). But in later stages, both excitatory and inhibitory mechanisms operate in stereotype activation (Macrae, Bodenhausen, & Milne, 1995). The present research extends this important work by examining the role of category cues in determining which of several competing categorizations may be meaningful to a perceiver. Perhaps even more important, the present research extends the previous research by demonstrating that different categorizations of a target will affect not only categorization, but end-state cognition, in this case a reviewer's recall for admissions-relevant details about an applicant.

It is important to emphasize that in the present work no new information about the target was introduced across conditions. The differences in recall were simply the result of cuing one or another category, which applied to the target in all conditions. In a classic study, Darley and Gross (1983) presented two groups of participants with identical videotapes of a child taking an academic test, the only difference being the social class the researchers ascribed to the child in the videos. Participants led to believe that the child came from a high socioeconomic background rated her abilities as above grade level, whereas participants led to believe that the child came from a low socioeconomic background rated her abilities as below grade level (Darley & Gross, 1983). This work powerfully demonstrated that when a target is believed to belong to different social categories, the application of different stereotypes will lead to markedly different perceptions. The present work examines the effect of cuing one or another of two categories that always coexisted in a target. In contrast to Darley and Gross (1983), no different or new information about the target was introduced across conditions. Instead, subtle cues simply reminded the perceiver of something they already knew, that the target was female or that the target was Asian American. Simply cuing one or another category to which the target belongs is enough to significantly alter recall; no new or different information about the target need be introduced.

In addition to these contributions to our emerging theoretical understanding of multiple categories, stereotyping processes, and perceiver recall, the present findings raise important issues for educational practitioners. While we well acknowledge that an applicant's social category may lead to stereotyping by a perceiver, we are only beginning to appreciate when any given social category may come into play and the degree to which different categories may be salient to perceivers at different times and in different contexts, with markedly different effects. Consider, for example, a reviewer encountering an Asian American applicant either in person, for example in an admissions interview, or 'on paper,' through a written application. In person the applicant might wear perfume which cues her gender category, or she might speak with an accent which cues her ethnic category. On paper she might

have an Asian language name which cues her ethnic category, or she might discuss participating in a stereotypically female activity in one of her applications, which cues her gender category. Or it might instead be one of a reviewer's colleagues who, during a discussion of the candidate, cues one or another category with a seemingly innocuous remark. In response to these simple cues, which probably are not consciously noticed by the reviewer who already knows that she is Asian American and who already knows that she is female, resulting recall of details about the applicant may unfold very differently. In this study we examined recall of a detail about which there is an objective anchor. Swings in judgements about which there are no objective anchors, such as "how strong are her leadership skills?" may be even more susceptible to cues.

Finally, this study evidences that when cued, positive gender and ethnic stereotypes can at times influence recall in a magnitude similar to, albeit in an opposite direction from, negative stereotypes. To date, social psychologists, including social psychologists interested in education, have focused overwhelmingly on the negative effects of negative gender and ethnic stereotypes on perceivers and targets. The lack of research attention to positive stereotypes prevents the emergence of a more comprehensive understanding of how stereotypes affect individuals. Interestingly, in social interactions positive stereotypes may not be scrutinized or suppressed to the same degree as negative stereotypes, in part because they pose little threat to a target's positive social identity (Tajfel, 1978). For example, Biernat, Vescio, and Green (1996) found that sorority and fraternity members embraced positive stereotypes about their in-group. Since positive stereotypes may often go 'unchecked' they may, in some cases, be even greater sources of bias than negative stereotypes.

In the future, researchers should further investigate category cues and further investigate positive stereotypes to better understand their impact on application and admissions processes in particular, and social interactions more generally. It is likely that effects of category cues will be observed not just in formal settings but in the many interpersonal interactions that occur in educational institutions. It is also reasonable to speculate that category cues may have significantly different effects on members of different identity groups, for example on reviewers who share a gender and/or ethnic category with an applicant. Future research might also examine the effects of category cues introduced at different times, for example cues introduced at the time a reviewer encodes information about an applicant and cues introduced at the time a reviewer retrieves information about an applicant. Research in these veins will make important contributions not only to our understanding of social psychological dynamics in educational processes, but more generally to our understanding of the social psychological processes of stereotyping and recall.

