

# Constructing Race: How People Categorize Others and Themselves in Racial Terms

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## Abstract

Racial categorization is a ubiquitous phenomenon in our judgments and perceptions of ourselves and others. Decades of research in social psychology have shown the complexities of this process and well-equipped researchers have tackled the nuances of categorical judgments of race. The current chapter reviews some of the history and recent developments in the study of predictors and determinants of racial categorization, with a special emphasis on the factors that can sway categorizations of racially ambiguous targets. Some of the factors addressed include target characteristics (e.g., racial phenotypicity and ancestry), contextual elements (e.g., stereotypical cues), and observer characteristics (e.g., personality, familiarity with other races, and developmental maturity). We conclude with an exploration of some of the exciting methodological and theoretical frontiers, providing our perspective on the future of the field.

In 2015 Rachel Dolezal rose to pop culture fame (however ephemeral) after her parents “outed” her as a White person “passing” for Black (CNN, 2015). Her straight hair curled, and her fair skin heavily tanned, Dolezal strongly identified as Black and was deeply involved with the African American community. However, after her parents’ revelation, Dolezal was widely criticized for cultural appropriation and deception. While the current chapter deals only with descriptive and predictive (rather than moral and cultural) aspects of racial identity, the debate around the construction of race sparked by a case like Dolezal’s highlights the complexity of the questions addressed by the psychological literature on this topic. In the current chapter, we will discuss some of the factors that shape how individuals categorize others and themselves by race, as well as some of the sociocognitive processes (e.g., attention, memory) involved in racial classification, with a particular emphasis on issues of racial ambiguity.

Throughout the current chapter, we define racial categorization as the classification of individuals on the basis of racial features or their correlates (e.g., ancestry). In this context, racial features are visible characteristics that have been historically and culturally associated with distinct human subpopulations. These categorizations can be made by observers about target others, or by targets about themselves (i.e., self-categorization). Importantly, our approach does not differentiate ethnic from racial groups, as long as the former have perceptually distinct features and/or are categorized and constructed as races by members of the studied culture.

The concordance (i.e., agreement between targets’ self-categorizations and observers’ categorizations of the target) and determinants of racial categorization have been topics of study in social psychology since at least the 1940s, when the targeting of Jews by the Nazi regime prompted researchers to ask whether observers could concordantly categorize individuals with ambiguous racial features (e.g., Allport & Kramer, 1946). Over the course of the 20th century, researchers tackled

many questions related to racial categorization, from the role of specific facial features (Goodman, 1952) to the influence of the observer's racial identity (Lent, 1970). More recently, the growing multiracial population in the United States (U.S. Census Bureau, 2011) and around the world (e.g., UK: Office for National Statistics, 2013) has renewed scholarly interest in the role of racial cues in racial categorizations. We begin this chapter by discussing the main predictor of racial categorizations by observers: racial phenotypicality (i.e., how typical of a race a target's physical traits are), and then move on to explore the impact of racial ancestry and some of the main cues that can shift phenotypicality-based judgments. In the next section we discuss important individual differences among observers that can shift racial perceptions, followed by a discussion of predictors of self-categorizations. Finally, we explore a few recent methodological developments and emerging lines of inquiry in the domain of race categorization.

## 24.1 RACIAL PHENOTYPICALITY

Central to the concept of race is the idea of differences in appearance (phenotypicality) between human groups (e.g., Sen & Wasow, 2016), thus it is no surprise that physical features are one of the strongest predictors of racial categorizations. Most often researchers manipulate the racial phenotypicality of target faces with facial morphing software, which combines different racial features into a single face. Through this technique, e.g., Skinner and Nicolas (2015) found that as phenotypicality for a particular race (e.g., Black) increases, categorization as that race becomes more likely. Yet changes in phenotypicality lead to changes in categorizations only after a particular threshold is crossed, thus this is best characterized as categorical perception (Levin & Angelone, 2002). For example, Levin and Angelone (2002) manipulated target phenotypicality on a scale ranging from 0% Black to 100% Black, and found an average threshold of approximately 50%, such that targets who are less than 50% Black will probably not be categorized as Black, and those who are more than 50% Black will probably be categorized as Black. Thus, two targets who differ by a set degree of phenotypicality (e.g., 20%) would probably be categorized as the same race if they are both above or both below the threshold (e.g., a 70% Black and a 90% Black face would both be categorized as Black), but would probably be categorized as different races if they fell on opposite sides of the threshold (e.g., a 40% Black face would not be categorized as Black but a 60% Black face would). Exactly where this threshold lies in a phenotypicality continuum varies across studies, depending on several factors (e.g.,

stimulus set, observer individual differences), many of which will be discussed in the following sections.

Racial phenotypicity is frequently broken down into two components: skin tone (i.e., pigmentation and lightness of skin) and facial physiognomy (i.e., morphological features such as size of nose and lips, bone structure, etc.). Although some reports have presented evidence for an independent and larger effect of facial physiognomy (vs. skin tone) on judgments of racial typicality (Brooks & Gwinn, 2010), other studies provide evidence for a larger role of skin tone on judgments of race (Dunham, Stepanova, Dotsch, & Todorov, 2014), or an interactive relationship between skin tone and physiognomy (Willenbockel, Fiset, & Tanaka, 2011). For example, the influence of skin tone on categorizations increases when facial physiognomy is ambiguous (Willenbockel et al., 2011), when faces are inverted (Willenbockel et al., 2011) or presented in color (vs. grayscale; Stepanova & Strube, 2012), and when observers are high in racial prejudice (Stepanova & Strube, 2012). Future studies on the interaction between skin tone and facial physiognomy may prove useful in understanding how these cues might potentially interact to lead people to categorize targets as multiracial, Hispanic, or other racially ambiguous groups.

