Intergroup Fluency: How Processing Experiences Shape Intergroup Cognition and Communication

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Social psychologists have long known that how people perceive, evaluate, and interpret the actions of others is highly dependent upon their immediate surroundings. Within the field of intergroup relations, this perspective has been the cornerstone of research aimed at understanding how structured forms of intergroup contact can lead to more positive intergroup attitudes and relations (Allport, 1954; Pettigrew & Tropp, 2006). However, even seemingly inconsequential aspects of the environment (e.g., weather, lighting, background music, prior moods) can have a substantial effect on social perception. In recent decades, emerging theoretical perspectives on social cognition (e.g., situated and embodied cognition approaches, Smith & Semin, 2004, 2007; feelings-as-information theory, Schwarz & Clore, 2007; affect infusion, Forgas, 1995, 2008, this volume; assimilative/accomodative processing, Bless & Fiedler, 2006; Koch & Forgas, this volume) have begun to highlight the role that physical environments play in not only shaping the *content* of cognition, but also the experiential *process* of thinking. *Meta*cognitive experiences, such as the subjective ease or difficulty processing information, have been shown to have a potent effect on judgments across a wide variety of domains, from stock choices to furniture preferences (for recent reviews, see Alter & Oppenheimer, 2009; Schwarz, 2004; and Schwarz & Clore, 2007). Yet, despite growing evidence of its influence, the impact of metacognition on intergroup judgments has remained largely unexplored.

In the present chapter, we first briefly review past research on the role of processing experiences in social cognition, and then highlight new findings that suggest systematic effects of processing experiences on intergroup perception and communication. We conclude by

considering theoretical and practical benefits of extending an experiential approach to the study

of intergroup relations, more generally, and outline several avenues for future exploration.

From Content to Experience: The Power of Experiential Cues in Social Cognition

Research on stereotyping and prejudice has traditionally focused on *what* comes to mind

(evaluative and semantic associations) when people think about or interact with a member of

their own or another social group (see Correll, Judd, Park, & Wittenbrink, 2010). These

approaches typically focus on stable individual differences not only in what people think about

other groups, including explicit and implicit attitudes, but also the content of group stereotypes

(Blair, 2002; Fiske, Cuddy, Glick, & Xu, 2002). Methodological techniques for assessing

intergroup attitudes and stereotypes have similarly focused on the measurement of presumably

stable knowledge structures (or schemas) - the affective and semantic representations associated

with social categories (Correll et al., 2010; Ferguson & Bargh, 2007).

Although these "content-based" approaches have been fruitful in illuminating systematic

sources of bias, they often neglect peripheral features in the environment that may exert

additional influences on perception. Indeed, contrary to early theoretical perspectives

emphasizing the stability of implicit attitudes (e.g., Wilson, Lindsey, & Schooler, 2000), bias, as

assessed by both explicit (self-report) and implicit measures, appears to be highly context-

sensitive. A growing literature has now documented the sensitivity of implicit prejudice

measures to a wide variety of affective states (Bodenhausen, Mussweiler, Gabriel, & Moreno,

2001), contextual variables (e.g., darkened rooms, social roles; Schaller, Park, & Mueller, 2003;

for a review, see Gawronski & Sritharan, 2010) as well as to attitude change interventions (e.g.,

classical conditioning; Olson & Fazio, 2006).

As Schwarz (2010) recently noted, there is more to thinking than the mere content of one's thoughts. Every cognitive process is accompanied by a host of subjective experiences, from affective reactions and bodily sensations to *meta*cognitive feelings of ease or difficulty associated with any given task. Seemingly irrelevant (or "incidental" in Bodenhausen's [1993] terminology) emotional and mood states influence people's judgments and actions, often outside of awareness (see chapters by Forgas and Koch & Forgas, this volume). For instance, Bodenhausen (1993) induced happiness, sadness, or anger and had participants read about a physical assault by a student with either a Hispanic surname or without a Hispanic surname. Participants in a positive or negative emotional state (states hypothesized to constrain processing motivation) judged the defendant in stereotypic terms and were more likely to find the defendant guilty. DeSteno et al. (2004) showed similar effects of incidental emotion on implicit evaluations. When made angry (versus a neutral or a sad emotional state) in an ostensibly unrelated task, participants in their study showed more negative automatic attitudes toward a laboratory-created outgroup versus ingroup.

