

Reducing Prejudice: Lessons From Social-Cognitive Factors Underlying Perceiver Differences in Prejudice

Sheri R. Levy*

State University of New York at Stony Brook

This article describes research findings on individual differences in stereotyping and shows how these findings have been and can be further applied to prejudice reduction efforts. A notable strength of this “new” generation of individual difference work is its dynamic nature—that individual differences can be both stable and malleable. The first section of this article reviews work showing that both adults and children differ in social-cognitive factors related to stereotyping, namely the way they process social information and their endorsement of social ideologies. The second section describes intervention strategies that target these factors. In the final section, limitations and future directions of basic and applied research on individual differences and stereotyping are discussed.

Interest in individual differences in stereotyping and prejudice blossomed with the publication of Adorno, Frenkel-Brunswick, Levinson, and Sanford's (1950) classic exposition of the prejudiced personality type, *The Authoritarian Personality*. Researchers of prejudice subsequently have continued to explore personality differences (e.g., Altemeyer, 1981, 1994, 1998) as well as other types of perceiver differences that influence levels of stereotyping, including age (e.g., Aboud, 1988; Bigler & Liben, 1993; P. A. Katz & Zalk, 1978), gender (e.g., Swim, Aikin, Hall, & Hunter, 1995), information processing strategies (e.g., Kruglanski & Freund, 1983; Neuberg & Newsom, 1993; Schaller, Boyd, Yohannes, & O'Brien, 1995),

*Portions of this article were presented at the biennial meeting of the Society for Research in Child Development, Albuquerque, New Mexico, April 1999. I am grateful to Frances Aboud, Ozlem Ayduk, Collette Eccleston, and Antonio Freitas for their helpful comments on an earlier draft of this article.

Correspondence concerning this article should be addressed to Sheri R. Levy, Department of Psychology, State University of New York at Stony Brook, Stony Brook, NY 11794-2500 [e-mail: slevy@notes.cc.sunysb.edu].

ideological frameworks (e.g., I. Katz & Hass, 1988; Levy, Stroessner, & Dweck, 1998; Pratto, Sidanius, Stallworth, & Malle, 1994), and culture (e.g., Crandall & Martinez, 1996).

The very existence of individual difference research suggests that prejudice is not inevitable. The goal of this article is to describe some basic research findings on individual differences in stereotyping and to show how these findings have been and can be further applied to prejudice reduction efforts.

The article will focus primarily on social-cognitive factors such as information-processing strategies and ideological frameworks. Space constraints preclude an adequate discussion of all perceiver variables; moreover, new developments in research on social-cognitive factors bear important implications for prejudice reduction and thus warrant special attention. As will be seen, although perceiver differences in social-cognitive factors can reflect relatively stable individual differences, recent research suggests that they also can be quite malleable.

In the first part of this article, I will trace some key, basic research findings on individual differences and stereotyping among children and adults. In the second part, I will describe how social-cognitive factors that differentiate individuals from one another can be harnessed as components of interventions. I will conclude with some limitations and future directions of basic and applied work on individual differences and stereotyping.

Individual Differences in Stereotyping, Prejudice, and Discrimination: Social-Cognitive Factors

I begin with information processing differences by briefly reviewing perceiver differences in social-cognitive factors from a developmental perspective and linking these factors to work stemming from social psychological work with cognitively mature perceivers. Then I turn to perceiver differences in broader cognitive conceptions—ideological frameworks.

Information Processing Differences

According to the cognitive-developmental approach, originally articulated by Piaget (Piaget & Weil, 1951), children's social attitudes (e.g., about gender and race) are critically affected by their acquisition of cognitive skills. Over the past few decades, studies have documented age-related changes in children's social attitudes, showing a developmental decline in prejudice from early to middle childhood (e.g., Bigler & Liben, 1993; Doyle & Aboud, 1995; P. A. Katz & Zalk, 1978). Research also has demonstrated that these age-related changes indeed reflect the influence of specific cognitive skills, such as the ability to classify others on multiple dimensions (e.g., Bigler & Liben, 1992; 1993; P. A. Katz, Sohn, & Zalk, 1975), the ability to take on differing perspectives (e.g., Black-Gutman & Hickson, 1996;

Doyle & Aboud, 1995), the ability to perceive similarities between different groups (e.g., Black-Gutman & Hickson, 1996; Doyle & Aboud, 1995), and the ability to perceive differences within the same group (e.g., Black-Gutman & Hickson, 1996; Doyle & Aboud, 1995; P. A. Katz et al., 1975).

Although one would expect late adolescents such as college students to have attained relatively mature levels of the aforementioned cognitive “skills,” researchers have shown differences among college students in cognitive “variables” quite similar to those studied in the developmental literature. For example, several individual difference constructs are conceptually similar to the abilities to classify others on multiple dimensions and to reconcile differing perspectives, which most children acquire by age 9 or 10 (e.g., Bigler & Liben, 1993; Doyle & Aboud, 1995). These variables include attributional complexity (Fletcher, Danilovics, Fernandez, Peterson, & Reeder, 1986), need for cognition (Cacioppo & Petty, 1982), and need for simple cognitive structure (Neuberg & Newsom, 1993; Webster & Kruglanski, 1994). As another example, Phillips and Ziller’s (1997) universal orientation scale differentiates mature social perceivers in their perception of similarities among different people, an understanding children develop around age 8 (e.g., Black-Gutman & Hickson, 1996; Doyle & Aboud, 1995).

The work with mature social perceivers evolved from an emphasis on the study of motivated social cognition, and, accordingly, these social-cognitive factors have been characterized as “process-oriented” motivational variables. Rather than asking at what age individuals acquire these skills, these researchers have asked how information processing strategies may reflect perceivers’ needs. Despite approaching perceiver differences from a different vantage point, this line of work has shown, consistent with the developmental work, that these information processes contribute to different levels of stereotyping among mature social perceivers. That is, mature social perceivers who exhibit lower levels of stereotyping are high in their perception of overlap between different groups (e.g., Phillips & Ziller, 1997), high in attributional complexity (e.g., Levy et al., 1998; Schaller et al., 1995; also see Altemeyer, 1998), high in need for cognition (e.g., Schaller et al., 1995), and low in need for simple cognitive structure (e.g., Kruglanski & Freund, 1983; Levy et al., 1998; Neuberg & Newsom, 1993; Schaller et al., 1995).