Existing theories on racial categorization argue that racial categorizations are triggered more easily by the presence of outgroup (vs. ingroup) racial features. For example, Levin (1996) found that Whites categorize Black faces faster than White faces and argued that this effect was present because own-race specifying information serves as a default or baseline for making racial judgments, thus making other-race features more salient. Importantly, the relative size of racial groups also plays a role in which racial features are salient, because minorities are more likely to encounter majority targets their baseline for racial judgments is blurred. Thus, features associated with minority groups are more likely to be coded as being racial by majority group members but not by minority group members (Levin, 1996). Halberstadt, Sherman, and Sherman (2011) proposed that the tendency among majority group members in the US to classify mixed-race targets as members of the lower status racial group (i.e., hypodescent) is a result of learning processes related to salient features of racial minority groups. Specifically, they argue that individuals learn the features of their own race first, given early exposure in childhood to ingroup members, and subsequently learn who are members of other races by attending to the physical features that distinguish them from the already learned ingroup race. The authors further argue that this attention to other-race features can result in majority group members judging individuals with both majority and minority racial feature as belonging more to the minority than the majority race. Thus, hypodescent may result from variations in familiarity with

members of other races during early development, even in the absence of racial status differentials.

Research on the timecourse of the neural processing of faces is perhaps the best illustration of the relevance of racial phenotypicity in person perception. The bulk of this research uses measures of electrical potentials in the brain, known as event-related potentials (ERPs), elicited by facial stimuli. ERP data can be used to understand neural processing by examining negative (e.g., N100) and positive (e.g., P200) deflections in the waveform elicited by a stimulus within milliseconds after presentation. These deflections are known as ERP components, with individual components (e.g., N100, P200) having been linked to specific cognitive processes. In the race categorization literature, a number of components have been associated with race-related facial characteristics, including the N100, N200, and P200, which are all implicated in selective attention processes (e.g., Luck & Hillyard, 1994). In one of the first studies on the topic, researchers found variations in attention-related activity to faces of different races, with larger N100s (a negative deflection in the waveform occurring approximately 100 ms after stimulus onset) in response to racial outgroup faces than racial ingroup faces (Ito & Urland, 2003). Researchers have also found larger P200s (a positive deflection in the waveform occurring approximately 200 ms after stimulus onset) in response to racial outgroup faces, followed by larger N200s (a negative deflection in the waveform occurring approximately 200 ms after stimulus onset) in response to racial ingroup faces. This fluctuating pattern of neural response probably reflects a process in which attention moves from salient outgroup features to individuating features associated with the racial ingroup (Ito & Bartholow, 2009).

These social neuroscience results have been replicated and extended to further support the unavailability of differential attention to racial cues and to illuminate how differences in attention to race relate to explicit racial categorizations. For example, Kubota and Ito (2007) found that a larger N200 response to White (vs. Black) faces predicted faster categorizations of Black (vs. White) faces. Given that larger N200s are associated with greater attention to individuating features (i.e., noncategorical/nonracial features unique to the particular stimulus face; Tanaka, Curran, PorterWeld, & Collins, 2006), this finding suggests that observers pay less attention to individuating aspects of racial minority (Black faces) relative to racial majority (White faces) targets. These findings are in line with previously discussed theories of the salience of minority features (e.g., Levin, 1996). Furthermore, this increased attention to the racial features of Black faces results in faster racial categorizations of Black faces compared to White faces. However, the relationship between early attentional processes and categorizations might be more complex for racially ambiguous targets. For example,

Willadsen-Jensen and Ito (2006) found that among White participants, Black-White and Asian-White mixed-race faces elicited smaller P200s and larger N200s than racial minority (i.e., Asian and Black) faces, but did not significantly differ from racial majority (ingroup) faces, suggesting that mixed-race faces were processed similarly to racial majority faces in early attention. Furthermore, unlike monoracial faces (e.g., Kubota & Ito, 2007), early attention to ambiguous mixed-race faces did not predict categorizations. Given evidence for biases at the categorization level (where mixed-race targets tend to be categorized as the minority), the lack of early neural differentiation between ambiguous and majority faces points at a gap in understanding the timecourse of the categorical processing that frequently culminates in hypodescent. Nonetheless, in general, these studies support the notion that attention to race is automatic, occurring within milliseconds of encountering a face, and predictive of subsequent racial categorizations. We expect future studies to clarify the relationship between early attention and categorization of racially ambiguous targets and how it relates to previous findings using monoracial faces.

Even within racial categories, physical features play an important role, such that variations in features can often explain stereotyping and evaluations of targets. For example, social psychologists have found that among targets who are categorized as Black, those with higher Black phenotypicality are evaluated more negatively (Livingston & Brewer, 2002) and attributed more racial stereotypes (Blair, Judd, Sadler, & Jenkins, 2002). Maddox (2004) proposed a model of phenotypicality bias, arguing for two routes of racial impression formation: a categorical route, wherein evaluations are affected by negativity associated with discrete categories (e.g., Black), and a feature-based route, wherein evaluations are affected by negativity associated with continuously varying racial features (e.g., skin tone). Maddox argues that both can uniquely affect judgments of targets at different levels of racial phenotypicality. These findings have important implications for our understanding of the role of phenotypicality as a determinant of racial categorizations and target fit within the boundaries of a particular racial category.

In a 2015 study on the joint influence of ancestry and phenotypicality on judgments of mixed-race targets, Skinner and Nicolas found that, although ancestry independently predicted categorizations and racial typicality judgments, phenotypicality was the stronger predictor. Specifically, they found that for targets with mixed features and ancestry, more Black features predicted a larger number of Black categorizations. Additionally, phenotypicality predicted stereotyping and perceptions of racial discrimination. Specifically, low Black phenotypicality targets (who were frequently categorized as White, rather than

Black), were perceived to be warmer and more competent than targets that were higher in Black phenotypicality. Furthermore, given identical scenarios of workplace harassment, the low Black phenotypicality target was seen as less discriminated against (vs. targets with more Black features).