Other types of feelings also determine people's responses to others and to elements of their environments. Situated and embodied cognition perspectives (for reviews, see Smith & Semin, 2004, 2007) have emphasized the role of bodily states and sensorimotor systems in human cognition and the emergence of social cognition as the dynamic outcome of the interaction between perceivers and their immediate physical environments. Consistent with these perspectives, Proprioceptive feedback from arm flexion and extension (bodily movements associated with approach and avoidance, respectively; Kawakami, Phills, Steele, & Dovidio, 2007) and induced facial expressions (Ito, Chaio, Devine, Lorig, & Cacioppo, 2006) have also been shown to influence social judgments

In addition to affective and proprioceptive cues, the feelings-as-information approach (Schwarz, 1990; Schwarz & Clore, 2007) has identified the role of experiential information associated with cognitive operations (e.g., how easily information can be retrieved from memory or new information can be processed) and its impact on social perception. In a now classic demonstration of the influence of processing experiences on judgments, Schwarz et al. (1991) asked participants to generate either 6 (an easy task) or 12 (a hard task) examples of either their own assertive or unassertive behavior and were then asked to rate their assertiveness. In contrast to what a purely content-based model would predict, participants who recalled many examples of assertiveness rated themselves as *less* assertive than those who recalled fewer examples of assertiveness. These *meta*cognitive experiences, such as the ease of recall, have been shown to have a potent effect on judgments across a wide variety of domains, from stock preferences to judgments of truth, familiarity, and risk (for recent reviews, see Alter & Oppenheimer, 2009; Schwarz, 2004; and Schwarz & Clore, 2007).

Conceptually, *affective experiences* (valenced experiences such as emotions and moods; Clore & Huntsinger, 2007) can be distinguished from *cognitive experiences* (processing experiences generated by information retrieval and integration, including the ease or difficulty of recall, thought-generation, or the ease with which new information can be processed; for a more extensive treatment of this distinction, see Schwarz & Clore, 2007, and Greifeneder, Bless, & Pham, 2011). Empirically, whereas affective experiences may often have a direct influence on judgments (Greinfeneder et al., 2010), the interpretation and consequences of cognitive experiences depend upon a wide range of theories of mental processes that participants apply (e.g., that ease indicates frequency, familiarity, safety, truth, etc.; see Schwarz & Clore, 2007).

Despite the ubiquity of metacognitive experiences (indeed, every mental or physical task can be described along a continuum from effortless to effortful) and their remarkably consistent effects across a range of instantiations (Alter & Oppenheimer, 2009), their role in intergroup perception and communication has remained largely unexplored. In the following section, we present an initial framework for examining the impact of processing experiences on intergroup judgments, considering both individual and situational features that may impact processing demands, and report the results of a series of studies testing several components of this model.

A Fluency Approach to Intergroup Social Cognition and Communication

Processing fluency, the subjective ease or difficulty of processing information, has been shown to powerfully influence judgments independent of the content that accompanies the experience (Schwarz et al., 1991). Any mental task can be described along a continuum from effortless to highly effortful which produces a corresponding *meta*cognitive experience that ranges from highly fluent to highly disfluent. Researchers have manipulated processing fluency using a wide range of experimental methods, including varying visual and audio clarity, frequency and duration of exposure, and ease of word pronunciation, all producing remarkably similar effects on judgments. Across 18 instantiations, Alter and Oppenheimer (2009) found that whereas the experience of fluency when processing information tends to promote a sense of safety, familiarity, liking, and truth, the experience of disfluency promotes a sense of psychological distance, deception, and risk.

A primary route through which fluency has been proposed to influence judgments is through the *naïve theories* (Schwarz, 2004), or lens of ready-made attributions, that individuals bring to a given judgment context. For this reason, fluency effects are posited to be highly context-dependent. In one demonstration, Briñol, Petty, and Tormala (2006) had participants

read a passage that primed either positive or negative associations with fluency (as indicating intelligence or a lack of intelligence of the reader) and then evaluate a new exam policy written in either easy or difficult-to-read font. Consistent with a naïve theory account of fluency effects, the researchers found that the same fluency cue produced divergent effects on judgments depending upon the available theory (in this case, that fluency reflects either an underlying positive or negative attribute). Fluency has also been shown to spontaneously elicit a positive affective state, as captured by psychophysiological measures, which itself can influence judgments ("hedonic marking"; see Winkielman, Schwarz, Fazendeiro, & Reber, 2003). Additionally, disfluent processing can increase the use of affectively primed information during impression formation ("affect infusion"; Forgas, 1995), which can further impact judgments.