In summary, cognitive skills that are acquired with age are also known to express themselves as individual differences among mature perceivers and influence levels of stereotyping. In other words, the same basic social-cognitive factors—processing information in complex ways, viewing a conceptual overlap between different groups, and seeing variability within groups—contribute to less stereotyping whether these mechanisms are referred to as *skills* in children or as *needs* among adults. This suggests that mature social perceivers draw differentially upon these skills and conceptions and that differential use of these skills or differential accessibility of such conceptions over time may account for stable differences among perceivers.

Lay Theories and Ideological Frameworks

Besides the specific social-cognitive factors just reviewed, people may also come to possess more general, overarching ways of interpreting social information—theories or ideological frameworks—that also affect the extent to which they stereotype. The theories people use in their everyday lives have been termed lay, implicit, naive, intuitive, and background theories because they provide an explanatory framework for our daily experiences though they lack the rigor of a scientific theory (e.g., Kelly, 1955). Such theories may be specific to a particular domain (e.g., beliefs about groups) or they may represent broad worldviews. In any case, these theories or ideological frameworks are seen as playing a pivotal role in social judgment and behavior.

In keeping with the previously mentioned research on specific social-cognitive factors, work on lay theories has its roots in both developmental and social psychological work. Piaget and Garcia (1983/1989) proposed that during development children come to possess conceptions of their world that contribute to variation in their social interpretations. In a similar vein, social psychologists (e.g., Kelly, 1955) proposed that people form theories about their world that help them predict and explain behavior.

In this section, I review several theories and ideologies, ones that are specific and not specific to judging groups, that greatly influence perception, judgments, and actions toward groups. As will be seen, these views may orient people toward particular information processes like the ones just reviewed, suggesting that targeting social-cognitive skills in interventions with children and adults may not be enough. Rather, ideologies also would need to be targeted.

It should be noted from the outset that some of the work that is reviewed below was not originally conceived of as ideologies or theories. I have recast the work in these terms for mainly one reason: When these individual differences are conceived of as ideologies that are socially learned and reinforced, the mechanism of change becomes more clear than if we think of these individual differences as deeply seated differences, describing different types of persons.

The authoritarian belief system. Working within a psychodynamic framework, Adorno et al. (1950) originally portrayed the authoritarian personality syndrome as reflecting an inadequate “ego,” which depended on defense mechanisms, namely the projection of anger toward “outgroups” rather than toward harsh, punitive parents. This early work was criticized for theoretical (the instable nature of psychoanalytic theory), conceptual (vague operationalization), and methodological (psychometric properties of the *F* scale) deficiencies. Adequately addressing these flaws, Altemeyer (1981) devised a reliable and valid bidirectional scale that narrowed the conception of authoritarianism into right-wing authoritarianism

(RWA), with three primary attitudinal factors: (a) conventionalism, a belief in social conventions seemingly endorsed by society and authorities, (b) authoritarian aggression, a belief in aggression toward social deviants, and (c) authoritarian submissiveness, a belief in submission to authorities within society. Altemeyer (1981, 1998) hypothesized that RWA takes form in adolescence as an outgrowth of limited social experiences such as having a small, tight circle of friends; lacking contact with individuals from racial minority groups; and being exposed to the conception of the world as a violent, dangerous place. In contrast, Altemeyer describes low RWAs as “experiencing—directly or vicariously—a lot of unfair treatment by authorities, who meet minorities, who have rewarding experiences with unconventional/forbidden behavior. . . .” (p. 137, 1994). Mounting evidence validates Altemeyer’s conceptualization of authoritarianism, and his RWA scale shows high test-retest reliability. For one, Altemeyer (1998) found direct support (students report that they adopted their parents’ views) and indirect support (correlations of .40 between students’ and parents’ RWA scores) for a social learning interpretation. In addition, high RWAs tend to favor conservative political parties, support traditional gender roles, be the most orthodox members of religious groups, and be self-righteous (see Altemeyer, 1998). Moreover, high RWAs have tended to be punitive to criminals, to deliver punishment in an obedience experiment, and to be prejudiced toward such a wide variety of groups that, in his writings, Altemeyer often refers to these individuals as “equal opportunity bigots” (Altemeyer, 1994, 1998).

From high RWAs’ rigid adherence to traditional conventions and authorities, it follows that they tend to use heuristic or stereotype-enhancing information processing strategies. That is, the higher people are in RWA, they report more personal need for structure ($r = .34$, see Altemeyer, 1998; Levy et al., 1998), less attributional complexity ($r = -.17$, see Altemeyer, 1998; Levy et al., 1998) and less need for cognition ($r = -.45$; Levy et al., 1998). Interestingly, high RWAs tend to be unaware of the fact that they hold more prejudiced attitudes than others, perhaps because of their restricted social circles or because they are unaware of how their ideology influences their attitudes. As will be borne out in later sections, such a lack of awareness suggests an avenue for prejudice reduction.

Social dominance orientation. Social dominance orientation is another general social-attitudinal outlook relevant to intergroup relations and oppression of social groups (Pratto et al., 1994; see Pratto, 1999, for a review). Growing out of social dominance theory, social dominance orientation (SDO) differentiates individuals according to their desire for hierarchical intergroup dynamics, namely for their ingroup to be superior to outgroups. With a focus on distinguishing ingroups and outgroups, such an ideology may limit people’s ability to see similarities between different groups and differences within the same group. Indeed, SDO is negatively correlated with attributional complexity ($r = -.19$; see Altemeyer,

1998), suggesting that high SDOs tend not to try to process information about others beyond readily apparent categorizations.