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## 24.2 ANCESTRY

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Historically, in the US, ancestry has been central in informal and legal definitions of race. In the early 1800s, the US had intermediate categories for those of mixed race, e.g., considering individuals to be “Mulattos” if they had at least one-quarter Black ancestry (Hickman, 1997). Starting in the early 1900s this was legally expanded into the one-drop rule, which defined as Black any person with at least “one drop of Black blood” (Hickman, 1997). Although no longer part of legal or formal definitions, this conception of mixed-ancestry individuals as more similar to their non-White ancestors (relative to their White ancestors) survives to some extent today in the form of hypodescent (e.g., Ho, Sidanius, Levin, & Banaji, 2011). Thus, hypodescent has been argued to be a complex phenomenon potentially resulting not only from the previously discussed salience of minority features during racial learning (Halberstadt et al., 2011), but also from motivated accounts and cultural legacies of racial discrimination based on blood quantum (Ho, Sidanius, Cuddy, & Banaji, 2013). Of note, the importance of ancestry in making racial and ethnic categorizations is not unique to the US and is in fact much more important in other parts of the world (e.g., Korea; Shin, 2006).

As previously mentioned, ancestry research has been pivotal in examinations of categorization biases such as hypodescent. For example, targets described as mixed-race (Black–White or Asian–White), based on the racial identities of their four grandparents, tend to be categorized as racial minority (Black or Asian, respectively) rather than White (Ho et al., 2011; study 2). Relatedly, targets with higher minority ancestry are judged as more typical of the minority category (e.g., Sanchez, Good, & Chavez, 2011). Peery and Bodenhausen (2008) found that mixed-race faces were more likely to be categorized as Black (vs. White, Black and White, or Other) when their ancestry was described as mixed-race (and when they were said to come from a racially mixed social environment). These findings suggest an important role of mixed ancestry and cultural background on hypodescent biases in the categorization of faces. In a second study, Peery and Bodenhausen found that when participants were provided with a Multiracial category (instead of having to categorize the target as both Black and White to indicate

multiraciality as in their first study), the frequency of Multiracial categorizations for ambiguous faces increased, especially when information about mixed-race ancestry was provided. Thus, in their studies, ancestry information moderated the effect of the ambiguous feature information provided by the mixed-race face. However, it is important to note that ancestry information does not always moderate the impact of phenotypicality. [Skinner and Nicolas \(2015\)](#) found that for mixed race targets, the effect of Black phenotypicality was not moderated by the proportion of Black ancestors. [Skinner and Nicolas \(2015\)](#) also found that phenotypicality was prioritized by observers, such that phenotypicality had a significantly larger impact on perceptions and categorization than ancestry. Nonetheless, we believe that ancestry information plays an important role in placing judgments of racially ambiguous faces in a context of multiracialism, such that it makes multiracial (vs. monoracial) categorizations more accessible. In addition, ancestry might be of particular relevance in categorical biases such as hypodescent, a possibility that is discussed in the following section.

### 24.3 CUE DISAMBIGUATION

Ancestry information is not the only cue that might moderate the effects of phenotypicality on racial categorizations. A growing literature has explored how situational cues can guide racial judgments, especially in terms of disambiguating the category of mixed-race targets. In one of the first studies on the topic, [Maclin and Malpass \(2001\)](#) presented participants with racially ambiguous faces and manipulated whether the face was presented with a stereotypically Black or stereotypically Hispanic hairstyle. Their results showed a movement towards the stereotypical cue, such that ambiguous targets were judged to be Black more frequently when shown with stereotypically Black hairstyles, and as Hispanic more frequently when the hairstyle was more stereotypically Hispanic.

People may rely on context cues when processing ambiguous faces, such that ambiguous faces may be assimilated to the race of the unambiguous faces in the environment (i.e., target categorization moves towards the race of the context faces) or contrasted against the race of the unambiguous faces in the environment (i.e., target categorizations move away from the race of the context faces; [Webster, Kaping, Mizokami, & Duhamel, 2004](#)). To examine this, [Rhodes, Lie, Ewing, Evangelista, and Tanaka \(2010\)](#) presented White participants with a task-irrelevant monoracial (Asian or White) face followed by an Asian–White mixed-race face to be categorized. The authors found a contrast effect on categorizations, such that mixed-race faces that were

preceded by a monoracial face of one race (e.g., White) were more likely to be categorized as the other race (e.g., Asian).

Consistent with Rhodes and colleagues' (2010) findings, Willadsen-Jensen and Ito (2006) found that White participants more frequently categorized Asian–White mixed-races faces as Asian (vs. White) when presented in the context of White (vs. Asian) faces. A contrast effect was also observed in participants' neural responses, such that Asian and Asian–White targets evoked larger late positive potentials (LPPs; a general term for a positive deflection late in the waveform) when presented in the context of White (vs. Asian) faces. Furthermore, White and Asian–White faces evoked larger LPPs when in the context of Asian (vs. White) faces. In a follow-up study, Willadsen-Jensen and Ito (2008) found a nearly identical contrast pattern in neural responses and categorizations among Asian American participants, providing additional evidence for the generalizability of these findings. On the other hand, there is also evidence that ambiguous faces are sometimes assimilated with the other faces in a given context. Sun and Balas (2012) found that ambiguous faces were categorized as White more often when surrounded by inverted White faces (thus an assimilative effect), but not upright White faces or Black faces (either inverted or upright), compared to a control condition with no context faces. In a second experiment, they manipulated the facial physiognomy and skin tone of the context faces. They found that the facial physiognomy of the surrounding faces had a contrast effect on categorizations (e.g., if surrounded by faces with Black physiognomic features, the target was more often categorized as White), but that skin color was assimilative (e.g., if surrounded by faces with light skin tone, the target was more often categorized as White). These studies provide insights into the way that other faces within a given context, which are often present in everyday perception, influence categorizations of race. These findings on contrast and assimilative effects highlight the complex ways in which comparisons to other faces sway racial judgments, particularly when it comes to racially ambiguous or mixed-race faces.

Some of the effects of cues used in disambiguating racially ambiguous faces are moderated by individual differences among observers. For example, the extent to which people believe that personality traits are unchanging and highly predictive of a person's underlying essence (Eberhardt, Dasgupta, & Banaszynski, 2003) moderates the effect of labeling (e.g., as Black or White) a racially ambiguous face. Specifically, for those who believe that personality traits are fixed features of individuals, the effect of labels is assimilative (e.g., Black labels lead participants to misremember faces as more phenotypically Black). In contrast, for those who believe that personality traits are not fixed features, labels create a contrast effect (e.g., Black labels lead participants to

misremember faces as more phenotypically White). This finding speaks to the complexity of racial categorizations, especially for ambiguous targets, as not only target characteristics (e.g., ancestry) and external cues (e.g., faces in the surrounding of the target) can sway racial judgments, but also the characteristics and experiences of the observer can interact with these factors to predict racial categorizations. This topic is further explored in subsequent sections where the role of observers' personality, motivation, and familiarity in categorizations is discussed.

