Beyond the double jeopardy hypothesis: Examining the interaction between age- and race-based stereotypes across the lifespan.

by

Sonia K. Kang

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Department of Psychology
University of Toronto

© Copyright by Sonia K. Kang 2010
Beyond the double jeopardy hypothesis: Examining the interaction between age- and race-based stereotypes across the lifespan.

Sonia K. Kang

Doctor of Philosophy
Department of Psychology
University of Toronto
2010

Abstract

Previous research on stereotyping has focused on perceptions of and negative consequences for individuals who activate stereotypes based on their membership in one stigmatized group. In contrast, relatively little research has examined stereotyping following categorization of targets into more than one stigmatized group. This dissertation focuses on perceptions of individuals who activate more than one set of stereotypes. In particular, I focused on the combination of stereotypes associated with the older adult age group and the Black racial group - two stereotype sets which contain elements that directly contradict one another. To examine the interaction of these two sets of stereotypes, I examined perceptions of four types of targets: young Black men, young White men, old Black men, and old White men. In Chapter 1, I examine perceptions of anger and happiness on the faces of young and old Black and White men. These perceptions are examined among young (Study 1a) and old (Study 1b) perceivers. In Chapter 2, I attempt to bias these perceptions of facial emotion in line with race or age stereotypes using a categorization priming procedure. The final three studies examine more basic perceptions of these targets of interest. I examine current and projected trait-related perceptions of novel (Chapter 3) and famous (Chapter 4) young and old Black and White men at various points across the lifespan.
Finally, in Chapter 5, I directly compare these four targets on a number of traits using a forced-choice comparison task for both current and projected ratings. Overall, the results of this dissertation suggest that race-based and age-based stereotypes combine via a process of selective inhibition. Specifically, old Black and White men are characterized according to the old age stereotypes which most strikingly contrast them against their younger counterparts. Compared with their corresponding young targets, this pattern results in relatively positive evaluations of older Black men, but relatively negative evaluations of older White men.
Acknowledgments

First and foremost, I would like to extend my thanks to my advisor, Dr. Alison Chasteen, for her careful and generous mentorship. With her guidance and support I have learned and accomplished so much in just five short years. I am also extremely grateful for the support of Dr. Michael Inzlicht who has provided me with more opportunities than I can remember and has always challenged me to grow and develop. I am especially thankful for the special interest he took in me as a writer, and for his help (read: tough love!) in developing this indispensable craft. I would also like to thank Dr. Jason Plaks, another invaluable member of my dissertation committee, for being a reliable source of positivity, support, creative ideas, and constructive feedback. All three of these mentors have been instrumental to this work and, further, have inspired me again and again with their insight, intellect, and intuition.

I would also like to thank Drs. Kurt Hugenberg, Geoff MacDonald, and Elizabeth Page-Gould for their feedback and suggestions on this dissertation. Additionally, I would like to thank my tireless army of research assistants for their help with data collection on these projects: Aditi Verma, Candice Ma, Jeannette Bergfeld, Lesley Choi, Miti Modi, Ruifan Zeng, and Vicki Lee. Special thanks are due to Darko Odic and Dana Henderson for their help in organizing and executing these studies.

I am also indebted to my coauthors, collaborators, and co-conspirators, whom I hope to continue working with well into the future: Jacob Hirsh, Ben Amsel, Nadia Bashir, Belle Derks, Jenny Gutsell, Dominic Packer, Abby Remick, Jessica Remedios, Nevena Simic, Rimma Teper, and Alexa Tullett. I also thankful to the larger SPA community of faculty and graduate students at the University of Toronto; I am honored to be part of such an amazing group of scholars.
Perhaps most importantly, completing graduate school would not have been possible without the support and encouragement of my parents, my wonderful sisters, Sandy, Aman, and Kiran, and my brilliant husband, Jacob, to whom I am tremendously grateful.

Finally, I wish to thank the Social Sciences and Humanities Research Council of Canada for their ongoing support of my research.
# Table of Contents

Abstract............................................................................................................................................ ii

Acknowledgments ........................................................................................................................ ..iv

Table of Contents ........................................................................................................................... vii

List of Tables ..................................................................................................................................... viii

List of Figures................................................................................................................................... ixx

Introduction ..................................................................................................................................... 1

Chapter 1 Differential Perceptions of Anger and Happiness on the Faces of Young and Old Black and White Men ............................................................................................................... 12

   Introduction............................................................................................................................... 12

   Study 1a Method....................................................................................................................... 15

   Study 1a Results and Discussion .............................................................................................. 17

   Study 1b Method....................................................................................................................... 21