With their anti-egalitarian outlook, people high in SDO, relative to those low in SDO, tend to (a) more strongly subscribe to ideologies that legitimize the unequal distribution of social values (e.g., meritocracy, racism, sexism, nationalism, cultural elitism, and political-economic conservatism), (b) agree more with social discriminatory policies (death penalty, military programs), (c) disagree more with policies that promote equality (e.g., noblesse oblige, racial and sexual discrimination laws), and (d) be less altruistic and empathic to the struggles of outgroups. Despite sharing a relation with several beliefs (e.g., racism, punitiveness, political conservatism), RWA and SDO are weakly related to one another (Altemeyer, 1998; Pratto et al., 1994). One distinction is that whereas high SDOs try to create and maintain rule hierarchies, high RWAs try to submit to established authorities. Moreover, SDO is more concerned with the tension between ingroups and outgroups than about how ingroup members behave toward ingroup authorities and conventions (Pratto et al., 1994).

Given the different roles that men and women historically have held in many cultures, it is not surprising that men tend to be higher in SDO than are women (Pratto et al., 1994). Relative to low SDOs, high SDOs have been shown to be more competitive (a “dog eat dog” stereotypically male attribute) and appear to have played in and reveled in competitive sports (Altemeyer, 1998). Altemeyer (1998) additionally found that high-SDO students report that their views were modeled after their parents’ views (namely those of their fathers), and indeed there are moderately high correlations between students’ and fathers’ SDO scores. Accordingly, SDO is thought to be socially learned rather than evolving from pure self-interest. Although SDO is well represented within and across cultures and has been shown to be stable over several months, the finding that SDO is connected with roles people play (Pratto et al., 1994) suggests that role-playing nondominating roles, as elaborated later, may be a useful intervention tool.

Protestant work belief system versus egalitarianism-humanitarianism belief system. Other broad ideologies that are not specific to judging groups are the Protestant work belief system and the egalitarianism-humanitarianism belief system. These represent two core, opposing value orientations that have been shown to distinguish people’s level of stereotyping (I. Katz & Hass, 1988). The Protestant Work belief system refers to a form of individualism or meritocracy (including strong work and achievement ethic, conservatism, self-determination, and Puritanism) exemplified by the notion that “people can pull themselves up by their bootstraps.” Thus, a Protestant work ideology consists of a traditional and conventional component like RWA and SDO, but does not include a submissive-dominant component. The egalitarian-humanitarian orientation, by contrast, is based on social

justice principles and is conceptually and empirically opposite to, but broader in scope than, SDO (Pratto et al., 1994).

How would these ideologies influence information processes and elicit different levels of stereotyping and prejudice? One route may be through the different types of causal attributions each ideology promotes (e.g., Crandall & Martinez, 1996; Sears, 1988; Swim et al., 1995). A Protestant ethic with a focus on self-reliance and independence is likely to foster internal attributions for poor social and economic conditions of a disadvantaged group (e.g., group *X* lacks the motivation or discipline), and, in turn, lead to annoyance and even to anger, derogation of the group, and unwillingness to provide assistance. In contrast, an egalitarian belief system is likely to engender external attributions (e.g., group *X* faces discrimination and poor job prospects) and consequently to prompt sympathy, empathy, and a helping pattern to remedy injustice. These ideologies, then, may limit people's attributional complexity, leading to vastly different affective, cognitive, and behavioral responses to groups, depending on one's ideology.

As supporting evidence, I. Katz and Hass (1988) found that the egalitarian view is positively related to responses to their Pro-Black scale, which consists of items acknowledging discrimination of Blacks and the obstacles they face. In contrast, they found that the Protestant work view is associated with their Anti-Black scale, which assesses the extent to which people think Blacks are responsible for their disadvantaged social status. The Anti-Black and Pro-Black scales represent specific ideologies. The Anti-Black scale items are conceptually similar to the modern prejudice belief system. As opposed to old-fashioned blatant prejudice, the modern prejudice belief system embodies beliefs such as that discrimination no longer exists, that groups are unfairly pushing and pushing too hard for more economic and political power and antidiscrimination laws, and that minority groups do not deserve societal advantages (e.g., affirmative action; McConahay, 1986; Sears, 1988). In keeping with Katz and Hass's findings, Swim et al. (1995) showed that agreement with individualistic beliefs and disagreement with egalitarian beliefs were associated with higher modern sexism scores and higher modern racism scores.

In short, ideologies that emphasize self-reliance tend to foster ideologies of blame for a group's negative outcomes, generating negative affect toward the group. Prejudice in this way is reinforced by a clash between one's values and another group's perceived values and not out of self-interest.

I. Katz and Hass (1988) also have shown that high-prejudice persons can hold conflicting ideologies. High-prejudice persons can subscribe to egalitarian beliefs eliciting their sympathy for disadvantaged groups while at the same time holding to the Protestant work belief that disadvantaged groups are failing to employ opportunities to change their social standing. Such "ambivalent racism" (e.g., I. Katz & Hass, 1988; I. Katz, Wackenhut, & Hass, 1986) can be expressed in positive and negative response polarization. Examples of ambivalence response amplification

are a White perceiver giving a Black person extreme praise for success, and a White perceiver giving a Black person extreme criticism for failure on a given task (I. Katz et al., 1986).

Theories about traits. In turning to other broad ideological frameworks that are not specific to judging groups, it is interesting to note that although Piaget and Garcia did not link ideologies with stereotyping per se, they highlighted two contrasting conceptions that had a great impact on perceptions of social worlds: “static” and “dynamic” worldviews. Static versus dynamic conceptions of human nature recently have been shown to play a role in people’s level of stereotyping (Levy, 1998; Levy & Dweck, 1999; Levy, Freitas, & Dweck, 1999; Levy et al., 1998).

People holding a fixed (entity) theory of human attributes are likely to invest traits with importance and considerable meaning. Because stereotyping is essentially attributing a fixed set of traits to groups, then, one would expect people holding an entity theory to endorse stereotypes more strongly than people holding a dynamic (incremental) theory. In contrast, people whose theory highlights the more dynamic nature of human behavior (i.e., people with an incremental view) are likely to focus on a target’s mediating, dynamic psychological processes, such as needs, goals, and experiences (see Dweck, 1999, for a review of work linking entity and incremental theories to achievement motivation).