Faces in the surrounding area are not the only contextual cues that influence assimilation. A number of studies have shown that non-phenotypical, stereotype-consistent cues can shift categorizations of multiracial and racially ambiguous targets towards the stereotype-consistent racial categorizations. Cues that influence assimilation include stereotypical names (Hilliar & Kemp, 2008), images of sceneries stereotypical of a race (e.g., a city with Chinese street signs for Asian categorizations; Freeman et al., 2015), demographic information (e.g., parent's education level and neighborhood socioeconomic status; Young, Sanchez, & Wilton, 2015), and attire (through high- or low-status attire; Freeman, Penner, Saperstein, Scheutz, & Ambady, 2011).

Willadsen-Jensen and Ito (2015) found that for White participants neural processing of racially ambiguous faces was affected by racial labels (i.e., Black or White). Specifically, faces that were preceded by the label "Black" elicited larger P200s and smaller N200s than faces preceded by the label "White," consistent with their findings for unambiguous Black and White faces. Thus, these differences in brain activity were in line with an assimilative effect of labels, such that ambiguous faces were processed like monoracial faces that matched the label. These findings were supported by behavioral evidence from an implicit attitude (i.e., obtained through indirect measures, hard to control) task. Specifically, they found that when ambiguous faces were labeled as Black they elicited implicit anti-Black bias that was indistinguishable from monoracial Black faces. This last finding, while not directly related to categorization, provides insight into the processing and consequences of categorical judgments and perceptions.

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## 24.4 INTERSECTIONALITY

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Most research on racial categorizations has either collapsed across target gender (e.g., Peery & Bodenhausen, 2008) or focused exclusively on male targets (e.g., Skinner & Nicolas, 2015). However, as indicated by the literature on intersectionality (i.e., the conjunction of two relevant social categories), multiple group memberships may sway racial categorizations. For example, gendered race theory (Johnson,

Freeman, & Pauker, 2012) suggests that, compared to Whites, the female category is more strongly associated with Asians and the male category is more strongly associated with Blacks. Johnson et al. (2012) studied this effect by digitally manipulating both masculinity/femininity and racial phenotypicality in an independent manner (as determined by algorithms that extract multidimensional facial features from hundreds of faces of different races and genders). In these studies, the authors measured both sex categorizations and their facilitation (i.e., increase in categorization speed) as a function of phenotypicality. They found that, indeed, as Black phenotypicality increased targets were more likely to be categorized as male and as Asian phenotypicality increased targets were more likely to be categorized as female. Moreover, as Black phenotypicality increased male categorizations were made more quickly and as Asian phenotypicality increased female categorizations were made more quickly. Furthermore, the effect has been found to be bidirectional. Carpinella, Chen, Hamilton, and Johnson (2015) found that digitally increasing masculine facial features of Black–White faces increased categorization speed and the likelihood of Black categorizations for racially ambiguous faces. On the other hand, feminine facial features increased the likelihood of Asian categorizations for Asian–Black targets, but decreased the likelihood of Asian categorizations for Asian–White targets and increased the time needed to make Asian categorizations. These findings suggest that the association between female and Asian phenotypicality might not be as strong as the association between male and Black phenotypicality (when contrasted against the White category). This line of research highlights that physical and stereotypical cues for gender and race overlap, interacting with each other to affect racial categorizations.

Although not a stable social category, emotional cues also interact with race to influence categorizations. For instance, Hugenberg and Bodenhausen (2004) found that among White participants, racial prejudice predicted categorization of hostile (but not happy) racially ambiguous faces as Black (vs. White). Hutchings and Haddock (2008) extended these results by providing evidence that racial categorizations and emotional cues were related to implicit racial bias. Specifically, they found that White individuals high in implicit racial bias were more likely to categorize ambiguous faces as Black, particularly if they had angry expressions. Furthermore, they found that racially ambiguous faces that were categorized as Black (vs. White) were perceived as angrier, suggesting that not only do angry emotional cues lead to more Black categorizations, but that if a face is categorized as Black it is also perceived to be angrier. Subsequent studies have shown that this pattern generally applies to outgroups, such that, relative to ingroup members, outgroup members tend to be associated with anger

(Dunham, 2011). Nonetheless, these findings highlight the impact of emotion cues on the disambiguation of racial categorizations, especially when observers are categorizing racial outgroup members.

## 24.5 OBSERVER DIFFERENCES IN PERSONALITY AND MOTIVATION

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A number of studies have shown that differences in personality and motivations between observers moderate racial categorizations. Ho et al. (2013) found that a combination of high levels of social dominance orientation (SDO, defined as preference for group hierarchies and inequality; Pratto, Sidanius, Stallworth, & Malle, 1994) and threat from a low-status group (i.e., being exposed to information suggesting that racial minorities pose an economic threat to Whites) led to increased hypodescent among White observers. The authors argued that this tendency for ingroup exclusion (i.e., White participants denied ambiguous targets membership in the White group) among those who support status hierarchies reflects a motivated attempt to preserve the racial hierarchy under threat, by increasing the stringency of criteria for inclusion in the dominant category.

Conservative political ideology, a set of beliefs associated with both SDO and motivations to justify the racial hierarchy (Jost, Federico, & Napier, 2009), has also been related to racial categorizations. For example, Krosch, Berntsen, Amodio, Jost, and Van Bavel (2013) used a dichotomous racial categorization (White vs. Black) task and found that conservatives showed more hypodescent than liberals. In a second study they found that this effect of conservatism on hypodescent was mediated by opposition to equality (a subconstruct of SDO), such that conservative political ideology predicted opposition to equality, which in turn predicted increased hypodescent.

