CHAPTER 9

Social Categorization and Beyond

How Facial Features Impact Social Judgment

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The human face conveys information to help determine a person’s identity, category membership, personality, emotional or mood state, what he or she might be thinking about or looking at, and the veracity of his or her verbal behavior (Bodenhausen & Macrae, 2006; Mason, Cloutier, & Macrae, 2006). The face tells us so much about others that is potentially relevant to social thought and action. Yet, aside from a few notable research programs, this important area of research remains understudied in social psychology (Bodenhausen & Macrae, 2006; Zebrowitz, 2006). In contrast, and perhaps understandably, researchers have focused on more explicit aspects of behavior and their implications for social judgment and interaction; particularly in the realm of social categorization and its consequences for stereotyping, prejudice, and discrimination. In this chapter, we argue that the disproportionate attention given to behavior from social psychological researchers has resulted in...
through an identification process. This is a preconscious categorization of the target's attributes and the category representation it activates. In this model, categories take the form of prototypes: amalgams of features that have been abstracted from individual exemplars previously encountered. With a new instance (target), impression formation processes are determined by the degree of fit between the target and the category representation it activates. In addition, Brewer assumes that the pattern-matching process is constrained by this initial activation—it is less likely that the process will reinitiate with a different category. Thus, if the fit between the initial category and the instance is poor, the target will be compared to subtypes of the initial category rather than restarting with a new category. If adequate fit cannot be established between the social target and the category subtypes, individuation takes place in which the target attributes are integrated in a piecemeal fashion.

Fiske and Neuberg's Continuum Model

The continuum model (Fiske, Lin, & Neuberg, 1999; Fiske & Neuberg, 1990) posits that social impression formation processes vary on a single continuum ranging from category-based to piecemeal integration of a target's features. The location on the continuum depends jointly on the information available about the target and the perceiver's level of motivation. The process begins with an initial categorization of the individual based on salient features, such as physical characteristics. Moreover, Fiske and her colleagues argue that “certain social categories—such as gender, ethnicity, and age—are ‘privileged’ in that they can be easily applied to most people one encounters” (Fiske et al., 1999, pp. 233–234).

Initial categorization is followed by an assessment of whether the perceiver is motivated to process the target in greater detail. If so, attentional resources are allotted to the task of confirming the initial categorization, with a bias toward preserving that categorization. If the perceived fit between the target's attributes and the category representation...
Facial Cues: Indirect and Direct Influences on Social Representation and Judgment

Facial Cues and Categorical Bias

As suggested by traditional models of impression formation, features can help one to determine membership in a particular category, potentially subjecting the target to available stereotypes. While these models recognize that behavioral typicality—the extent to which behavior reflects cultural stereotypes about a target’s group—may impact judgments, most have been somewhat rigid in their consideration of the influence of facial typicality—the extent to which facial features reflect cultural stereotypes about a target’s group (Maddox, 2004). This view might be characterized as an “all-or-nothing” perspective when considering the influence of variation in facial cues. Regardless of within-group variability in facial typicality, all targets are stereotyped similarly once categorized as a member of particular category. For example, in the presence of certain defying characteristics such as light or dark skin color, a target may be categorized by race (e.g., Allport, 1954; Rothbart & John, 1985). However, skin color may vary greatly within a racial group. From an “all-or-nothing” perspective, this variation is irrelevant to the stereotyping of category members.

Early social psychological demonstration that within-group variation in facial features does in fact influence social judgments was provided by Brewer, Dull, and Lui (1981), who conducted a study concerning young persons’ perceptions of the elderly. They tested the hypothesis that young people have differentiated category representations of the elderly, consisting of various subtypes. Unknown to the participants, these
researchers had identified three potential subtypes of elderly people as the focus of the study: grandmothers, elder statesmen, and senior citizens. Ten photographs represented each subtype. In one task, participants were presented with all of the photographs and asked to sort them into piles, or categories, as they thought appropriate. Using cluster analysis, the researchers compared the pattern obtained from their participants to the predicted pattern of sorting (clustering the photos into three distinct subtypes) and found that participants sorted the photographs in a manner consistent with the a priori subcategories. This finding was used as partial evidence that representations of others can be described as consisting of distinct subtypes. A similar pattern of data was obtained among a sample of elderly participants (Brewer & Lui, 1984). This seminal evidence for the existence of meaningful social subtypes was gathered through investigations that focused on perceptions of faces (not behavior). Thus, we find it somewhat ironic that traditional social psychological models of category representation have undervalued the contribution of within-category variations in behavior.