Every day we interact with diverse others and bring to these interactions a host of social categories. Often one or another category may be cued, at times in very subtle ways. We find compelling evidence that category cues have marked effects on application reviewer recall, suggesting that category cues, positive stereotypes,

and more generally multiple categories must play a more central role in social psychological research, including research on the social psychology of educational processes.

Acknowledgements

Notes

[1] One can conceive of a fourth condition in which both gender and ethnicity are cued. This is an interesting case to consider, but one beyond the scope of the present study in which we investigate the effects of cuing one or another identity.

References

Allport, Gordon W. (1954). *The nature of prejudice.* Reading, MA: Addison Wesley.

Banaji, Mahzarin R. & Greenwald, Anthony G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology*, *68*, 181–198.

Bargh, John A., Bond, Ronald N., Lombardi, Wendy J., & Tota, Mary E. (1986). The additive nature of chronic and temporary sources of construct accessibility. *Journal of Personality and Social Psychology 50*, 869–878.

Biernat, Monica, Vescio, Theresa K., & Green, Michelle L. (1996). Selective self-stereotyping. *Journal of Personality and Social Psychology*, *71*(6), 1194–1209.

Brewer, Marilynn B. (1988). A dual process of impression formation. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Advances in social cognition* (Vol. 1). Hillsdale, NJ: Erlbaum, pp. 1–36.

Bruner, Jerome S. (1957). On perceptual readiness. *Psychological Review*, *64*, 123–152.

Burke, Kevin L. (1993). The negative stereotyping of student athletes. In Wyatt D. Kirk & Sarah V. Kirk (Eds.), *Student athletes: Shattering the myths and sharing the realities*. Alexandria, VA: American Counseling Association, pp. 93–98.

Darley, John M. & Gross, Paget, H. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, *44*(1), 20–33.

Deaux, Kay (1993). Reconstructing social identity. *Personality and Social Psychology Bulletin*, *9*, 4–12.

Devine, Patricia G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*, 5–18.

Duncan, Birt L. (1976). Differential social perception and attribution of intergroup violence: Testing the lower limits of stereotypes of Blacks. *Journal of Personality and Social Psychology*, *34*, 590–598.

Erber, Ralph & Fiske, Susan T. (1984). Outcome dependency and attention to inconsistent information. *Journal of Personality and Social Psychology*, *47*(4), 709–726.

Fiske, Susan T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, *38*, 889–906.

Fiske, Susan T. & Neuberg, S.L. (1990). A continuum of impression formation from category based to individuation processes: Influences of information and motivation on attention on interpretation. In Mark P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23). San Diego: Academic Press. pp. 1–74.

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

Frable, Deborrah E. (1993). Being and feeling unique: Statistical deviance and psychological marginality. *Journal of Personality*, *61*, 85–110.

Gilbert, Daniel T. & Hixon, J. Gregory. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology*, *60*, 509–517.

Hamilton, David L. (1981). *Cognitive processes in stereotyping and intergroup behavior.* Hillsdale, NJ: Erlbaum.

Hamilton, David L. & Rose, T.L. (1980). Illusory correlation and the maintenance of stereotypic beliefs. *Journal of Personality and Social Psychology*, *39*, 832–845.

Hamilton, David L. & Sherman, Jeffrey W. (1994). Stereotypes. In Robert S. Wyer, Jr. & Thomas K. Srull (Eds.), *Handbook of social cognition* (Vol. 2). Hillsdale, NJ: Erlbaum, pp. 1–68.

Hamilton, David L. & Trolier, Tina K. (1986). Stereotypes and stereotyping: An overview of the cognitive approach. In J.F. Dovidio & S.L. Gaertner (Eds.), *Prejudice, discrimination, and racism*. Orlando: Academic Press.