Other studies have found additional evidence for motivational differences in racial categorization. For example, Chen, Moons, Gaither, Hamilton, and Sherman (2014) found that higher levels of internal motivations to respond without prejudice (IMS, an intrinsic desire to be racially nonprejudiced; Plant & Devine, 1998) predict increased use of Multiracial labels for mixed-race faces using a White/Black/Multiracial trichotomous categorization task. Their results in relation to external motivations to respond without prejudice (EMS, an extrinsic desire to avoid expressions of racial prejudice; Plant & Devine, 1998) were mixed, but suggest that higher EMS may be related to decreased use of the multiracial category. Ho, Roberts, and Gelman (2015) identified an interaction between racial essentialism (i.e., the belief that race has

unalterable characteristics, is biological, and provides information about someone's nature; Haslam, Rothschild, & Ernst, 2000; No et al., 2008) and racial bias on racial categorization, such that among White observers with racial biases against Blacks, higher essentialism predicted increased hypodescent. Additionally, racial essentialism has been linked to an increased tendency to categorize others in terms of racial categories (vs. other social groups, such as profession), as well as increased sensitivity to racial phenotypicality cues (Chao, Hong, & Chiu, 2013). Taken together, these findings highlight the importance of understanding personality and motivational differences among observers, in addition to target and contextual characteristics, in arriving at particular racial categorizations.

## 24.6 OBSERVER DIFFERENCES IN FAMILIARITY WITH RACIAL GROUPS

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As previously discussed, attentional approaches to hypodescent (Halberstadt et al., 2011) have highlighted the role of individual and cultural differences in familiarity with racial minorities on categorizations. Specifically, research shows that observers learn who belongs to races other than their own by paying attention to the features that distinguish them from the ingroup (Kruschke, 2003). Indeed, the role of familiarization order is supported by research in which participants learned to categorize targets into one of two novel (i.e., fictional) groups. Halberstadt et al. (2011) had participants learn a number of faces that were either shown frequently ("majority faces," labeled A faces) or infrequently ("minority faces," labeled B faces). After the learning task, participants were shown ambiguous digital morphs of the learned faces, and were asked to indicate if the morphed face was an A face or a B face. Results showed that morphs were more likely to be categorized as B faces, the category learned second. In real-world settings, greater familiarity with majority (vs. minority) group members during race learning leads majority observers to pay increased attention to mixed-race targets' distinctive minority features (vs. majority features), leading to minority categorizations. According to this theory, we would expect that for racial minorities this categorical bias should be reversed (given that minority group members would typically learn majority group features second), or absent (given that racial minority group members often have exposure to both minority and majority group members throughout their lives). However, no research to date has explored the influence of familiarity with other racial groups on racial categorizations among minority participants.

Theories of categorical representations provide some additional insight into the link between familiarity and racial categories. Two of the most studied approaches to categorical representations are the prototype- (e.g., Homa, Sterling, & Trepel, 1981) and exemplar- (e.g., Medin & Schaffer, 1978) based models. The prototype-based model suggests that observer's cognitive representations are formed by creating a summary or prototype of all the cases that they have previously encoded as belonging to a category. Thus, when encountering a high Black phenotypicality target the observer might arrive at a Black categorization by determining the target is most similar to the Black prototype stored in memory. On the other hand, the exemplar-based model suggests that observers' cognitive representations are based on the memory storage and retrieval of individual cases that they have previously encoded as belonging to a category. Thus, when encountering a high Black phenotypicality target the observer might arrive at a Black categorization by determining that the target is most similar to a specific exemplar previously stored in memory as "Black." Importantly, exemplar-based models allow for more variation in the representation of a category, given that representations are based on variable cases rather than a more abstract summary (see Smith & Zarate, 1990 for more information). In the following paragraph, we discuss the role these theories of categorical representations play in linking familiarity and racial categorization.

In terms of the role of familiarity for these different models, some have suggested that the high level of exposure we have to familiar others (e.g., ingroup members) leads to more exemplar-based representations, while we may rely more on prototypes for less familiar others (e.g., outgroups; Linville & Fischer, 1993). Yet Mullen, Rozell, and Johnson (2001), for example, suggest that the use of prototypes for (racial) groups is related to group size in the general population, such that smaller groups are more salient. This attentional focus on minorities then leads to the use of prototype representations for these groups, since representations are built around abstract group membership cues rather than more individuated exemplar representations. Thus, this position suggests that both racial majority and minority members will employ prototype representations for racial minority groups. For example, Rice and Mullen (2003) found support for the size salience perspective when examining concordance in the classification of ethnic Jews (a minority group), such that categorization concordance was no better for ingroup members over outgroup members (i.e., both Jews and non-Jews did poorly in the categorization concordance of Jewish faces). However, their research is limited by a number of factors (e.g., correlational design, high racial ambiguity of targets, among others). Future research should address these limitations and continue to clarify how familiarity might influence concordance in the categorization of

ambiguous targets, shedding new light on the exemplar- versus prototype- basis of our racial representations. For example, to what extent does familiarity decrease hypodescent and increase the use of Multiracial categorizations for racially ambiguous targets?

## 24.7 THE DEVELOPMENT OF RACIAL CATEGORIZATIONS

Many researchers have sought to explore how observers learn to reason about race (e.g., [Hirschfeld, 1995](#); [Pauker, Williams, & Steele, 2016](#)), helping further our understanding of everyday racial categorization biases and processes. [Hirschfeld \(1995\)](#) published one of the first studies on the effect of ancestry and phenotypicity on racial categorizations in the US, comparing children and adults. His results suggested a strong rule of hypodescent among adults that was not reflected in young children's (second graders) responses, who categorized targets as the same race as the target's mother. However, [Hirschfeld \(1995\)](#) found that by the fifth grade children began to demonstrate hypodescent, categorizing ambiguous race targets as either Black or "something else," but rarely as White (regardless of which parent was Black or White).