Subsequent investigations have noted this distinction and investigated the role of facial feature variations among members of other social categories. Maddox and Gray (2002, Study 1) used this evidence of age-related subtypes as a rationale to explore the existence of racial subtypes as a function of skin tone among Blacks. The study used the category confusion paradigm developed by Taylor and colleagues (Taylor, Fiske, Etcoff, & Ruderman, 1978). Black and White participants viewed simulated interactions in which the skin tone of the Black male discussants was varied through digital manipulation. Following this task, participants were unexpectedly asked to match each statement with the discussant who had made it. Inferences about category representation can be drawn when examining the pattern of errors made on this task. Within-category errors occurred when participants confused the correct discussant with a person from within the same skin tone category (confusion among light-skinned or among dark-skinned discussants). Between-category errors occurred when participants confused the correct discussant with someone from the opposite skin tone category (confusion between light-skinned and dark-skinned discussants). The results revealed that participants made more within-category than between-category errors, suggesting that they attended to, encoded, and used the skin tone of the discussants in making their statement assignments.

Evidence also suggests that the salience of skin tone is malleable. Contextual factors may operate to make skin tone more or less salient. Guided by the model of social category salience proposed by Blanz (1999) that considers both person and contextual factors, Maddox and Grey (2002) used the category confusion paradigm to investigate contextual influences on the salience of skin tone-based subcategories. Two experiments demonstrated that a manipulation of issue relevance during a group discussion among light- and dark-skinned Blacks enhanced the category salience of skin tone, revealed in the pattern of within- and between-category errors. Discussion topics relevant to the racial politics of skin tone (race relations in the United States) led to increased skin tone salience as compared to neutral topics (potential leisure activities or environmental issues). Group membership seemed to make little difference. Across both the Maddox investigations, the pattern of skin tone category salience occurred for both Black and White participants, suggesting that skin tone cued meaningful subcategories in these perceivers. The same was true of age-related subtypes for both young (Brewer et al., 1981) and elderly (Brewer & Lui, 1984) perceivers. Thus, sensitivity to subtypes of a category may be similar for perceivers regardless of their own membership in the category.

How Face-Related Subcategory Membership Affects Stereotyping and Prejudice

Research suggesting that within-group facial feature variation may be associated with meaningful subcategory is complemented by evidence that this subcategory membership affects stereotyping and prejudice. Brewer et al. (1981) used a paradigm in which participants made trait associations for photographs representing two types of subsets of elderly people. Meaningful subsets consisted of photographs of individuals from one of the proposed subtypes: grandmothers, elder statesmen, or senior citizens. Nonmeaningful subsets consisted of photographs of members taken from each subtype, representing the superordinate category. Participants were shown six sets of photographs independently in a random order. Each set consisted of three photos. In the meaningful condition, subjects saw two sets consisting of photographs from each subtype, totaling six sets. In the nonmeaningful condition, participants saw six sets, each consisting of one photograph from each subtype (thereby representing the superordinate category). Participants were also presented with a checklist of 44 trait adjectives taken from previous research on stereotypes of the elderly and asked to indicate those personality traits on the checklist that the three people pictured had in common. Comparison of the number of traits checked off for each subset as well as the content of those traits indicated that (1) more traits were checked off for meaningful versus nonmeaningful subsets and (2) that trait content agreement was greater within meaningful subsets than between meaningful subsets.
In other words, participants checked off the same traits for similar subtypes and different traits for dissimilar subtypes. In addition, many of the characteristics associated with different subtypes were distinct from those associated with the superordinate category. These findings were presented as evidence that the richest trait associations are found at the subtype level (grandmothers, elder statesmen, and senior citizens) and not the superordinate level (elderly people).

Since that demonstration, others studies have interpreted these findings as the result of facial cues activating subcategory membership and associated stereotypes. For instance, Dixon and Maddox (2005) used a digital manipulation of skin tone and race among a multiple-race sample of participants. They varied the race and skin tone of an alleged perpetrator in a crime story. Participants were exposed to a crime story briefly featuring, optionally, a White, light-skinned Black, medium-skinned Black, or dark-skinned Black perpetrator. Dixon and Maddox assessed whether exposure to these stories could influence various story-related judgments among viewers. There were no differences in impression judgments as a function of skin tone. However, among heavy news viewers, they did find that the brief exposure to a photo of a dark-skinned Black perpetrator during a crime story led to more emotional discomfort about the story than exposure to a White perpetrator associated with the same story. No differences surfaced when comparing dark-skinned Black and light-skinned Black perpetrators or when comparing light-Black and White perpetrators. The authors suggested that, compared to the light-skinned Black perpetrator, the dark-skinned Black perpetrator achieved a certain threshold to activate category stereotypes associating Blacks and criminality. It appeared that dark-skinned Blacks represented a distinct subcategory of Blacks (those more associated with criminality) from light-skinned Blacks. Facial feature subcategory associations also exist on an implicit level. Using an implicit association test (IAT) that paired high and low prototypic Hispanic faces with positive and negative attributes, Uhlmann, Dasgupta, Elgueta, Greenwald, and Swanson (2002) found implicit preference for less typical Hispanic faces over more typical Hispanic faces among both light-skinned and dark-skinned Hispanic participants. These authors also interpreted their findings as reflecting meaningful subcategories of individuals of Hispanic descent.