In initial studies with college students, Levy et al. (1998) showed that although people holding entity versus incremental theories were equally knowledgeable about societal stereotypes, those holding an entity theory more strongly endorsed both positive and negative stereotypes of ethnic and occupational groups. These differences held even when statistically controlling for more specific information processing variables (e.g., attributional complexity, need for cognition) and other ideological frameworks (e.g., RWA). Entity and incremental belief systems also have been shown to relate to behavior toward outgroup members (Levy et al., 1999). In one study, college students were led to believe that they were playing a prisoner’s dilemma game against either a law student or a control opponent. Consistent with the stereotype that lawyers are competitive, entity theorists, but not incremental theorists, played more competitively against the law student.

In subsequent studies, Levy and Dweck (1999) examined and found that less mature social perceivers hold entity and incremental theories that influence their level of stereotyping. In two studies, they provided late-elementary-school children with (fictitious) behavioral information about an unfamiliar group and examined their newly formed beliefs. Participants read about several valenced (positive or negative) and neutral behaviors performed by different students from one or more unfamiliar schools. Across the studies, children with an entity theory, compared with children with an incremental theory, (a) made more extreme trait ratings; (b) attributed group members’ behavior more to dispositional causes than to

dynamic, context-sensitive mediating processes such as environmental forces and a target's goals and needs; (c) exaggerated the within-group similarities and between-group differences on traits; (d) extended their negative impressions to a completely unknown group member; and (e) felt more negatively about and desired less contact with the school characterized by a few negative actions. Hence, theories about traits have been shown to relate to adults' and children's affect, cognitions, information processing strategies, and behavior toward familiar and unfamiliar groups.

Moreover, Hong, Chiu, Yeung, and Tong (1999) found that these theories correspond to stereotyping levels in Hong Kong. They showed that college students with an entity view were more likely than those with an incremental view to exaggerate trait differences between their own group (e.g., Hong Kongers) and an outgroup (e.g., mainland Chinese). This finding suggests that these theories and their relation to stereotyping are not specific to U.S. culture, but rather have wider generality.

In "Highlighting Stereotype-Attenuating Ideologies," below, we show that these theories are not fixed entities but are themselves malleable.

Summary

To summarize, stereotype-attenuating social-cognitive factors that are acquired with age have been shown to express themselves as individual differences in information processing strategies among mature perceivers. Among both less and more mature perceivers, these processes seem to be somewhat dictated by broader cognitive conceptions, whether directly or indirectly related to the perception of groups. Such ideological frameworks also have been shown to have an impact on prejudice, stereotyping, and discrimination.

Applying Lessons From Basic Research Findings to Prejudice Reduction Efforts

The findings reviewed thus far on individual differences have several implications for stereotype reduction efforts. First, the fact that social-cognitive processes continue even with maturation to differentiate individuals from one another in terms of level of stereotyping suggests that mature social perceivers draw differentially upon these skills and conceptions. In other words, mature social perceivers who use stereotype-enhancing information processes are unlikely to *lack* the skill. Rather, they more likely differ in their *use* of the stereotype-attenuating skills. Differential use of these skills over time may produce stable differences among perceivers. The bad news, so to speak, is that the role of social-cognitive factors in stereotyping is not limited to acquiring stereotype-attenuating skills; consequently, the *use* of these skills needs to be targeted in interventions with children and also

adults. The good news, as will be elaborated, is that laboratory and classroom interventions have already revealed that stereotype-attenuating processes can be called into use, both directly and indirectly.

Second, the finding that these information processing routes may be influenced by broader cognitive conceptions suggests that ideologies also need to be addressed. In that people can be unaware of their theories or the impact of their theories on their social judgment and behavior (e.g., Altemeyer, 1998), some form of insight training may be a plausible avenue of change. Furthermore, as social constructions, these ideologies may be deconstructed by being directly challenged or by making an alternative ideology, a stereotype-attenuating one, more accessible.

Thus, in the following sections, I describe how converging evidence from basic research on individual differences can be used to devise interventions that (a) promote stereotype-attenuating information processes, (b) provide perceivers with insight into the stereotype-enhancing impact of their ideologies, and (c) encourage the use of stereotype-attenuating ideologies.

Promoting Stereotype-Attenuating Information Processes

Several interventions have targeted stereotype-enhancing information processes as they are developing in children. As one example, P. A. Katz and Zalk (1978) trained children in the ability to perceive differences among members of the same group. They trained children who were just obtaining this ability (second graders) and children who likely had already obtained the ability (fifth graders). In a short-term intervention lasting approximately 15 min, they taught White children to differentiate among photographs of Black or outgroup children (experimental condition) or ingroup children (control condition). Two weeks later, Katz and Zalk found that both second and fifth graders in the experimental condition gave less prejudiced responses than those in the control condition. In addition, they showed that, relative to students in the control condition, fifth graders in the experimental condition pictorially represented the desire for less social distance between themselves and Black children, and second graders in the experimental condition were more likely to select a seat closer to the Black adult experimenter.

In another intervention, Bigler and Liben (1992) addressed kindergartners' through fifth graders' emerging ability to classify others on multiple dimensions. Each day for 1 week, children practiced sorting a set of pictures (men and women in stereotypical occupations) by both gender and occupation. Results indicated that children taught multiple methods of classification made fewer gender-stereotyped responses 1 week after training and better remembered counterstereotypic occupation information from stories read 1–2 weeks after training. In a more elaborate intervention, an 11-week school-based curriculum unit called "More Than Meets the Eye," Aboud and Fenwick (this issue) strengthened fifth graders' recently or

newly acquired skills in attending to within-group differences and between-group similarities, thereby reducing their prejudice levels.

Stereotype-attenuating information processes also can be activated among mature social perceivers. On the basis of research (Schaller et al., 1995) showing that people who prefer simple cognitive structures fail to engage in sufficiently sophisticated inference strategies and, in turn, tend to form inaccurate stereotypes, Schaller, Asp, Rosell, and Heim (1996) developed a complex reasoning intervention (also see Gardiner, 1972, for a complexity training program with high school students). During the 40 min of training, college students were provided with scenarios and then led through the logic of analysis of covariance (ANCOVA) to uncover a confounding variable in drawing an impression of various targets. The effectiveness of the statistical training was examined 1 week later, when participants completed a group inference task on which ANCOVA training would lead them to take into account situational factors in comparing the performance of two fictitious groups on an anagram task. Results indicated that participants who received training were less likely than those who did not receive training to form erroneous stereotypes of the novel groups.