In recent years, the literature on racial judgments and perceptions in children has grown considerably, often using cleverly designed indirect measurements to circumvent issues of language and cognitive maturity. For example, [Roberts and Gelman \(2015a\)](#) used a trichotomous task (White, Black, Other) to explore race categorizations among White and Black children (grouped into age ranges of 4- to 6-, 7- to 9-, and 10- to 13-year-olds) and adults. Specifically, researchers presented children with a target face (Black, White, or multiracial) and asked children to indicate which of three faces was the "same kind" as the target: a visible face of one race (e.g., Black), a visible face of the other race (e.g., White), or a hidden face (concealed by a curtain). They also manipulated whether ancestry information for the target face was provided. Their results showed that both children and adults made more concordant racial categorizations for monoracial (vs. mixed-race) targets. For participants of all races at all ages (except for Black children, who showed no bias), multiracial targets were more likely to be categorized as Black than White in the absence of ancestry information. However, this effect disappeared for children (but not adults) when mixed-ancestry information was provided, which the authors interpreted as supporting an ideological motivation by adults to engage in hypodescent that is not present in children.

In a follow-up study, [Roberts and Gelman \(2015b\)](#) used the same procedure to explore categorizations by multiracial children and adults.

They found that all participants made more concordant categorizations for monoracial than multiracial targets and that both children and adults showed hypodescent (although this was diminished when ancestry information was provided). Notably, across these studies (Roberts & Gelman, 2015a, 2015b), level of contact with members of different races affected categorization biases (e.g., multiracial children with more exposure to Whites were more likely to categorize multiracial targets as Black), highlighting the importance of interracial exposure in the development of racial categorizations.

Although there is some debate over what constitutes racial categorization for children (Pauker et al., 2016), there is evidence that infants differentially attend to race as early as 3 months of age, such that infants show a preference (i.e., look longer) for same-race faces (Bar-Haim, Ziv, Lamy, & Hodes, 2006; Hugenberg, Young, Bernstein, & Sacco, 2010). However, infants with cross-race exposure do not show an ingroup visual preference, indicating that this represents a visual preference for the familiar (Bar-Haim et al., 2006). Stronger evidence for racial grouping emerges around 6 months of age when research suggests infants are able to distinguish between members of different outgroups. Specifically, 6-month-olds that have been familiarized with faces of an outgroup (e.g., Blacks) will consider faces from a nonfamiliar outgroup (e.g., Asians) as more novel (as evidenced by looking patterns), although this ability seems to fluctuate later in infancy (e.g., 9-month-olds made broad ingroup vs. outgroup distinctions, rather than distinguishing between outgroups; Quinn, Lee, Pascalis, & Tanaka, 2015).

Evidence suggests that by 9 months old, White infants use a combination of both skin tone and facial physiognomy cues when attending to race, rather than separating these cues. For example, Balas, Westerlund, Hung, and Nelson (2011) presented White 9-month-olds with faces that were independently digitally manipulated to have either dark or light skin, and either Black or White facial physiognomies. They found that ERP responses (on the N290 component, an index of infant face processing; de Haan, Johnson, & Halit, 2003) were larger to White faces when compared to Black faces (i.e., faces that differed in both skin-tone and facial physiognomy). However, this effect was not found when White faces were compared with faces that only differed in skin-tone *or* physiognomy. This finding suggests that White 9-month-olds are able to distinguish between White and Black faces only when both skin-tone *and* physiognomy cues are present. Adult-like racial categorization and labeling are well-established in both White and Black children by the age of 6 years (Aboud, 1988), with skin tone playing a larger role in categorizations than facial physiognomy throughout the rest of childhood (Dunham, Stepanova, Dotsch, & Todorov, 2015).

## 24.8 SELF-CATEGORIZATION

The process of racial self-categorization (i.e., the way that targets categorize themselves) is not always consistent with the categorizations of others. Knowledge of important factors such as ancestry and cultural background are readily available to targets and shape their self-perceptions and identities throughout development, but this information is not always available to observers. These differences between targets and observers, among others (e.g., motivations to uphold the racial hierarchy; [Ho et al., 2013](#)), can lower rates of concordance between the categorical labels used by targets (particularly those that are racially ambiguous) to describe themselves, and those assigned to them by observers (e.g., [Chen & Hamilton, 2012](#); [Herman, 2010](#)). Furthermore, it is worth noting that as the US racial landscape diversifies ([Colby & Ortman, 2015](#)) discrepancies between self- and other-categorizations will probably increase as targets increasingly embrace alternative racial labels (e.g., Latino or Hispanic; [Hitlin, Brown, & Elder, 2007](#)) and multiracial identities (e.g., [Rockquemore & Brunσμα, 2002](#)).

In keeping with the focus on racial ambiguity, a number of studies have looked at predictors of biracial and multiracial self-categorizations in targets with mixed-race ancestry. For example, middle-class (vs. working-class) and Asian–White (vs. Black–White) targets are more likely to identify as biracial than as monoracial ([Townsend, Fryberg, Wilkins & Markus, 2012](#)). Both of these findings, the authors argue, link being of higher social status to a higher likelihood of biracial identification. Other authors propose an alternative interpretation ([Gullickson & Morning, 2011](#)), focusing on recent immigration history as the explanation for the differences in biracial identification between these groups. [Gullickson and Morning \(2011\)](#) found, consistent with Townsend and colleagues, that mixed-race participants of Asian (a relatively recent immigrant group) ancestry were more likely to identify as Multiracial than mixed-race participants of Black (a relatively longstanding group in the US) ancestry, who tended to identify as Black. Moreover, mixed-race participants of Asian ancestry were also more likely to identify as Multiracial than mixed-race participants with Native American (the longest-standing group in the US) ancestry, who tended to identify as White or Black. These studies highlight some of the individual differences between targets that can lead to the adoption of monoracial and multiracial identities, including social status and immigration history.