These studies suggest that facial features measured implicitly or explicitly may exert an influence over the categorization and judgment of individuals who belong to the same superordinate category. Specifically, facial features may activate meaningful subcategories with rich trait and affective associations. This perspective stands in contrast to the assumptions of traditional models of impression formation that fail to recognize a role for facial feature-related subtypes. In the next section, we consider another role of facial features that traditional models fail to capture, a role that is entirely independent of categorization processes.

Facial Cues and “Feature Bias”

Blair and colleagues (Blair, 2006; Blair, Chapleau, & Judd, 2005; Blair, Judd, & Chapleau, 2004; Blair, Judd, & Fullman, 2004; Blair, Judd, Sadler, & Jenkins, 2002) have examined the role of racial phenotypic features and racial category membership in stereotyping of Black and White men depicted in photographs. In a seminal series of studies (Blair et al., 2002), White participants were asked to rate the faces of Black and White males for their degree of fit with descriptive scenarios. These faces varied in the extent to which the individuals exhibited features that were considered Afrocentric (e.g., dark brown skin, broad nose, full lips, and coarse hair). The scenarios described behaviors that were stereotypical of Black or White Americans. Not surprisingly, the researchers found strong evidence for traditional racial category-based stereotyping. However, they also observed a phenomenon they termed “feature bias”—stereotyping and prejudice based on Afrocentric features even when controlling for the influence of racial category membership—on judgments of both Black and White males. In other words, regardless of the race of the person pictured, faces with more Afrocentric features were stereotyped more than those with less Afrocentric features. This suggests that White perceivers are using elements of the Black American stereotype to make judgments of White males who exhibit Afrocentric features. As such, these findings represent evidence that contradicts the predictions of more traditional models of impression formation that have assumed that stereotype use is mediated by categorization.

The influence of racial feature variation has also been demonstrated in tasks designed to measure indirect and direct implicit evaluations (Livingston, 2001; Livingston & Brewer, 2002; Uhlmann et al., 2002). Livingston (2004, Study 3) explored the role of individual differences in the information value of Afrocentric facial features on implicit evaluative priming. Livingston hypothesized that individual differences in the belief that external physical characteristics are related to internal personality characteristics would predict the use of physical (facial) cues in social judgments. In this experiment, participants identified as high or low in this reliance on perceptual cues were supraliminally primed with several faces of males and females, each of whom was either Black or
White. As the manipulation of facial appearance, the last block of faces contained either high prototypic or low prototypic Blacks. The researchers examined the influence of this manipulation on the interpretation of a Donald paragraph (Srull & Wyer, 1979) that described a race-unspecified target who performs a series of ambiguously aggressive behaviors (relevant to the stereotype of Blacks). While the results of a recognition task demonstrated that all participants were sensitive to variations in physical prototypicality, only participants who were high in their reliance on perceptual cues were influenced by the priming manipulation. These participants made more stereotypic evaluations of the ambiguous target described in the paragraph after being primed with high prototypic compared to low prototypic faces. Participants low on this index of perceptual cue reliance showed no differentiation in response to high and low prototypic primes. In addition to demonstrating an indirect implicit influence of facial feature variation on evaluation, these results suggest that individuals may exhibit different degrees of sensitivity to this variation.

Providing more direct evidence of the implicit influence of racial feature variation on evaluation, Livingston and Brewer (2002) found that highly prototypic Black faces were associated with more negative implicit evaluations than less prototypic Black faces. They used a sequential priming paradigm (Fazio, Jackson, Dunton, & Williams, 1995) that measured affective reactions to Black faces that were high and low in racial prototypicality. In two experiments, automatic evaluative responses indicated negative evaluations of Black faces that were high in racial prototypicality as compared to those that were low in racial prototypicality (Experiments 1 and 5). Evidence from another experiment suggests that facial characteristics elicit preconscious cue-based processing prior to, or in lieu of, category-based processing (Experiment 3). In this experiment, participants completed a conceptual judgment task involving stereotype-relevant words instead of the evaluative task used in other experiments. Responses to these words were not affected by manipulations of racial prototypicality, a finding that suggests a limited influence of category knowledge.

It should be noted that, while the Livingston investigations described here focused mainly on implicit evaluations, the research by Blair and her colleagues described above provides evidence for the influence of facial features on explicit semantic and evaluative judgments. More importantly, each of these lines of research strongly suggests a role for facial features that is not mediated by categorization processes. That is, they point to a direct association between facial cues and category-relevant thoughts and feelings that is independent of the categorization of the target. These findings represent a significant deviation from the assumptions of traditional models of impression formation. We now turn to some interesting lines of research that extend our understanding of the boundaries of facial feature influences.