Each of the above perspectives suggest that disfluency may be particularly problematic for intergroup contexts, in which people often have more negative expectations and affective orientations (naïve theories), and experience more disfluency (both cognitively and behaviorally) compared to intragroup exchanges. People spontaneously experience more positive affect toward and are more trusting of ingroup than outgroup members (Otten & Moskowitz, 2000; Yuki, Maddux, Brewer, & Takemura, 2005) and retain more information about the ways in which ingroup members are similar to and outgroup members are dissimilar to the self (Wilder, 1981). In part as a consequence of these dynamics, people generally have more pessimistic expectations for their encounters with outgroup compared to ingroup members (Mallett, Wilson, & Gilbert, 2008; Plant, 2004). In the U.S., interracial and interethnic interactions, in particular, are often marred by uncertainty and distrust (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Plant & Butz, 2006). Whites and ethnic minorities often make different attributions about the same event involving a racial ingroup and outgroup member (Chatman & von Hippel, 2001) and have more

negative interpretations of outgroup than ingroup members' intentions, even when their behaviors are identical (Hess, Adams, & Kleck, 2008; Shelton & Richeson, 2005).

Although few studies have directly examined effects of perceptual fluency on intergroup judgments, there are several reasons to suspect that disfluency may enhance intergroup biases. Consistent with the naïve theory or attributional account of fluency effects (Schwarz, 2004), empirical studies have shown, for example, that people generally misattribute disfluency to a lack of familiarity (see Kelley & Rhodes, 2002) and that low processing fluency can reduce perceptions of similarity (Blok & Markman, 2005) and reduce trust (see Alter & Oppenheimer, 2009). Within the intergroup domain, Claypool, Housley, Hugenberg, Burnstein, and Mackie (2012) found that fluent faces, manipulated through exposure times and image resolution, were categorized more readily as ingroup members and liked more than disfluent stimuli. To the extent people rapidly perceive category distinctions (Grill-Spector & Kanwisher, 2005; He, Johnson, Dovidio, & McCarthy, 2009), we reasoned that disfluency may, therefore, exacerbate the perception of group differences and enhance biases during impression formation.

Building on the work of Schwarz (2004) and Oppenheimer and colleagues (e.g., Alter & Oppenheimer, 2009), in a series of studies, we applied a fluency approach to the study of intergroup perception and communication, considering both individual and situational features that may impact processing demands (see Figure 1). We first describe a series of studies that explored the effects of incidental processing demands (e.g. clarity of text and images) on intergroup perception. We then extend a fluency perspective to the domain of social interactions, examining fluency processes hypothesized to have a substantial impact on dyadic intergroup relations. Together, the studies test the notion that the mere effortfulness of social perception can serve as a metacognitive cue that enhances intergroup bias. That is, *dis*fluency may not only

be more likely to be generated in intergroup, relative to within-group contexts (e.g., Vrij et al., 1992; see also Vorauer, 2006), but is also hypothesized to carry more evaluative potency in the intergroup domain. Below, we describe empirical studies examining this possibility.

Fluency and Intergroup Perception: Empirical Evidence

In an initial study (Pearson & Dovidio, 2012, Study 1), we examined the impact of fluent versus disfluent communication on perceptions of *intergroup* relations. Participants were presented with declassified correspondence between two political leaders (see Sampson & LaFantasie, 1996), US President John F. Kennedy and Russian President Nikita Khrushchev, during a time of heightened tension between the US and Russia (the 1961 Cuban Missile Crisis) and asked about their perceptions of relations between the two nations and similarities between its citizens. Fluency was manipulated by presenting the text in either low or high contrast (see Hansen, Dechêne, & Wänke, 2008; Reber & Schwarz, 1999).

Based on previous fluency work, we hypothesized that processing ease in this context would serve two heuristic functions: To the extent that contentious relations (particularly major international conflicts) are generally seen as complex and difficult to understand, and similarities are typically easier to process than differences, we hypothesized that the experience of difficulty when reading about intergroup conflict would (a) heighten the salience of group differences and (b) be used as a cue to its intractability. Specifically, we, predicted that participants in the low contrast condition would perceive Americans and Russians as less similar, view the crisis as more severe, and perceive greater potential for conflict between the US and Russia in the future, relative to those in the high contrast condition.

The results were largely consistent with our predictions. As expected, participants in the disfluent condition perceived the US and Russia more as separate groups and American and

Russian citizens as being less similar and having different moral values, compared to those in the fluent condition. Additionally, participants who received the disfluent text perceived a greater likelihood of war occurring in the future between the US and Russia compared to those receiving fluent text. Moreover, the effects of fluency on perceptions of future conflict were mediated by participants' perceptions of the differences (computed as a composite index) between the two nations. These findings offer preliminary evidence that incidental presentation variables such as the visual contrast of communications can systematically impact perceptions of intergroup relations.