In sum, stereotype-attenuating information processes can be induced among perceivers whose cognitive systems are still developing in sophistication and among socially mature perceivers who may more characteristically utilize stereotype-enhancing information processes.

Insight Techniques: Using Dissonance to Decrease Prejudice

How can stereotype-enhancing ideologies be challenged? Is providing ideological-inconsistent information sufficient? Convincing high RWAs that the world is not a dangerous place, as an example, may be particularly difficult unless the mass media deemphasize violent crime, which is unlikely (see Altemeyer, 1994). Can ideological-inconsistent life experiences successfully undermine ideologies? Increasing the number of positive intergroup relations high RWAs have, for example, might be effective (see Slavin and Cooper, this issue). The line of attack several researchers have explored is inducing belief change through psychological discomfort. According to dissonance theory (Festinger, 1957), when people's attention is drawn to a discrepancy between their beliefs and behavior, they experience psychological distress that prompts them to resolve the inconsistency by changing their belief or behavior. As described below, several researchers have tested variations of inducing compliance among people who are either high or low in prejudice.

Altemeyer (1994) tested a form of dissonance that targeted high-prejudice persons. He utilized a direct personal value confrontation procedure originally

developed and tested by Rokeach (1971). The procedure was carried out in two sessions. In session 1, college students were asked to rank 10 values in order of importance (sense of accomplishment, a world at peace, equality, family security, freedom, happiness, mature love, self-respect, true friendship, and wisdom). Students were additionally questioned about their sympathy for the protests and demonstrations of an Aboriginal group in their community. As Rokeach found in his studies, students ranked freedom higher than equality. This was true for both high and low RWAs, although high RWAs valued equality less than low RWAs. Not surprisingly, low RWAs were significantly more sympathetic to the Aboriginal's protests than were high RWAs. Six months later, when the semester was over, completed questionnaires from session 1 were returned to students. They were told that respondents who did not sympathize with Aboriginals ranked equality much lower than freedom, suggesting that nonsympathizers value personal freedom but not the freedom of others. Then, as a behavioral measure of the second session manipulation, 7 weeks later, students received a letter on university letterhead, presumably as part of a large anonymous pool, asking for their opinion on awarding substantial scholarships to four Aboriginals each year. The findings were impressive and encouraging. Of the high RWAs who were exposed to the session 2 value-confrontation manipulation, 58% favored the scholarship, compared to 25% of the high RWAs who were not exposed to session 2; low RWAs did not differ much in the two conditions. Unfortunately, results from a follow-up study were less encouraging; high-RWA experimentals did not differ significantly from high-RWA controls. Even so, in the follow-up study, Altemeyer found that high RWAs' support for Aboriginals was far less when the manipulation was not personal, that is, when they were not given a chance to see their original responses to realize that they were one of the persons who had a discrepancy in their responses. These results underscore the need for further development of insight training targeting high RWAs.

Dissonance paradigms also have been used with low-prejudice persons. According to Devine (1989), because of the early socialization and ubiquity of negative stereotypes in the United States, even low-prejudice persons have negative societal stereotypes accessible in memory. Thus, although low-prejudice persons may be committed to being egalitarian, their dormant knowledge of stereotypes can leak out when they do not have the time or cognitive capacity to consider their conscious nonprejudiced beliefs. From time to time, then, low-prejudice persons' unconscious prejudice responses can conflict with their conscious personal beliefs about equality. Monteith (1993) began testing whether such discrepancies can be a motivating force in reducing people's expression of prejudice. Specifically, the guilt felt by low-prejudice persons when their automatic, unconscious prejudiced responses are revealed may trigger a self-regulatory cycle of prejudice reduction that can be experimentally activated (see Devine & Monteith, 1993). Such a model has been empirically supported. Monteith (1993) induced college

students to experience a prejudice-related discrepancy (reject a law student because of his sexual orientation). After the inducement, relative to high-prejudice participants and low-prejudice controls, low-prejudice persons in the dissonance condition indeed felt the most negatively, were the most self-focused on the discrepancy experience, and spent the most time and effort trying to understand their attitude-behavior discrepancy. In another study, Monteith (1993) showed that inducing a discrepancy in one situation could lead to inhibiting stereotypic responses in a subsequent situation.

Taken together, results from the above studies suggest that dissonance is a viable prejudice reduction strategy, whether generating an unfamiliar discrepancy in perceivers' thinking (e.g., Altemeyer, 1994) or making perceivers' preexisting discrepancy concerns salient (e.g., Monteith, 1993). Evoking discrepancies, then, may benefit both high- and low-prejudice persons. Yet the type of discrepancy is experienced differently for people who have identified themselves as high or low in prejudice. This suggests that tailored interventions may be warranted (see "Tailored Interventions," below).

Highlighting Stereotype-Attenuating Ideologies

If ideologies are socially constructed, is it possible to reduce stereotyping by making accessible a familiar ideology, even one that runs counter to a chronically accessible ideology? In other words, can people try on different views of their world "for size," as Kelly (1955, p. 12) suggested?

Research on theories about the malleability of human attributes suggests that this is indeed possible. In one study, college students read a *Psychology Today*-type article supporting either an entity or incremental view. The entity and incremental versions of the article each cited evidence from several sources: case studies of individuals, longitudinal studies conducted over several decades, and large-scale intervention programs. After distractor measures, participants were asked, as part of another study, to evaluate occupational groups (e.g., lawyers, doctors) and ethnic groups (African Americans, Asians, and Latinos) on a number of attributes. Analyses revealed that, relative to those given a temporary entity view, participants given an incremental theory were more likely to believe that traits could change and agreed significantly less with stereotypes (Levy et al., 1998).

Entity and incremental theories also were successfully manipulated in an experiment exploring the impact of altering fifth graders' theories on newly formed beliefs about a novel school. During a 10-min presentation, children were told that psychologists have been debating for a long time whether personality can change and have conducted many studies on the topic; in the end, whatever kind of study scientists have done, they have come to the same conclusion: People can [can't] really change their personalities. (Children were extensively debriefed.) Children who were temporarily led to adopt the incremental view rather than the

entity view made weaker trait ratings, more dynamic attributions, and more neutral evaluations and were more willing to befriend children from the school characterized by a few negative behaviors. In sum, these results suggest that the incremental theory can be situationally induced and can attenuate stereotyping.