Exploring the Complexities of Facial Cue-Based Social Judgments

Not content to “simply” demonstrate the influence of facial feature variation on social thought and evaluation, researchers have begun to explore the implications of facial feature variation for more nuanced aspects of intergroup perception. Blair et al. (2005) examined the interaction between Afrocentric features and diagnostic information on stereotypic judgments. Previous research has focused on the extent to which a target’s racial category membership and behavior may influence stereotypic judgments of him or her. That research has demonstrated that, under certain conditions, diagnostic behavioral information can override the influence of a category stereotype (e.g., Locksley, Borgida, Brekke, & Hepburn, 1980). These researchers wondered whether the same was true with respect to the influence of feature-based stereotypes. A majority White sample of participants was presented with several photographs of Blacks who varied in perceived Afrocentricity. Each photograph was paired with descriptions of four situations in which the person was reported to have behaved aggressively (stereotype-consistent) or nonaggressively (stereotype-inconsistent). Participants’ task was to estimate the likelihood that each target would behave aggressively or nonaggressively in a fifth situation. Results showed that participants relied heavily on the behavioral information when making a prediction about aggression in the fifth scenario. However, the presence of Afrocentric features was also a significant, albeit weaker, influence.

These findings fall outside the scope of the predictive lens provided by traditional theoretical models. As such, feature-based stereotyping and prejudice may pose additional problems for those interested in countering their influence. Sczesny, Spreemann, and Stahlberg (2006) explored the role of gender stereotypical physical appearance on perceptions of competence. Across two experiments, participants viewed a description and photograph of a man or woman who had either stereotypically masculine or feminine facial characteristics. Using direct (Experiment 1) and indirect (Experiment 2) measures of leadership competence, participants viewed stereotypically masculine targets as more competent than stereotypically feminine targets. However, the results of the direct measure reflected more favorable ratings toward women, while the indirect measure revealed a bias in favor of men. But why the divergence in the direction of sex stereotyping using direct and indirect measures? The authors posited that, while the direct measure was sub-
more Afrocentric features were stereotyped to a greater degree than those with less Afrocentric features. In a second experiment, participants completed the task either with instructions to suppress their stereotypes about the targets or without such instructions. Participants with suppression instructions were successful in mitigating race-based stereotyping compared to those without. However, the suppression manipulation had no influence on stereotyping based on Afrocentric features, even when the experimenters identified the specific features that participants should be aware of (Blair, Judd, & Fallman, 2004; Experiments 3 and 4). Szesny and Kühnen (2004) documented a similar effect in a pilot study. Their results showed that, while people are quite aware of the potential influence of biological sex on stereotypes about leadership ability, they are less aware of the potential influence of physical appearance. The conclusion drawn from these studies is that feature-based stereotyping is highly efficient, even more efficient than category-based stereotyping. This efficiency may bypass peoples’ attempts to control their stereotyping, perhaps because perceivers are unaware of how features affect judgments.

The failure of attempts at suppression is disheartening, as feature-based stereotyping yields undesirable societal consequences. In addition to disparities based on educational, socioeconomic, and occupational opportunities and other interpersonal outcomes (for reviews see Herr- ring, Keith, & Horton, 2004; Maddox, 2004), feature-based stereotyping has been demonstrated to influence outcomes in the criminal justice system. Blair, Judd, and Chapleau (2004) explored the role of Afrocentricity in criminal sentencing. Photographs and criminal histories for Black and White inmates were sampled from a criminal database maintained by the State of Florida Department of Corrections. Photographs were coded for images of Afrocentric faces, while criminal histories were coded for several variables, including severity of crime and length of sentence. The results revealed little influence of race on sentencing; Blacks and Whites received sentences of similar length when controlling for crime-relevant factors such as the severity of the crime. However, using the same controls, the presence of Afrocentric features was a significant predictor of longer sentences regardless of the race of the inmate. Because judges are responsible for sentencing offenders in Florida, these archival data strongly imply among judges an ability to adjust for the influence of racial category membership in their sentencing but an inability to do so for Afrocentric features (Blair, 2006). Similar results come from a study by Eberhardt, Davies, Purdie-Vaughns, and Johnson (2006). They asked a (majority White) sample of undergraduates to rate the stereotypicality of faces of 44 Black men who had been convicted of murder in Philadelphia, Pennsylvania, from 1979 to 1999.

Indeed, research has demonstrated that, while category-based stereotyping may be controlled or mitigated, feature-based stereotyping is a highly efficient process that may operate unabated. Researchers have used a variety of methods to attempt to disrupt feature-based stereotyping, with little success. For example, Blair (2006) used the face inversion technique to explore the efficiency of Afrocentric features in stereotyping. Research on the face inversion effect (Valentine, 1991) reveals that inverted faces are less easily recognized compared to upright faces, a finding that is attributed to the disruption of holistic processing of a face. In her research, Blair (2006) presented Black faces of varying degrees of Afrocentricity and asked participants to rate the degree to which stereotype-relevant paragraphs described each face. Half of the participants saw upright faces while conducting this task, while the others saw inverted faces. The results revealed that faces with a greater degree of Afrocentric appearance were stereotyped more, both positively and negatively, than faces with a less Afrocentric appearance. Supporting the argument that facial feature stereotyping is highly efficient, face inversion did not affect the degree of stereotyping based on Afrocentric features.