In a second study (Pearson & Dovidio, 2012, Study 2), we moved beyond general perceptions of intergroup relations to examine impressions of individual stigmatized versus nonstigmatized group members. In this study, we used a race-modified version of the classic "Donald" vignette developed by Srull and Wyer (1979; see also Devine, 1989) in which participants are asked to read about an ambiguously hostile fictitious person and to rate the person on a series of traits, including stereotypic (hostile) and non-stereotypic evaluative dimensions. In our modified version of the task, the target individual was given either a stereotypically African American (Tyrone) or White-sounding name (Jack). Fluency was manipulated by presenting the vignette in either a *hard-to-read* or easy-to-read font, a manipulation that has been used extensively in fluency research (see Alter & Oppenheimer, 2009).

Our hypotheses were derived from previous work on fluency and racial bias. Prior research suggests disfluent stimuli elicit a less positive affective response, as captured by psychophysiological measures (Winkielman et al., 2003), relative to more fluent stimuli, which can reduce feelings of liking and enhance distrust (see Schwarz & Clore, 2007), and that the

impact of experiential cues on impressions increases with less expertise in the domain of judgment (Ottati & Isbell, 1996; Sedikides, 1995; Kirk, Harvey, & Montague, 2011). Given that people spontaneously experience more negative affect toward members of stigmatized racial outgroups (e.g., Blacks; Amodio et al., 2003; Dovidio et al., 1997; Vanman, Saltz, Nathan, & Warren, 2004) and generally have less experience evaluating them relative to members of the majority group (Bar-Haim, Ziv, Lamy, & Hodes, 2006), we hypothesized that perceptual fluency would have a stronger effect on Whites' impressions of a Black compared to a White target. Specifically we hypothesized that experiencing disfluency in an impression formation task would promote more negative judgments of Tyrone, but would have little or no effect on judgments of Jack.

The pattern of results largely supported our hypotheses. Participants evaluated a Black-sounding protagonist (Tyrone) more negatively when the description was presented in a difficult-to-read compared to an easy-to-read font, but evaluated a White protagonist (Jack) no differently as a function of the fluency condition. No similar pattern of effects was found for participants' stereotypic judgments, suggesting that the effects of processing ease were restricted to evaluative bias. Interestingly, we also found evidence for the generalization of fluency effects beyond attitudes toward individual group members: Participants who read about a Black target in disfluent (versus fluent) text subsequently reported less favorable attitudes toward Blacks as a group on a thermometer measure of group attitudes, an effect that was not obtained for attitudes toward other racial/ethnic groups (e.g., Latinos, Whites) or other nonracial stigmatized groups (e.g., elderly). This finding is important because it suggests our fluency effects cannot be attributed to general self-control failure (cognitive depletion), a potential alternative explanation for effects of processing difficulty on intergroup bias (see Muraven, 2008).

Together, these studies offer preliminary evidence of systematic effects of processing experiences on intergroup perception. Specifically, the present findings suggest that, to the extent they reduce processing ease, contextual variables that are seemingly irrelevant to a judgment task may enhance biases during impression formation. In the next section, we extend a fluency framework to the study of dyadic intergroup interaction.

From Perception to Action: Fluency in Intergroup Exchanges

Research on fluency, to date, has been a largely asocial enterprise, focusing almost exclusively on antecedents and consequences of fluency at the individual level. Intergroup interactions offer an ideal context for examining fluency processes *in vivo*, as there is considerable evidence to suggest that, relative to within-group interactions, these exchanges may be particularly effortful (see Shelton & Richeson, 2006; Vorauer, 2006). Indeed, disfluencies in verbal and nonverbal behavior (e.g., hesitations) that are commonly associated with anxiety have been documented repeatedly within interracial and interethnic interactions where evaluative concerns are often heightened relative to interactions with ingroup members (e.g., Winkel & Vrij, 1990; Vorauer, 2006). Within interracial interactions, negative expectations often manifest as a mutual fear of rejection shared by members of both majority and minority groups. Whereas racial minorities may often be concerned with being the target of prejudice and show vigilance for cues of bias, Whites may often be concerned about appearing prejudiced (Shelton & Richeson, 2006). These rejection concerns can lead individuals to over-regulate interaction behaviors ("over-accommodation," see Giles & Gasiorek, this volume), which can fuel mistrust in intergroup interactions (Mendes & Koslov, 2012; Vorauer, 2006).

Although a variety of attributes might conceivably influence processing ease during social interactions (e.g., interpersonal sensitivity; Hall & Bernieri, 2001), we focus on

antecedents with demonstrated relevance to intergroup interaction (group memberships,

intergroup attitudes, self-regulation; see Fig. 1 "Person Attributes") and explore their interactive

effects with incidental contextual cues (e.g., clarity of audio-visual stimuli; Fig. 1 "Situational

Features," see Alter & Oppenheimer, 2009) on intergroup judgments.