Hansen, Christine H. & Hansen, Ranald D. (1988). Finding the face in the crowd: An anger superiority effect. *Journal of Personality and Social Psychology*, *54*, 917–924.

Higgins, E. Tory & King, Gillian (1981). Accessibility of social constructs: Information-processing consequences of individual and contextual variables. In Nancy Cantor & John F. Kihlstom (Eds.), *Personality, cognition, and social interaction*. Hillsdale, NJ: Erlbaum, pp. 69–121.

Kihlstrom, John F. & Hastie, Reid (1997). Mental representations of persons and personality. In Robert Hogan, John A. Johnson, & Stephen R. Briggs (Eds.), *Handbook of personality psychology*. San Diego, CA: Academic Press, pp. 711–735.

Kunda, Ziva & Thagard, Paul (1996). Forming impressions from stereotypes, traits, and behaviors: A parallel-constraint-satisfaction theory. *Psychological Review*, *103*, 284–308.

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

McArthur, Leslie Z. (1981). What grabs you? The role of attention in impression formation and causal attribution. In E.T. Higgins, C.P. Herman, & Mark P. Zanna (Eds.), *Social cognition: The Ontario symposium* (Vol. 1). Hillsdale, NJ: Erlbaum, pp. 201–246.

McGuire, William J., McGuire, Claire V., Child, Pamela, & Fujioka, Terry (1978). Salience of ethnicity in the spontaneous self-concept as a function of one's ethnic distinctiveness in the social environment. *Journal of Personality and Social Psychology*, *36*, 511–520.

Oyserman, Daphna & Sakamoto, Izumi (1997). Being Asian American: Identity, cultural constructs, and stereotype perception. *Journal of Applied Behavioral Science*, *33*, 435–453.

Pendry, Louise F. & Macrae, C. Neil (1996). What the disinterested perceiver overlooks: Goal-directed social categorization. *Personality & Social Psychology Bulletin*, *22*, 249–256.

Pratto, Felicia & Bargh, John A. (1991). Stereotyping based on apparently individuating information. Trait and global components of sex stereotypes under attention overload. *Journal of Experimental Social Psychology*, *27*, 26–47.

Shih, Margaret, Pittinsky, Todd L., & Ambady, Nalini (1999). Stereotype susceptibility: Identity salience and shifts in quantitative performance. *Psychological Science*, *10*(1), 81–84.

Smith, Eliot R. & Zarate, Michael A. (1992). Exemplar-based model of social judgment. *Psychological Review*, *99*, 3–21.

Stangor, Charles, Lynch, Laure, Duan, Changming, & Glas, Beth (1992). Categorization of individu-
    als on the basis of multiple social features. *Journal of Personality and Social Psychology*, *62*,
    207–218.
Steele, Claude M. & Aronson, Joshua (1995). Stereotype threat and the intellectual test performance
    of African-Americans. *Journal of Personality and Social Psychology*, *69*, 797–811.
Tajfel, Henri (Ed.). (1978). *Introducing social psychology: An analysis of individual reaction and
    response*. Middlesex, England: Penguin Books.
Taylor, Shelley E. & Fiske, Susan T. (1978). Salience, attention, and attribution: Top of the head
    phenomena. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 11). New
    York: Academic Press, pp. 249–288.
Taylor, Shelley E., Fiske, Susan T., Etcoff, N.L., & Ruderman, A.J. (1978). Categorical and per-
    ceptual biases of memory and stereotyping. *Journal of Personality and Social Psychology*, *36*,
    778–793.
van Knippenberg, Ad, van Twuyver, Mariette, & Pepels, Jose (1994). Factors affecting social
    categorization processes in memory. *British Journal of Social Psychology*, *33*, 419–431.
Zarate, Michael A. & Smith, Eliot R. (1990). Person categorization and stereotyping. *Social
    Cognition*, *8*, 161–185.

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