Similar evidence on the efficiency of feature-based stereotyping was provided by Szesny and Kühnen (2004), who examined the role of perceived gender stereotypical physical appearance on perceptions of leadership competence. Participants reviewed the application materials for a potential job candidate accompanied by a photograph of a man or woman who was stereotypically masculine or feminine in facial appearance (operationalized as short vs. long hair, large vs. small nose, and strong vs. fine features). While reporting their impression of the candidates, participants were also placed under conditions of low or high cognitive capacity. Results revealed that the use of the sex category was influenced by the capacity manipulation but the use of physical features was not. Specifically, women were rated as more competent than men when cognitive capacity was high, but the reverse was true when capacity was low. Targets with masculine features were rated as more competent that those with feminine features independent of capacity. Thus, cognitive capacity seemed to impair stereotyping based on the sex of the targets but not the gender typicality of their features.

These results parallel evidence provided by Blair, Judd, and Fallman (2004), who used a dual-task manipulation to explore the efficiency of stereotyping on the basis of race and Afrocentric features. Their results showed that cognitive load did not affect the degree of stereotyping based on Afrocentric features. Regardless of cognitive load, targets with
When examining the actual sentencing in those cases, they found that stereotypically Black criminal offenders were more likely to have received the death penalty compared to less stereotypically Black offenders. Interestingly, this pattern only held in cases where the victim was White. Nonetheless, these results suggest that the influence of feature-based stereotyping can be quite severe.

Summary

It should be clear that the findings reviewed in this section fall outside the predictive lens of "traditional" theoretical models of impression formation briefly outlined above. Contrary to those perspectives, they suggest (1) sensitivity to within-category feature variation in the determination of subcategory membership and (2) stereotyping and prejudice based on facial features that is independent of categorization or category membership. Furthermore, sensitivity to facial features can lead to novel outcomes such as the reduced impact of diagnostic behavioral information in the use of stereotypes. In addition, they also demonstrate that feature-based stereotyping is a highly efficient process, with potentially severe consequences for its targets. These findings lead us to conclude that a consideration of the face and the information it provides may contribute to a more comprehensive view of social perception, including its antecedents and consequences. This goal may be achieved through revisions to existing models of impression formation that reflect the perceiver's sensitivity to within-category facial feature variation and account for the independent influence of facial features apart from categorization processes.

THE ANTECEDENTS AND CONSEQUENCES OF FACIAL FEATURE-BASED CATEGORIZATION

Investigations examining the role of facial features in stereotyping, prejudice, and discrimination have contributed to increased attention to the interplay between category knowledge and facial features. When at one time the two went hand in hand, researchers are now beginning to realize that category knowledge and facial features may have independent effects on social judgment. As evidence suggesting that perceivers are sensitive to within-category variation in facial characteristics continues to mount, investigators are increasing their focus on the precursors and implications of facial feature variation for social representations. Some investigations are concerned with the implications of feature variation for categorization, while others have focused on how categorization influences perception of and memory for facial features. We now consider these lines of research.

Category Selection from Facial Cues

Social psychologists have long acknowledged that, because facial features lie on a vast continuum representing a complex array of information, humans may cope with this complexity through categorization by age, race, and sex (Allport, 1954; Fiske, 1998; Fiske & Taylor, 1991). Categorization effectively minimizes the significance of within-category variation, thus making the information provided by features more manageable. There is some question, however, about which features perceivers use to create these categories. Most researchers rely on lay conceptions that specify the features that will lead us to categorize a face as old or young, Black or White, male or female. Very few researchers have sought to verify these lay conceptions empirically. Brown, Dane, and Durham (1998) asked a multiple-race sample of participants to rate the importance of several dimensions of nine facial features (eyes, nose, hair, cheeks, forehead, mouth, skin color, ears, and eyebrows) when deciding whether another person belonged to a racial group. Except for skin color, participants rated the importance of the color, shape, placement on the face, and size of each feature. The researchers manipulated the presumed race/ethnicity of the target of judgment. Participants were asked to rank the features that would be important toward determining whether a person was African, Asian, Caucasian, Hispanic, and a fifth condition where the racial/ethnic group was left unspecified. In the unspecified condition, participants were asked to rank the importance of the features in determining a person's race in general. Overall, participants emphasized skin color among other aspects of phenotypic appearance in determining racial group membership, followed by hair, eyes, nose, mouth, cheeks, eyebrows, forehead, and ears. While the initial analyses examined each racial category in isolation, subsequent analyses used the race-unspecified target as a basis of comparison for each racial category. While skin color remained an important feature overall, the importance of other features varied as a function of the racial category. For Africans, hair, nose, and mouth were rated as more important, while eyes were rated as less important. For Asians, eyes were the distinctive feature. For Hispanics, eyebrows were the distinctive feature. Caucasian targets were rated equally to the race-unspecified target, suggesting that failure to specify race leads to the assumption that the target is White. These data suggest that skin color is the most distinguishing feature for racial catego-
cies, but specific racial groups have characteristics that set them apart from others.