Notably, the racial identities of mixed-race individuals appear to be more flexible and malleable than those of monoracials (e.g., [Doyle &](#)

Kao, 2007), with those of mixed Native American ancestry showing the most variation over time. Additionally, situational variables can change the temporary self-categorizations of multiracials, showing support for multiracial's capacity to hold multiple self-categorizations and identities. For example, Gaither, Sommers, and Ambady (2013) found that priming biracial participants with the racial identity of either their mother or their father changed the way they self-identified and behaved in interracial interactions, such that their behavior was most consistent with the primed race (i.e., lower levels of anxiety when interacting with a partner of the primed race, a result typical in same-race versus cross-race interactions studies; e.g., Dovidio, Kawakami, & Gaertner, 2002). Moreover, Multiracials seem to take on the mannerisms and stereotypical speech of the primed monoracial identity (Gaither, Cohen-Goldberg, Gidney, & Maddox, 2015), suggesting that identity malleability could have a variety of consequences on the behavior of mixed-race individuals. These findings and others (e.g., Sanchez, Shih, & Garcia, 2009) suggest that changes in self-categorization may result in behavior changes, yet more research is needed to rule out alternative explanations (e.g., changes in behavior may be strategic without necessitating an identity shift; Pennebaker, Mehl, & Niederhoffer, 2003).

These results suggest that self-categorizations and identities of multiracials can shift and that their behaviors reflect the biases and cognitive styles of their activated identity. However, multiracials also show responses that are unique to mixed-race individuals. For example, monoracial people who learn that they showed an implicit preference for Whites that they did not explicitly endorse (through self-reports) become more defensive (i.e., deny that their results on the implicit associations test reflect their true attitudes) than when they learn they have an implicit preference for Blacks. On the other hand, Black–White Multiracials become defensive about showing either pro-White or pro-Black implicit biases that were not explicitly endorsed (Howell, Gaither, & Ratliff, 2014). The authors argue that this is the result of White–Black Multiracials' self-categorizations as both White and Black, which in turn may lead them to behave more egalitarian, rejecting biases against either of their group memberships.

## 24.9 METHODOLOGICAL DEVELOPMENTS

Given the history of dichotomous distinctions of race in the United States, much of the earlier research on the topic focused on White versus Black (or Asian) categorizations. However, because of an increasing understanding about observers' judgments of mixed-race targets,

recently researchers have started to change the way they measure racial categorization. For example, some have begun to investigate the use of “multiracial” and “mixed-race” in racial categorizations (e.g., [Chen & Hamilton, 2012](#)). However, most studies still rely on forced-choice tasks with a limited number of response options predetermined by researchers. We argue that it is important to consider the possibility that the categorization options provided by researchers are influencing participants’ categorizations. For instance, in the absence of other information (e.g., ancestry) when an observer encounters a person of ambiguous race (e.g., Black–White mixed-race) they may categorize that person as Latino or Arab (rather than multiracial; [Nicolas, Skinner, & Dickter, under review](#)). Thus the imposition of category options (e.g., “Black,” “Multiracial,” “White”) may be limiting our understanding of how race categorizations are made in the real world when people have the option of applying their own category labels.

In an early study on racial ambiguity, [Blascovich, Wyer, Swart, and Kibler \(1997\)](#) asked participants to state out loud the race of faces that were either unambiguously Black or White, or ambiguously White–Black. Their results showed that those higher in racial bias took longer to categorize and made more nonverbal vocalizations (e.g., audible expressions of hesitation, such as “hm’s or “eh’s) when the target was ambiguous (vs. unambiguous). The authors argued that these results evidenced a desire by individuals highly identified with their racial group to accurately identify other ingroup members. However, they did not discuss the results of the categorizations themselves, and no other authors have made use of open-ended approaches to assessing racial categorizations.

As previously discussed, [Peery and Bodenhausen \(2008\)](#) also introduced a novel categorization task (asking participants to make both White or Not White and Black or Not Black categorizations of the same faces, across two blocks) that allowed them to probe for double categorizations (e.g., both Black and White) for mixed-race targets. However, [Chen and Hamilton \(2012\)](#) approached the multiracial label differently, arguing that double categorizations might be methodologically problematic, as they may indicate observer uncertainty rather than true multiracial categorizations (but note that this might be less of a concern for self-categorizations, since uncertainty can be ruled out; c.f., [Gaither et al., 2015](#)). Thus, they developed a trichotomous task that included a Multiracial option in addition to the monoracial races of the mixed-race faces presented. Interestingly, they did not find evidence for blatant hypodescent from faces alone, but for hyperdescent, with both multiracial morphed and real faces of mixed-race individuals being categorized as White more frequently than Black.

Additional creative and indirect ways to get at perceptions of mixed-race targets have also been devised. For example, [Chen and Ratliff \(2015\)](#) used the implicit attitude transfer paradigm to study perceived similarity between multiracials and monoracials. Previous studies ([Ratliff & Nosek, 2008](#)) using this paradigm have shown that people generalize their implicit attitudes towards one member of an outgroup to the other members of that outgroup (i.e., if they implicitly associate a known member of an outgroup with negative adjectives, they will also associate another, unknown, member of the outgroup with negative adjectives). However, generalizations from a member of one outgroup towards members of other outgroups, or from a member of the ingroup towards other ingroup members are not as robust ([Ratliff & Nosek, 2011](#)). Following these findings, [Chen and Ratliff \(2015\)](#) introduced participants to two novel groups and provided participants with valenced information about a member of each group. In a subsequent measure of implicit attitude transfer they found that valenced attitudes toward the original group member only transferred to another group member when they were of the same race (Black). Most relevant to the current discussion, attitude transfer also occurred from the Black group member to a new White–Black member of the same group (but not when the new group member was White), supporting a hypodescent-congruent hypothesis in which the mixed-race target is categorized as Black. Subsequent studies in their paper suggest that this effect was only present for White participants; Black participants did not show attitude transfer from the Black to either the new Black group member or the White–Black group member, suggesting that they considered the White–Black mixed-race target to be an ingroup member. This method highlights an indirect and theory-based approach to testing hypodescent and categorization biases. Although much research in the literature makes use of explicit labels to measure categorization, a proper theoretical framework can be used to arrive at racial categorizations without the use of racial labels (c.f., [Taylor, Fiske, Etoff, & Ruderman, 1978](#)). We believe that advances in methods that tap into the complexities of categorical judgments will be one of the most promising avenues for future findings, as we move away from controlled tasks and towards more ecologically valid and indirect measures of racial categorization.