Work from other laboratories also suggests that people can try conflicting ideologies on for size. Pratto, Tatar, and Conway-Lanz (1999) have shown that people's beliefs about the allocation of social resources can be altered, thus eliminating differences between high and low SDOs. Specifically, Pratto et al. asked college students to pretend to be loan officers in a bank and to render decisions on pairs of loan applications on the basis of either who was the most creditworthy or who most would help the community. After they made two such decisions, in a second task they were asked to stop role playing and resolve three more scenarios. Results indicated that participants' choices on the second task were more consistent with the decision-making strategy that was primed in the first task than with SDO. This finding suggests that people can be induced to take on roles and stereotype-attenuating ideologies.

Despite the aforementioned encouraging results on highlighting stereotype-attenuating ideologies, several crucial remaining questions are: Can people change their habitual use of an ideological framework? What functions do these ideologies serve, and can those functions be served by other means? How will social influences hinder or assist the likelihood of ideological change? How do social-cognitive skills and ideologies shape one another?

Summary

To summarize intervention strategies evolving from basic research on individual differences, several programs and laboratory manipulations already indicate that social-cognitive factors underlying individual differences in stereotyping can be altered to reduce stereotyping and prejudice. This includes targeting specific processes (e.g., complexity of reasoning) and the broader cognitive frameworks that drive and maintain some of these processes. The mechanism through which many of these interventions seemed to work was by making a known conception or information processing strategy accessible. Because early interventions are not always possible (albeit ideal), it is encouraging that the interventions were effective among mature social perceivers, who likely have more entrenched ideological and social information preferences. A notable strength of many of the strategies reviewed is that they were fairly simple and brief and yet produced a discernible change.

Future Directions

In this section, I turn to some remaining issues for applying basic research findings on individual differences to prejudice reduction programs. First, I address areas for future basic research and then for applied work on this topic.

Basic Research on Individual Difference Variables

Interrelations among individual difference variables. To gain a fuller understanding of the relevance of individual difference variables for prejudice reduction interventions, more basic research is needed that explores the interrelations among such variables in predicting prejudice. Some researchers have already begun this venture (e.g., Altemeyer, 1998; Levy et al., 1998; Pratto et al., 1994; Swim et al., 1995). For example, Altemeyer (1998) compared RWA to SDO as well as to information processing variables (need for structure, and attributional complexity). Altemeyer found that RWA and SDO, which are basically uncorrelated, together accounted for over 50% of the variance in level of prejudice, suggesting that these ideologies are critical targets for interventions.

In selecting variables to compare and contrast in future studies, it will be important for researchers to cross invisible boundaries between areas of psychology (e.g., developmental and social) and between disciplines (e.g., psychology and philosophy). As one example, more research is needed that explores the link between social-cognitive skills and ideological differences in children's expression of prejudice. There are several possibilities: Belief systems may represent stable individual differences during childhood and adulthood; ideologies may develop before social-cognitive skills; belief systems may be transformed and elaborated with social-cognitive development; or belief systems and cognitive skills may have a combined effect on stereotyping levels.

Additionally, more research is needed that examines individual differences among groups other than Whites to assess whether the same basic pattern of findings emerges regardless of which group is the ingroup versus the outgroup (this is especially true in the United States). There may indeed be unique relations between prejudiced attitudes and ideologies among different groups. Furthermore, researchers need to examine adult populations besides college samples, because college students may not represent the full spectrum of high- to low-prejudice persons, and the constellation of attitudes and beliefs thus far studied may be unique to them. On a final note, individual differences need to be compared not only to one another, but also to competing explanations of prejudice.

Cultural origins and functions of individual differences. Future basic research also needs to address the universality of perceiver variables, so that we can better understand which variables' predictions are specific to certain outgroups and which ones' predictions are more generalizable. Different kinds of prejudice may require different kinds of interventions.

First, can variables predict different types of prejudice within a particular culture or environment? Some perceiver variables have been shown to be quite powerful predictors of prejudice, having generalized effects across stereotyping domains in the same study (e.g., Altemeyer, 1998; Levy, 1998; also see Powlishta, Serbin,

Doyle, & White, 1994). For example, RWA (Altemeyer, 1998), SDO (Pratto et al., 1994), theories about traits (Levy, 1998), and Protestant work versus egalitarian belief systems (Swim et al., 1995) have been shown to influence both racial and gender stereotyping. Yet, beliefs may be domain specific; people could be racist and sexist, but not subscribe to religious and age stereotypes. When we do not have a clear handle on the relations among different kinds of prejudice, we run the risk of decreasing prejudice toward one group and inadvertently increasing prejudice toward another group. Until the relations between types of prejudice are sorted out, one suggestion for interventions is to make explicit that a particular kind of reasoning applies only to certain groups.

Second, does a similar pattern of individual differences exist in different cultures or social environments? Different cultures or environments may foster different belief systems. For instance, cross-cultural work has demonstrated that some variables such as RWA and SDO are not culturally bound. On the other hand, some ideologies may be specific to particular cultures (Crandall & Martinez, 1996) or more dominant in certain cultures. Cross-cultural work, then, can reveal whether ideologies stem from universal social structure or from the legacy of cultural beliefs. In this way, cross-cultural work can indicate when and how some belief systems are more adaptive than others in a given culture or environment.

This takes us to the issue of the functionality of ideologies. An important issue only touched upon in this article is the motivational component of information processing strategies and ideologies. As previously mentioned, some of the individual difference process variables are thought to serve particular needs (e.g., need for structure, need for cognition). Although ideologies need not be self-serving (see Sears & Funk, 1991), they also can serve certain functions. They may help simplify one's world and provide a sense of social understanding. By investigating adult populations other than college students, we also may see how certain ideologies are more advantageous to certain groups. An important task, then, for future research is not just to highlight the conception or strategy that promotes less stereotyping, but also to identify what function it serves (while ideally finding an alternative route or ideology to satisfy that need). This issue is revisited in the next section, "Tailored Interventions."