Additional evidence suggests that the relative importance of features may depend on the race of the respondent. Deregowski, Ellis, and Shepherd (1975) used a slightly different methodology to investigate attention to facial features. These researchers examined in-group and out-group descriptions of Black and White faces. Black (Kenyan) and White (British) teens were asked to give a verbal description of faces of Black and White males and females. Once coded, these descriptions revealed that neither Blacks nor Whites were likely to mention skin color, although Whites were more likely to mention race when looking at Black faces. Blacks were more likely to mention the outline of the face, hair position, eye size, eyebrows, chin, and ears, while Whites focused on hair texture, hair color, and eye color. There were no significant differences in mentioning features as a function of the race or gender of the face.

These data are largely consistent with many lay conceptions of the relationship among various facial features and racial category membership. However, it is not necessarily the case that lay theories about the features that determine category membership map onto the actual features that people use. To our knowledge, only one study has attempted to delineate the importance of phenotypic facial features for social categorization, independent of lay conceptions. Brown and Perrett (1993) explored the facial features that are used to determine gender. Through morphing, they created prototypic images of male and female faces without hair. In the first part of the study, individual features and pairs of features from these prototypes were presented in isolation to a sample of participants for the purpose of sex categorization. They found that, based on categorization tendencies, the brows and eyes—in combination and each alone—carried the most gender information. These were followed by the jaw, chin, nose and mouth, and mouth. In the second part of the study, participants viewed whole prototypic faces that had been substituted with parts of faces from the other gender prototype. An examination of these feature substitutions on categorization revealed that the effect of feature substitutions were fairly uniform for male and female faces. The categorization of male faces was disrupted most when a female chin, brows and eyes, or jaw was included in the images. Categorization of female faces was disrupted when the substitution was a male jaw or brows and eyes. The sex of the participant played a role in these data as well. Male participants were much more restrictive in their criterion to classify a face as male than female participants. Males required a greater degree of masculinity to categorize a face as male as compared to females.

There is a great deal of work that could be done to explore the role that facial features play in categorization. Through their focus on the relative importance of individual facial features, the work by Brown and colleagues (1998) as well as Deregowski and colleagues (1975) provide some clues to the lay conceptions governing the relationship between facial features and category membership. Unlike the previous studies, the investigation by Brown and Perrett (1993)
does not tell us the specific nature of the individual features that are associated with male and female faces. Rather, it provides information about the regions of the face that are most used by participants in determining gender. It is unclear as to whether these regions map onto what participants would report if given the opportunity. The imaging work described here suggests at least some convergence, but some divergence, between lay conceptions of the relationship between facial features and category membership. Rather than dismissing lay perspectives entirely, it may be important to understand them and how they may deviate from the actual processes underlying categorization judgments. Much like previous researchers who pointed out the failure of introspection with respect to understanding the influences on behavior (Nisbett & Wilson, 1977), accurate knowledge of the features that influence our judgments of category membership, or knowledge of how features may affect our judgments directly, could be useful in helping to counteract any undesirable influences. However, we have seen that knowing is only half the battle. It is not clear that even explicit knowledge of the potential of features to influence judgments can mitigate their impact (e.g., Blair, Judd, & Fallman, 2004). More explicit understanding of the processes by which features impact judgments may lead to more successful interventions.

Facial Features and Category Ambiguity: Distortions in Perception and Memory

Rather than exploring facial features as antecedents to categorization, several researchers have explored the relationship between features and categories through investigations of the role that categorization may play in the subsequent recollection of facial features. For example, Corneille, Huart, Becquart, and Bréard (2004) examined the impact of categorization on the recognition of ethnically ambiguous faces. White participants studied a morphed target face that reflected 30%, 50%, or 70% of a particular ethnicity on the Caucasian-North African or the Caucasian-Asian continuum. Category information was introduced through an ethnically distinctive name and stereotypic behavioral profile immediately after studying the target face (Experiment 1) or through a category label associated with the target face during the study phase (Experiment 2). After a distracter task, participants were asked to identify the correct face presented earlier from among the targets and a series of foils, also morphs, representing 10% and 20% deviations from the target in each direction on the continuum. Results revealed that participants selected foils that were consistent with their initial categorizations.

Results from a second identification task conducted 1 week after the original session also showed a pattern of assimilation. However, assimilation to the experimenter-provided categorization did not occur for the most racially ambiguous faces (50% morphs). The authors suggest that this may have occurred because, in general, the category information associated with the highly ambiguous faces did not reflect participants’ spontaneous categorizations of the faces.