## 24.10 EMERGING THEORETICAL PERSPECTIVES

Given the findings and theories reviewed here, what are some of the future lines of inquiry and developments that we can expect on the

topic of racial categorizations? Some clues might be gathered from projections about the future of the racial landscape in the United States and around the world. For example, [Frank, Akresh, and Lu \(2010\)](#) provide a summary of some of the predictions about the future of a country (e.g., the US) where racial mixing or immigration allows for the emergence of new racial constructions. They predict that a growing Hispanic population will completely change the racial hierarchy ([Rodriguez, 2007](#)), or that the hierarchy will remain but Hispanics (and perhaps multiracials) will be absorbed into existing racial categories (e.g., light-skinned Hispanics into the White category, dark-skinned Hispanics into the Black category; [Gans, 1999](#)). Alternatively, we argue that these growing demographic groups will be (and to some extent already are) differentiated into their own racial categories (e.g., a Hispanic category, a multi-racial category, among potential others) that fit somewhere in the existing racial hierarchy ([Gomez, 2007](#); [O'Brien, 2008](#)). We argue that this new hierarchy, as it is to some degree already (e.g., [Maddox, 2004](#)), is likely to become more similar to a pigmentocracy—a system with multiple groups in a continuum of skin tones, in which status is higher for groups with lighter skin tone ([Bonilla-Silva, 2004](#)). Pigmentocracies are common in areas of Latin America (e.g., Brazil, Dominican Republic) where racial mixing was historically widespread, resulting in a large variety of skin tones (e.g., [Sidanius, Pena, & Sawyer, 2001](#)). Importantly, given research on the role of physiognomy, we argue that research on pigmentocracies should also consider facial physiognomy cues to race. At any rate, future research on racial categorization should be adaptive and continually probe for the emergence of new racial constructions.

Emergent racial categories and changes to the racial system are not the only exciting frontiers in the psychological study of race categorization. Investigations into the cognitive process of person construal are also providing interesting insights into racial categorization. A promising example is the dynamic interactive model of person construal ([Freeman & Ambady, 2014](#)). This connectionist model (see [Rumelhart, McClelland, & the PDF Research Group, 1986](#)) takes into consideration both bottom-up (e.g., phenotypicality) and top-down (e.g., stereotypes) information about a target's social category (e.g., race) during the process of social (e.g., racial) categorization. These sources of information simultaneously activate particular categories depending on the weights of the connections (e.g., degree of association between stereotypes of low-status and the Black category) between these elements. Importantly, connections among elements of the model can be bidirectional, so activation across nodes continues dynamically until a stable state (i.e., a decision about the appropriate category, given all sources of information) is reached. Using an example from [Freeman](#)

and colleagues' (2011) study on the effects of low-status attire on categorizations (Freeman et al., 2011), the dynamic interactive model of person construal would show the following activation pattern: a target dressed as a janitor would activate the janitor category, which in turn would activate stereotypes about low status, and subsequently the Black category. In the case of a White–Black mixed race face, the model posits that both the White and Black categories will receive a certain degree of bottom-up activation from features typical of both Blacks and Whites. However, the additional activation coming from the janitor attire > Janitor > low status > Black path will eventually stabilize the model into a Black categorization. An interesting take away from this dynamic process is that at any point before the system stabilizes, it is possible to have two categories being partially active. In fact, this pattern of simultaneous activation has been explored before with mouse-tracking tasks in which participants are asked to categorize stimuli by moving a computer mouse from the center of the screen to one of two categories shown to the left and right of the screen. For example, Freeman, Pauker, Apfelbaum, and Ambady (2010) showed that when moving a mouse towards the category that better fits a target with information from two groups (e.g., a White face with some Black features), the hand will show some degree of “attraction” towards the non-dominant category (e.g., Black) on one side of the screen before settling into a final categorization on the other side of the screen (e.g., White).

As a final example of the advancements in this area, Freeman, Pauker, and Sanchez (2016) used mouse-tracking to explore whether White observers' levels of cross-race exposure had an effect on the process of race classification. When looking at categorizations, exposure (as measured through US Census data on the size of the Black population in the area where the participant lived) did not moderate their results. However, when analyzing the velocity of the mouse en route to categorizations, they found that movements towards the task labels were slower when faces were ambiguous and that this effect was moderated by cross-race exposure. Specifically, those with lower cross-race exposure showed more abrupt changes in categorizations of ambiguous faces (i.e., initial movements towards the unchosen label before correcting towards the final selection). These results were also reflected in velocity measures, given that participants sped up when making these abrupt changes in order to overcome the initial inaccuracy. The authors argued that the velocity results probably reflected an attempt to compensate for these abrupt changes. In a second study, they found that these abrupt shifts mediated the effect of cross-race exposure on trust in mixed-race targets, such that less cross-race exposure predicted more abrupt changes en route to categorization, which in turn predicted distrust in mixed-race targets.

These findings indicate that the study of racial categorization and its consequences can benefit greatly from focusing not only on the outcome of classification, but also on the nuances of the cognitive processing involved in arriving at a particular judgment.

## 24.11 CONCLUSION

At the beginning of this chapter we made reference to Rachel Dolezal's story, a woman of White ancestry and features who adopted a Black identity and Black visual and cultural cues to signal this identity. Observers seemed to categorize her in accordance with her Black self-identification (and visual and cultural cues), but this changed after information about her White ancestry and features came to light. The literature reviewed here speaks to the malleability of racial judgments for both observers and targets that may have allowed for these changes in categorization. Target characteristics such as phenotypicality and ancestry, and observer's individual differences and developmental stage all play a role in our judgments of race. How we think about race has important consequences well beyond how we categorize an uncommon case of racial identity like Dolezal's. Racial categorization is an important precursor, directly or indirectly, to a myriad of intra- and intergroup phenomena, from subtle behavioral biases (e.g., Dovidio et al., 2002) to large-scale human rights violations (e.g., Shelton, 2005). Racial categorization and its consequent biases permeate human history and current social issues, and a continued exploration of the external cues, internal dispositions, and psychological processes involved in racial constructions may be critical to understanding human social behavior.

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