Fluency and Social Interaction: Empirical Evidence

Pearson, Dovidio, and Phills (2010) investigated the effects of the ease of self-regulation

on Whites' cognitive functioning and interpersonal impressions during an interracial interaction.

White participants were recruited to the lab for a study on first impressions in which they

engaged in a brief conversation with a Black confederate, for whom responses were scripted. Just

prior to the interaction, the participants were instructed to either avoid expressing negative

emotions during the interaction, avoid expressing positive emotions, or received no explicit

emotion regulation instructions. Participants were told that their partner (the confederate) had

been assigned to a control condition and were asked not to disclose to their partner the

instructions that they had been given.

Ease of self-regulation was assessed with performance on a Stroop (1935) color-naming

task, administered immediately after the interaction, followed by a questionnaire in which

participants were asked to judge how friendly the confederate appeared. The interactions were

videotaped and observers naïve to the experimental conditions and study aims also independently

rated the confederates on the same dimensions. Several studies indicate that efforts to navigate

interracial interactions can be particularly taxing for Whites with stronger automatic negative

associations with Blacks (Richeson & Shelton, 2003). The implicit association test (IAT;

Greenwald et al., 1998), in particular, has been used extensively to assess automatically-activated

evaluative and semantic associations with different racial categories and predicts intergroup

responses often in ways independent of explicit attitudes (Greenwald et al., 2009). Thus we also assessed participants' implicit (race IAT; Greenwald et al., 1998) and explicit (self-reported, Brigham, 1993) racial attitudes in an ostensibly separate study.

Consistent with a fluency account of the effects of regulatory demands, we expected that implicitly biased Whites would perceive their partner more negatively in the more challenging regulatory condition (as assessed by performance on the Stroop task), hypothesized here to be the negative emotion suppression condition. In contrast, because of their hypothesized differing regulatory demands, we expected that low-prejudiced Whites would find the instructions to suppress positive expressions most challenging, and that these individuals would therefore perceive their partner more negatively in this condition relative to the control group.

The results were consistent with our predictions. Whereas high implicitly-biased Whites showed impaired performance after suppressing negative versus positive emotional expressions during an interracial interaction, relative to a no-suppression control group, low implicitly-biased Whites showed the opposite pattern. Furthermore, the current findings reveal a social cost of more effortful self-regulation. Both high and low-implicitly biased Whites evaluated the Black confederate more negatively in the more demanding regulatory condition (i.e., after suppressing negative expressions for high biased Whites, and after suppressing positive expressions for low biased Whites). These effects emerged despite no corresponding differences in observers' independent judgments of the confederates across experimental conditions, suggesting that participants' impressions were affected by the ease of self-regulation rather than the confederates' actual behavior. Together, these findings suggest that self-regulation may contribute to disfluency in social interactions and, paradoxically, may promote bias among those

who are working hardest to control it (i.e., participants with stronger implicit biases; see Richeson & Shelton, 2003).

In another study (Pearson et al., 2008), we examined whether temporal disfluency in dyadic interaction (e.g., a brief delay in audiovisual feedback) can not only reflect, but also *promote* tension in intergroup interaction, and subsequently undermine both Whites' and minorities' interest in continuing a cross-group exchange. Minimally acquainted White, Black, and Latino participants engaged in intergroup or intragroup dyadic conversation over closed-circuit television either in real-time (the control condition) or with a subtle temporal disfluency (a 1-second delay in audio-visual feedback) present throughout the course of the interaction. After interacting, participants reported how anxious they felt, their perceptions of their partner's anxiety, and their reported interest in continuing the interaction.

Whereas previous research has focused on verbal and nonverbal disfluencies as a consequence of anxiety in intergroup interactions (e.g., Vrij et al., 1992), we investigated the role of disfluency as a potential cause of anxiety and disengagement from intergroup interaction. In addition, we examined the role of anxiety attributions (a marker of negative intergroup expectancies; Plant, 2004), as a potential mechanism for the effects of interaction fluency on intergroup (relative to intragroup) perception. Specifically, we hypothesized that members of intergroup dyads would perceive their partners more negatively (as more anxious) under a delay, reflecting their more negative attributions (naïve theories, Schwarz, 2004) for these exchanges, and report less interest in the interaction as a consequence, compared to those interacting in real-time. In contrast, we expected that the perceptions of those in intragroup interactions would be less affected by the fluency manipulation, reflecting perceivers' more positive expectations for these exchanges.