This overall pattern was partially supported in another set of experiments examining moderately and highly ambiguous faces. Huart, Corneille, and Becquart (2005) used a similar methodology to examine gender ambiguity and found that the recollection of moderately ambiguous faces was distorted toward the typical category member. However, contrary to the finding with ethnicity, recognition of highly gender ambiguous faces that were presented along with categorization cues (first names) was biased toward the category suggested by the cue (Experiment 2). In a third experiment, they determined that this effect took place during encoding of the face: when the names were presented after the initial presentation of the face (during the recognition task), the gender of the name did not influence the choice of distracters. These studies demonstrate that perceiver’s knowledge of the features associated with categories can result in the distortion of ambiguous faces in memory, particularly when category information is activated while a face is encoded.

As we have seen in other areas of facial feature processing, individuals may differ in their susceptibility to feature distortions in memory. Eberhardt, Dasgupta, and Banaszynski (2003) demonstrated that category knowledge, paired with individual differences in implicit theories (Levy & Dweck, 1998), can influence memory for faces and facial features. In two studies, White participants were presented with faces morphed from Black and White males. Some versions of each face (the targets) were racially ambiguous, while other versions (the foils) were decidedly either Black or White. Participants studied the ambiguous target photographs, then some demographic information about each person pictured. Embedded in this information was a manipulation of the photographs’ apparent race (Black or White) introduced through a category label. Participants were also assigned to conditions according to whether they had been previously identified as an entity theorist or an incremental theorist. Following a second look at the face and a distracter task, participants were presented with two foils, one Black and one White, selected from the same continuum as the target face. The participants’ task was to determine which face had been presented. In fact, neither face had been presented. Results from both studies revealed that en-
These findings suggest that distortions in the perceived skin tone of a photograph that had been presented with a news story was in-

White comparison face. The perceived race of the target face was varied as a function of exposure to the primes. Those exposed to the stereotypical and two that were less stereotypical. The results revealed that participants' choices of Black faces during the recognition task varied as a function of exposure to the primes. Those exposed to the crime-related primes were more likely to choose stereotypically Black distracters as compared to those exposed to the primes unrelated to crime. Further supporting the role of stereotype activation on judgments of faces, Eberhardt and colleagues demonstrated that a separate sample of police officers from the same population reported that high stereotypic Black faces looked more like criminals as compared to low stereotypic Black faces (2004, Experiment 5).

Similarly, Oliver, Jackson, Moses, and Dangerfield (2004) found that White participants' memory for the race-related facial characteristics of a photograph that had been presented with a news story was in-

fluenced by the stereotypicality of the story. Participants were presented with several news stories, including one story embedded with a composite photograph of a Black male. Four versions of that story varied with respect to its stereotypic association with Blacks and whether or not it described a crime. Participants were asked to read the stories and later completed a memory task. Among these was a face reconstruction task, in which participants used a computer program to reproduce the face of the Black male that had been presented with the story of interest. Based on pretest ratings, that photograph had been constructed with features (noses, mouths, and skin tone) that hovered around the midpoint of the continuum between Afrocentric and Eurocentric features. The memory task revealed a bias in participants' memory of that face. Participants who read stories about violent and nonviolent crime constructed faces that were more Afrocentric than the original face, while participants reading about noncrime-related stories did not, regardless of their stereotypicality.

In addition to the activation of category knowledge, single stereotype features of a face can affect memory for other stereotype-relevant features of the face. For example, MacLin and Malpass (2001, 2003) identified hairstyle as a feature that can help participants to disambiguate the race of a face. They presented participants with ambiguous race faces—hairless faces with features that overlapped perceived Hispanic and Black racial categories (dark eyes, broad nose, and full lips). By varying the type of hairstyle on these faces, they not only changed the perceived racial category of these faces but also influenced perceptions of other characteristics. Faces presented with a stereotypically Black hairstyle were perceived as having a darker complexion, deeper eyes, a narrower face, and a wider mouth than faces presented with a stereotypically Hispanic hairstyle.

Similarly, the context in which a face is presented can affect the perception of stereotypic features. Levin and Banaji (2006) found evidence for distortions in the perceived lightness and darkness of Black and White faces driven by conceptual knowledge among participants. Across three experiments, a majority White sample of participants was required to match the brightness (skin tone) of a target face to that of a Black or White comparison face. The perceived race of the target face was varied through the presentation of phenotypically Black and White faces (Experiment 1) or line drawings (Experiment 3) or phenotypically ambiguous faces labeled as Black or White (Experiment 2). Using a technique where participants could adjust the brightness of a face or designated sample by using key presses, participants were more likely to match Black faces to darker comparisons than White faces.

These findings suggest that distortions in the perceived skin tone
FACIAL CUES

and other facial features may reflect a top-down process. Changes in the perceived category membership of a face appeared to activate associations with typical members of that category and created distortions toward stereotypical values on category-relevant dimensions. These studies demonstrate that category information can be activated through the introduction of a category label, a single category-defining feature, the presence of multiple stereotypical facial features, or (to a lesser extent) a judgment context that reflects a stereotypic trait. Furthermore, they provide some evidence that implicit theories may play a role in determining “objective” perception. The results also converge with research suggesting that other aspects of conceptual knowledge such as perceived facial affect and implicit racial prejudice (Hugenberg & Bodenhausen, 2004) and explicit racial prejudice (Blascovich, Wyer, Swart, & Kibler, 1997) play a role in the categorization of racially ambiguous faces. However, this conclusion should be regarded as tentative. In some investigations, an individual’s prejudice level does not contribute to biased perceptions of facial features (Levin & Banaji, 2006; Eberhardt et al., 2003).