Applied Work on Individual Difference Variables

Tailored interventions. So far, I have described how social-cognitive factors that differentiate individuals from one another can be incorporated as components of omnibus interventions. Another route to change is to utilize converging basic research findings to devise interventions tailored toward people's differences. The merit of tailored interventions has been spelled out by the functional approach to attitudes (e.g., Herek, 1987), which explores the functions served by attitudes and how persuasive messages that are matched to important personal motivations are

more influential than are nonmatched messages (e.g., Clary, Snyder, Ridge, & Miene, 1994). Evidence already suggests that interventions fitted to specific perceiver differences could be a successful prejudice reduction tool. In a laboratory experiment, Fiske and von Hendy (1992) found that college students engaged in less stereotyping (i.e., processed more individuating information) when they were exposed to messages tailored toward their self-monitoring styles. Hence, as basic research helps illuminate specific functions served by particular information processing strategies and ideologies, applied work can seek to devise tailored components of interventions.

Elaborating intervention strategies. One of the critical issues in translating basic research on individual differences to applied work is how to make the short-term benefits of intervention strategies more long lasting. From the interventions reviewed, it was unclear whether the effects of the intervention were transitory or more enduring on prejudice. Many of the interventions reviewed here were relatively brief, mostly done in one session (15–40 min long). Thus, basic researchers will need to develop strategies to elaborate their interventions into curriculum units, workshops, or minicourses at schools. An excellent strategy could be collaborating with applied researchers or educators. Aboud and Fenwick's (this issue) 11-week curriculum unit that addresses social information processing strategies, for example, was developed by a team of educators and psychologists and conducted by classroom teachers under the supervision of Aboud and her colleagues.

As interventions are elaborated, one might consider the interplay between persons and their environments, including a consideration of proximal and distal factors and the interactions among them. Similar or different messages may be reinforced in the home, at work, in school, in the community, and by the mass media. The use of stereotype-attenuating processes, then, may be more accessible in some environments or in some relationships. The individual difference interventions reviewed are best thought of as one component among the many that are needed to combat prejudice. Prejudice is multifaceted, and prejudice reduction is a life course task; thus, the more that is known about intervening factors, the more likely prejudice can be reduced among high-prejudice persons and kept low among low-prejudice persons.

It is also important to consider not only the factors influencing prejudice levels of the perceiver but also how interventions influence targets of prejudice. A better understanding of how interventions may have inadvertent negative effects on members of stigmatized groups is necessary (for reviews of the perspective of the targets of prejudice, see Swim & Stangor, 1998).

To conclude this section, several areas of future work have been identified. A key aspect of translating basic research into interventions will be maintaining a two-sided communication line—that researchers step in and out of their laboratories and continually allow each environment's unique advantages and disadvantages inform the other.

Conclusion

A strength of much of the individual difference variables reviewed here is that they are not specific to stereotyping. As two examples, the need for simple cognitive structure and theories about traits have also been shown to play a role in self- and person perception (e.g., Webster & Kruglanski, 1994; Levy & Dweck, 1998). The breadth of these variables suggests two key things. First, interventions aimed at attacking the processing strategies and ideologies that contribute to greater levels of prejudice may have an added benefit of helping people become more open-minded about themselves and individual others. Second, targeting broad ideologies and information processing strategies may represent a particularly compelling approach to reducing stereotyping given that interventions aimed at persuading individuals that stereotypes are inaccurate on a trait-by-trait, group-by-group basis have met with limited success with both children (for a review, see P. A. Katz, 1986) and adults (for a review, see Hewstone, 1996).

Despite these strengths, there is a stigma associated with individual difference research dating back to the 1950s and 1960s, when the work on the authoritarian personality was shown to have a number of theoretical and methodological shortcomings. One unfortunate fate of many individual difference variables is that they are used simply as “control variables”—variables that help account for unexplained variance in respondents’ perceptions and judgments. Another unfortunate outcome of the original work on personality differences is that individual differences are often assumed to represent stable, dispositional differences.

As reviewed in this article, much has changed in the theorizing, methodology, and type of individual differences studied. One of the most exciting aspects of this new generation of individual difference work is its emphasis on the dynamic nature of individual differences—that they can be stable, but also malleable. In this way, high-prejudice persons no longer appear to be different types of persons than low-prejudice persons are. Our task ahead, then, is to try to move people along the continuum toward greater social tolerance, equality, and harmony.

References

- About, F. E. (1988). *Children and prejudice*. New York: Basil Blackwell.
- Adorno, T. W., Frenkel-Brunswick, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality*. New York: Harper.
- Altemeyer, B. (1981). *Right-wing authoritarianism*. Winnipeg, Manitoba, Canada: University of Manitoba Press.
- Altemeyer, B. (1994). Reducing prejudice in right-wing authoritarians. In M. P. Zanna and J. M. Olson (Eds.), *The psychology of prejudice: The Ontario symposium* (Vol. 7, pp. 131–148). Hillsdale, NJ: Lawrence Erlbaum.
- Altemeyer, B. (1998). The other “authoritarian personality.” *Advances in Experimental Social Psychology*, 30, 47–92