The pattern of results was largely as predicted. We found that, relative to interactions in real-time, temporal disfluency amplified felt and perceived anxiety among intergroup, but not intragroup, conversation partners, reduced perceptions that outgroup partners were responsive during the interaction, and systematically undermined interest in intergroup (but not intragroup) interactions. Rather surprisingly, intragroup dyads reported less anxiety under delay conditions than when interacting in real time, perhaps suggesting a more positive naïve theory for disfluency in these exchanges (e.g., as a marker of thoughtfulness).

These findings offer experimental evidence of the differential impact of disfluency on same and cross-group interaction partners at minimal acquaintance. Thus, even well-intentioned behaviors, such as efforts to monitor one's behavior to avoid appearing prejudiced, may substantially increase anxiety and reduce mutual interest in intergroup contact to the extent they produce delays in responding. Practically, this intergroup fluency bias may help account for many stubborn racial and ethnic disparities in law enforcement, such as in vehicle searches and seizures (Engel & Johnson, 2006), and job interviews (e.g., Fugita, Wexley, & Hillery, 1974; Word, Zanna, & Cooper, 1974), during which apprehensive behavior is often used as a marker of deception (Stromwall & Granhag, 2003).

What Can Fluency Teach Us About Social Cognition and Communication?

Research on metacognitive experiences highlights important limitations of traditional content-based approaches to the study of social cognition and communication. Although content models have been fruitful in illuminating some systematic sources and manifestations of bias (e.g., differential emotional responses to social groups; Stereotype Content Model; Fiske et al., 2002) and processes specifying their expression (e.g., application and accessibility models; see Moskowitz, 2010), they have trouble accounting for several perplexing findings. For instance, as

has long been noted (e.g., Eagly & Chaiken, 1993), attitudes are often surprisingly poor predictors of how people will behave in any given situation. Within the field of intergroup relations, a weak attitude–discrimination link has often been attributed to socially desirable responding, leading investigators to search for "bona fide" measures of attitudes that may be less susceptible to the deliberate motives of respondents (e.g., Fazio, Jackson, Dunton, and Williams, 1995). However, a recent meta-analytic by Talaska et al. (2008) that incorporated both explicit and implicit measures of racial attitudes revealed a very modest average attitude-discrimination relationship of only $r = .26$, with attitudes, thus, accounting for less than 7% of the variance in discriminatory behavior in any given setting. From a content perspective, in which racial attitudes and stereotypes (particularly implicit measures) are presumed to reflect stable, context-independent constructs, this finding is particularly troublesome.

One reason for the rather weak predictive power of attitude and stereotype measures may be the multitude of other inputs - including experiential cues - that may simultaneously impact judgments at any given time. Failure to account for these other contextual inputs may substantially constrain researchers' abilities to predict behaviors, including future judgments. This perspective is suggested by Lord and Lepper's (1999) "matching principle," in which responses at an initial time point are only likely to predict responses at time 2 when the contexts are similar. The present research suggests that one systematic source of contextual information may be simple presentation variables, such as font types, text contrasts, and image resolutions, that affect the ease of processing visual information during impression formation. Future research might also consider whether processing experiences in other sensory domains (e.g., sound clarity, tactile information) or in non-sensory domains (e.g., phonemic fluency, syntactic complexity, semantic coherence; see Alter & Oppenheimer, 2009; word choice, see Fiedler &

Mata, this volume) can produce parallel effects to those of visual processing experiences on intergroup cognition.

A fluency perspective may also illuminate new cognitive mechanisms that contribute to the surprising "persistence and pervasiveness" of many contemporary forms of prejudice (Dovidio & Gaertner, 2007, p. 43). There is some evidence to suggest that individuals harboring more subtle forms of prejudice, such as aversive racists (i.e., Whites who endorse egalitarian principles but show evidence of bias on indirect measures; see Dovidio & Gaertner, 2004), may be more susceptible to the influence of processing experiences when forming impressions than those with more extreme attitudes. Indeed, attitude extremity has been shown to be a powerful moderator of fluency effects. Haddock, Rothman, Reber, and Schwarz (1999), for example, found that whereas judgments of participants with moderate attitudes toward a controversial policy (doctor-assisted suicide) were influenced by ease-of-retrieval experiences, those with more extreme attitudes were not. Within the intergroup domain, individuals scoring relatively low on self-report measures of prejudice have been shown to be more influenced by extraneous influences and processing demands (e.g., ease-of-retrieval, Dijksterhuis, Macrae, & Haddock, 1999; see also Dasgupta et al., 2009, and Kawakami et al., 2007) when judging group members than high-prejudice individuals. In one such study (Dijksterhuis et al., 1999), participants who scored relatively low on a self-report measure of gender bias (the Modern Sexism Scale) judged women more stereotypically when they had to come up with 3 versus 8 gender differences – an effect not observed among those with stronger explicit biases.