Summary

These studies suggest a reciprocal relationship between facial features and social categories. Facial features contribute to the determination of category membership, and category information can distort the perception and recollection of facial features. In addition, these processes are influenced by several factors including the category membership of the perceiver, implicit theories, and (perhaps) prejudice level. More to the point of this chapter, many of these findings reflect questions that might not have been asked from the strict perspective of traditional models of category representation and impression formation; models that neglect the role of facial features in social perception. We now describe a model that attempts to accommodate the findings considered to this point.

EXPLAINING FACIAL FEATURE BIASES

Despite the shortcomings of mainstream models of impression formation that underemphasize the information that can be gained from facial features, we have maintained that these frameworks simply require “tweaking” to begin to address the influence of facial characteristics on social judgments (Maddox, 2004; Maddox & Gray, 2002; Maddox & Chase, 2004). Maddox (2004) outlined a model of racial phenotypicality bias in an effort to align more traditional findings accounted for by models of impression formation with evidence that perceivers are sensitive to within-category variations in facial phenotypic appearance (see Figure 9.1). While that discussion focused on race, this model is easily expanded to include any basis of category membership that is informed by facial features (e.g., ethnicity, gender, age, sexual orientation). The model, described briefly here, incorporates suggested revisions to traditional models of person perception (Blair et al., 2002; Maddox & Gray, 2002; Zebrowitz, 1996). Processing begins with the identification of a person’s physical attributes that act as cues to salient category dimensions such as age, sex, and race. At this stage, the nature of feature processing diverges into two routes of information processing that operate simultaneously and largely independently.

The Category-Based Route

The first is a category-based route, as proposed by Maddox and Gray (2002), based on traditional approaches to social representation and judgment (Brewer, 1988; Fiske & Neuberg, 1990). Through this route, processing of the target’s phenotypic features results in racial categorization. This categorization can be based on either a single salient feature (e.g., skin tone) or a global assessment of multiple features (e.g., Afrocentricity). At this point, the individual may be placed into a relevant subcategory as a function of racial phenotypicality (e.g., light-skinned or dark-skinned), depending on the perceiver’s conceptual framework. Only salient subcategory representations may guide the process of categorization. Subcategory use is more or less likely, depending on person characteristics or contextual cues present in the judgment context (Maddox & Chase, 2004). Once a fit between the target and the

(sub)category membership is established, associated stereotypes or prejudices (Maddox & Gray, 2002) may be used in interpersonal judgments.

The Feature-Based Route

The second route is feature-based, influencing social perception apart from the traditional range of category-based processing. This route employs direct associations between phenotypic and stereotypic traits (Blair et al., 2002) or prejudiced affect (Livingston & Brewer, 2002). These associations may be learned over time or may reflect innate knowledge of social information that may be overgeneralized to other individuals with similar features (Zebrowitz, 1996). An important aspect of this route is that phenotype continues to influence target judgments in situations even when racial categorization overrides within-race variations through the category-based route (Blair et al., 2002). Furthermore, the information that features convey will be applied regardless of the target’s racial category membership (Blair et al., 2002; Secord, 1958; Zebrowitz, 1996) and is less subject to conscious control (Blair et al., 2005).

The Role of Conceptual Knowledge

The model also recognizes varieties of conceptual knowledge that may guide the processing of target attributes through both the category-based route and the feature-based route. Possibilities include metaphorical associations with various colors (Secord, 1958), early childhood experiences with lightness and darkness (Williams, Boswell, & Best, 1975), essentialist beliefs (Haslam, Rothschild, & Ernst, 2002), implicit causal theories (Medin & Ortony, 1989), cultural standards of physical attractiveness (Breland, 1998), and beliefs about the relationship between physical features and personality (Livingston, 2001). Each of these and other factors may contribute to category-based and/or feature-based judgments.

CONCLUSION

Our goal in this chapter is not to suggest that category-based accounts of stereotyping and prejudice developed through studies focused on behavioral variability among social targets are uninformative. To the contrary, categorization may very well override the significance of within-category facial variability in many, perhaps even most, situations. Instead, we maintain that these views are unable to deal with the complex nature of social perception and particularly the indirect and direct contribution of facial features to social stereotyping, prejudice, and discrimination. The model we concluded with here represents an attempt at integrating recent research examining facial features with traditional approaches focused on behavior in the realm of racial stereotyping and prejudice. As our review highlights, the landscape of face prejudice research is dominated by investigations of race. However, similar attempts at integration may focus on any other basis of categorization that is informed by facial cues. Hopefully, the work described here will represent the beginning of a sustained empirical emphasis on the face and all of the social information that it affords.

REFERENCES