- Bigler, R. S., & Liben, L. S. (1992). Cognitive mechanisms in children's gender stereotyping: Theoretical and educational implications of a cognitive-based intervention. *Child Development, 63*, 1351–1363.
- Bigler, R. S., & Liben, L. S. (1993). A cognitive-developmental approach to racial stereotyping and reconstructive memory in Euro-American children. *Child Development, 64*, 1507–1518.
- Black-Gutman, D., & Hickson, F. (1996). The relation between racial attitudes and social-cognitive development in children: An Australian study. *Developmental Psychology, 32*, 448–456.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42*, 116–131.
- Clary, E. G., Snyder, M., Ridge, R. D., & Miene, P. K. (1994). Matching messages to motives in persuasion: A functional approach to promoting volunteerism. *Journal of Applied Social Psychology, 24*, 1129–1149.
- Crandall, C. S., & Martinez, R. (1996). Culture, ideology, and antifat attitudes. *Personality and Social Psychology Bulletin, 22*, 1165–1176.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5–18.
- Devine, P. G., & Monteith, M. J. (1993). The role of discrepancy-associated affect in prejudice reduction. In D. E. Mackie and D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 317–344). San Diego, CA: Academic Press.
- Doyle, A. B., & Aboud, F. E. (1995). A longitudinal study of White children racial prejudice as a social-cognitive development. *Merrill-Palmer Quarterly, 41*(2), 209–228.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fiske, S. T., & von Hentdy, H. M. (1992). Personality feedback and situational norms can control stereotyping processes. *Journal of Personality & Social Psychology, 62*, 577–596.
- Fletcher, G. J. O., Danilovics, P., Fernandez, G., Peterson, D., & Reeder, G. D. (1986). Attributional complexity: An individual differences measure. *Journal of Personality and Social Psychology, 51*, 875–884.
- Gardiner, G. S. (1972). Complexity training and prejudice reduction. *Journal of Applied Social Psychology, 2*, 326–342.
- Herek, G. M. (1987). Can functions be measured? A new perspective on the functional approach to attitudes. *Social Psychology Quarterly, 50*, 285–303.
- Hewstone, M. (1996). Contact and categorization: Social psychological interventions to change intergroup relations. In C. N. Macrae, C. Stangor, & M. Hewstone (Eds.), *Stereotype and stereotyping* (pp. 323–368). New York: Guilford.
- Hong, Y. Y., Chiu, C. Y., Yeung, G., & Tong, Y. Y. (1999). Social comparison during the political transition: Interaction of entity versus incremental beliefs and social identities. *Journal of Intercultural Relations, 23*, 257–279.
- Katz, I., & Hass, R. G. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology, 55*, 893–905.
- Katz, I., Wackenhut, J., & Hass, R. G. (1986). Racial ambivalence, value duality, and behavior. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 35–59). Orlando, FL: Academic Press.
- Katz, P. A. (1986). Modification of children's gender-stereotyped behavior: General issues and research considerations. *Sex Roles, 14*, 591–601.
- Katz, P. A., Sohn, M., & Zalk, S. R. (1975). Perceptual concomitant of racial attitudes in urban grade-school children. *Developmental Psychology, 11*, 135–144.
- Katz, P. A., & Zalk, S. R. (1978). Modification of children's racial attitudes. *Developmental Psychology, 14*, 447–461.
- Kelly, G. A. (1955). *The psychology of personal constructs*. New York: Norton.
- Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay inferences: Effects of impression primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology, 19*, 448–468.

- Levy, S. R. (1998). *The impact of children's static vs. dynamic conceptions of people on their intergroup attitudes*. Unpublished doctoral dissertation, Columbia University, New York, NY.
- Levy, S. R., & Dweck, C. S. (1998). Trait- versus process-focused social judgment. *Social Cognition, 16*, 151–172.
- Levy, S. R., & Dweck, C. S. (1999). The impact of children's static vs. dynamic conceptions of people on stereotype formation. *Child Development, 70*, 1163–1180.
- Levy, S. R., Freitas, A. L., & Dweck, C. S. (1999). *Theories about traits as predictors of stereotype application*. Unpublished manuscript.
- Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74*, 1421–1436.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91–125). Orlando, FL: Academic Press.
- Monteith, M. J. (1993). Self-regulation of prejudiced responses: Implications for progress in prejudice-reduction efforts. *Journal of Personality & Social Psychology, 65*, 469–485.
- Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simple structure. *Journal of Personality and Social Psychology, 65*, 113–131.
- Phillips, S. T., & Ziller, R. C. (1997). Toward a theory and measure of the nature of nonprejudice. *Journal of Personality and Social Psychology, 72*, 420–434.
- Piaget, J., & Garcia, R. (1989). *Psychogenesis and the history of the sciences* (H. Fielder, Trans.). Paris: Flammarion. (Original work published 1983)
- Piaget, J., & Weil, A. M. (1951). The development in children of the idea of the homeland and of relations to other countries. *International Social Science Journal, 3*, 561–578.
- Powlishta, K. K., Serbin, L. A., Doyle, A., & White, D. (1994). Gender, ethnic, and body type biases: The generality of prejudice in childhood. *Developmental Psychology, 30*, 526–536.
- Pratto, F. (1999). The puzzle of continuing group inequality: Piecing together psychological, social, and cultural forces in social dominance theory. *Advances in Experimental Social Psychology, 31*, 191–263.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67*, 741–763.
- Pratto, F., Tatar, D. G., & Conway-Lanz, S. (1999). Who gets what and why: Determinants of social allocations. *Political Psychology, 20*, 127–150.
- Rokeach, M. (1971). Long-range modification of values, attitudes, and behavior. *American Psychologist, 2*, 283–292.
- Schaller, M., Asp, C., Rosell, M. C., & Heim, S. J. (1996). Training in statistical reasoning inhibits the formation of erroneous group stereotypes. *Personality and Social Psychology Bulletin, 22*, 829–844.
- Schaller, M., Boyd, C., Yohannes, J., & O'Brien, M. (1995). The prejudiced personality revisited: Personal need for structure and formation of erroneous group stereotypes. *Journal of Personality and Social Psychology, 68*, 544–555.
- Sears, D. O. (1988). Symbolic racism. In P. A. Katz & D. A. Taylor (Eds.), *Eliminating racism: Profiles in controversy* (pp. 53–84). New York: Plenum Press.
- Sears, D. O., & Funk, C. L. (1991). The role of self-interest in social and political attitudes. *Advances in Experimental Social Psychology, 24*, 1–91.
- Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology, 68*, 199–214
- Swim, J. K., & Stangor, C. (1998). *Prejudice: The target's perspective*. San Diego, CA: Academic Press.
- Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology, 67*, 1049–1062.

SHERI R. LEVY is an Assistant Professor of Psychology at the State University of New York at Stony Brook. She earned her BA in Psychology from the University

of Michigan and a PhD in Psychology from Columbia University in 1998, for which she received the 1999 SPSSI Dissertation Award. Her research interests include lay theories, determinants of prejudice during childhood and adulthood, prejudice reduction, intragroup and intergroup relations, volunteerism, and the role of children's social concerns on their reports of stereotype-based beliefs.