The above findings are consistent with growing evidence of the sensitivity of indirect measures of prejudice to a wide variety of contextual variables (see Gawronski & Sritharan, 2010) and offer an information processing explanation for the persistence of contemporary forms

of prejudice. That is, those with more egalitarian attitudes on self-report measures may be particularly sensitive to processing experiences when forming impressions of outgroup members. Considering the vast array of cognitive operations performed in everyday life, future research on contemporary prejudice may well benefit from additional research examining how metacognitive experiences contribute to conscious and nonconscious forms of bias.

A fluency perspective may also help to explain how simple exposure to outgroups can lead to more positive intergroup attitudes even when Allport's (1954) optimal conditions for contact are not met (Pettigrew & Tropp, 2006). For example, Tam, Hewstone, Harwood, Voci, and Kenworthy (2006) and Turner, Hewstone, and Voci (2007) assessed the effects of contact on implicit and explicit attitudes toward elderly persons and Whites' attitudes toward South Asians, respectively. In general, measures of the overall amount of intergroup contact (e.g., proportion of neighbors who are out-group members) were better predictors of lower implicit prejudice than were measures of the quality of contact (e.g., self-disclosure and emotional closeness), which better predicted explicit attitudes. Interestingly, however, in both of these studies, the effects of contact on implicit attitudes were not mediated by factors that typically mediate explicit attitudes (e.g., anxiety, perspective-taking), but, rather, showed a *direct*, positive impact on implicit attitudes, suggesting the potential value of mere contact for reducing unconscious biases. This finding is consistent with work by Zebrowitz and colleagues on the face overgeneralization hypothesis (FFO; Zebrowitz & Collins, 1997), which argues that racial prejudice derives, in part, from more negative evaluations of faces that deviate from experienced prototypes, presumably due to the lower perceptual fluency unfamiliar faces engender (Reber et al., 1998).

Evidence for the prejudice-reducing benefits of mere cross-group exposure has been obtained in several studies. Zebrowitz, White, and Wieneke (2008), for instance, found that both

supraliminal and subliminal exposure to novel Asian and Black faces increased Whites'

subsequent liking for a different set of Asian and Black faces, respectively. Similar prejudice-

reduction benefits have been observed when participants are asked to simply imagine interacting

with an outgroup member (Crisp & Turner, 2009), and point to a potential role for processing

ease as a mediator of effects of both real and simulated contact on intergroup attitudes.

Moreover, with regard to the quality of intergroup contact, a fluency explanation might help

account for the finding that more structured intergroup interactions tend to produce more positive

intergroup outcomes (Avery, Richeson, Hebl, & Ambady, 2009). To the extent structured

exchanges (e.g., behavioral scripts) lessen processing demands commonly experienced in

interracial interactions, they may be particularly beneficial for facilitating rapport in these

exchanges (see Richeson & Trawalter, 2005). Additional studies might examine whether

inducing processing ease using the wide array of other methods available to researchers, as

catalogued by Alter and Oppenheimer (2009), might have similarly beneficial effects on

intergroup interactions.

     A fluency perspective may also illuminate mechanisms for other well-documented

findings in intergroup relations. For example, the finding that ingroup faces are often better

remembered than outgroup faces (the "own-race bias," Meissner & Brigham, 2001), when

viewed under the lens of fluency, may reflect higher level (i.e., more abstract) encoding that has

been shown to accompany disfluent processing. Alter and Oppenheimer (2008), for instance,

found that participants judged cities to be more distant and described them in more abstract terms

(e.g., describing New York as a "civilized jungle" versus "a large city") when the name was

printed in a difficult-to-read font. To the extent that intergroup perception is experienced as a

fundamentally more disfluent process (Vorauer, 2006), outgroup members may be subsequently

construed and encoded in memory at a more global level of processing (see Förster &

Dannenberg, 2010), potentially at the expense of individuating information.

Research on identity and stereotype threat may similarly benefit from an intergroup

fluency approach. A fluency account of identity threat (Steele, Spencer, & Aronson, 2002) would

suggest that identification with a particular academic domain and assessments of belonging and

social fit (Walton & Cohen, 2007) may be directly shaped by the cognitive demands (Schmader

& Johns, 2003) and, thus, potentially disfluent *meta*cognitive experiences that stereotype threats

evoke. Furthermore, an intergroup fluency framework would suggest that these demands may

arise from at least three sources: (a) situational cues that increase or decrease identity concerns

(e.g., perceived diagnosticity of exams, Steele et al., 2002), (b) specific coping strategies that

people deploy to manage these concerns (e.g., emotion suppression), (c) as well as a wide range

of largely unexplored incidental variables (e.g., exam fonts, clarity of audio and visual aides used

in lectures, conceptual clarity of evaluation criteria) that may also impact processing demands in

educational and performance settings.

Conclusion

The research reviewed in this chapter highlights the dynamic and constructive nature of

intergroup perception. Whereas past approaches to the study of prejudice, and social cognition

more generally, have typically focused on *what* comes to mind when we form an impression of a

member of another social group, the present chapter underscores the importance of considering

the processing experiences that accompany these cognitions and may serve as additional inputs

into the social inference process. Across a variety of instantiations (e.g., text fonts, low vs. high-

contrast images, asynchrony in video-mediated interactions), we find evidence that disfluent

media can enhance intergroup biases during impression formation. These detrimental effects

occur primarily in intergroup interaction, where people generally have more negative expectations and affective orientations, and experience more disfluency (both cognitively and behaviorally) compared to intragroup exchanges. Thus, knowledge of *meta*cognitive influences can illuminate how physical and social environments sculpt communication and perception, and may ultimately shape intergroup relations.

The benefits of extending a fluency approach to the study of intergroup processes may also be reciprocal. Research on fluency has traditionally been an individual-level enterprise, focused on effects of incidental cues (text fonts, image clarity, etc.) on individual perceivers, largely removed from their social surroundings. Yet, social interactions, and intergroup interactions in particular, can impose substantial processing demands on perceivers and, thus, offer an especially promising venue for investigating the role of fluency in everyday perception and communication.

Finally, an intergroup fluency framework may also have direct practical implications. A recent survey of business practices revealed that over 96% of Fortune 1000 companies regularly use virtual communications (e.g., voice-over-IP, video conferencing) in lieu of in-person meetings (Plantronics UC Gatekeeper Study, 2010; see also Pew Research Center, 2008) – a potentially troubling statistic, given evidence that more diverse teams underperform relative to homogenous teams when going virtual (Daim et al., 2012; Jacobs et al., 2005). Understanding how digital media enhance or attenuate bias (e.g., through the speed, familiarity, and reliability of communications) will become increasingly critical as virtual interactions rapidly replace in-person exchanges. A fluency perspective may, thus, shed light on how growing diversity and new modes of communication will shape social cognition and communication in the 21st century.

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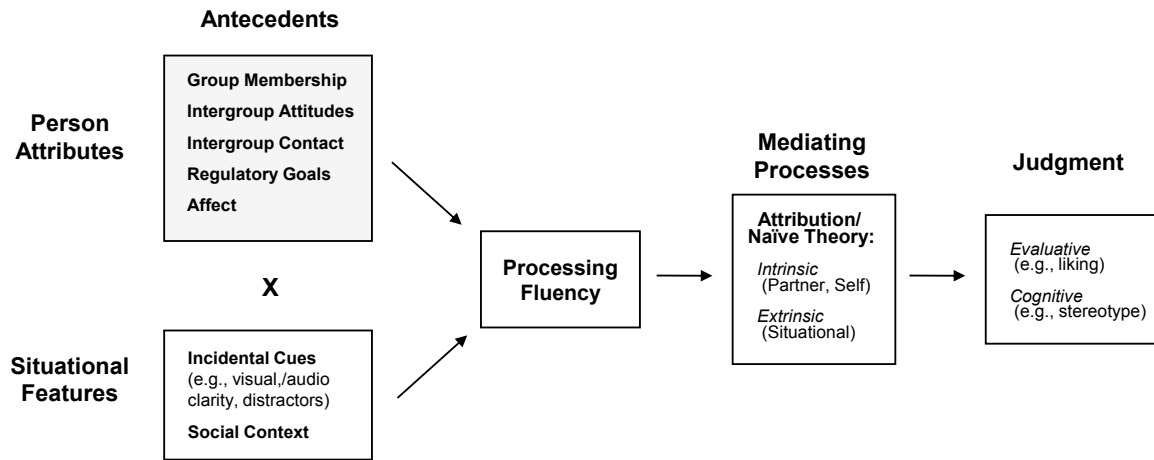
Figure 1. Person x situation model of intergroup fluency and its effects on social

judgment. Person attributes include perceiver and target influences on information

processing examined in the present research. Situational features represent external

demands on information processing, including incidental cues and other contextual

variables.