   Study 1b Results and Discussion .............................................................................................. 22

   General Discussion ................................................................................................................... 26

Chapter 2 Perceptions following Age-Based or Race-Based Priming .......................................... 29

   Introduction............................................................................................................................... 29

   Method...................................................................................................................................... 31

   Results....................................................................................................................................... 33

   Discussion................................................................................................................................. 37

Chapter 3 Perception Across Time ................................................................................................ 40

   Introduction............................................................................................................................... 40

   Method...................................................................................................................................... 42

   Results....................................................................................................................................... 44

   Discussion................................................................................................................................. 55
Chapter 4 Generation of Famous Exemplars and Perception of these Famous Individuals Across Time

Introduction ................................................................. 61
Method ................................................................................. 62
Results .................................................................................. 64
Discussion ............................................................................... 77

Chapter 5 Forced Comparisons .................................................. 82
Introduction ............................................................................. 82
Method .................................................................................. 83
Results .................................................................................. 84
Discussion ............................................................................... 89
Conclusion ............................................................................... 93
References ................................................................................ 102
List of Tables

Table 3.1: Rotated factor matrix for trait ratings.................................................................46

Table 4.1: Famous exemplars generated in each of four conditions .........................65

Table 4.2: Percentage of exemplars in each profession by condition......................68

Table 4.3: Rotated factor matrix for trait ratings.................................................................69

Table 5.1: Mean reaction time and results of post-hoc tests for each comparison on warmth-related traits. .................................................................86

Table 5.2: Mean reaction time and results of post-hoc tests for each comparison on power-related traits.................................................................87

Table 5.3: Significant differences in choice by comparison and trait type .................88
List of Figures

Figure 1.1: Five frames from angry-to-happy movies for the four target types: young Black, young White, old Black, old White. ................................................................. .....16

Figure 1.2: Mean response latencies among young adult participants for the facial emotion change-detection task by target age and race for each of the six emotional transitions............18

Figure 1.3: Mean response latencies among older adult participants for the facial emotion change-detection task by target age and race for each of the six emotional transitions...........23

Figure 2.1: Mean response latencies for the facial emotion change-detection task by target age and race for each of the six emotional transitions. ................................................................. 34

Figure 3.1: Ratings of warmth for each target at past, present, and future time-points. .......... 51

Figure 3.2: Ratings of power for each target at past, present, and future time-points............. 51

Figure 3.3: Current and retro/prospective ratings of warmth for each target at age 25 and age 75. .............................................................................................................................. 54

Figure 3.4: Current and retro/prospective ratings of power for each target at age 25 and age 75. ............................................................................................................................... 54

Figure 4.1: Negative evaluation ratings of each target type at past, present, and future time-points. .......................................................................................................................... 73

Figure 4.2: Positive evaluation ratings of each target type at past, present, and future time-points. .......................................................................................................................... 73

Figure 4.3: Current and retro/prospective ratings of negative evaluation for each target at age 25 and age 75 .......................................................................................................................... 75

Figure 4.4: Current and retro/prospective ratings of positive evaluation for each target at age 25 and age 75 .......................................................................................................................... 75
Figure 5.1: Mean reaction time for each comparison by trait type.
Introduction

The social world is a complex and dynamic landscape which demands immense cognitive resources for perceiving and making judgments about others. In order to successfully navigate the complexities of this world, the human brain has evolved a number of resource-saving heuristics which facilitate an ongoing and fluent exchange with the objects, individuals, and groups that we encounter. One class of such resource-saving heuristics are stereotypes, oversimplified and generalized beliefs about various social groups, fundamental among these being groups based on age, race, and gender (Brewer, 1988). Stereotypes are useful in a number of different ways, particularly in helping to predict how an individual might act in any given situation and to direct our own actions in relation to this individual. Perhaps because they are so useful, stereotypes are often overused or, indeed, misused altogether, and can result in negative outcomes such as prejudice and discrimination.

Much previous work in social psychology has focused on the negative consequences of stereotyping for individuals who activate stereotypes associated with their membership in one stigmatized group. However, relatively little research has acknowledged the fact that individuals often belong to more than one group, presenting an even more complex perceptual task for perceivers. In this dissertation, I am interested in examining perceptions of multiply-categorizable targets, specifically, those who activate more than one set of stereotypes. I will focus on two specific sets of stereotypes--the set of stereotypes related to older adults and the set of stereotypes related to Black individuals--in order to examine how perception proceeds when targets activate more than one stereotype. I first offer a brief review of the process of stereotyping, followed by a review of the content of older adult and Black stereotypes within
North American society, as well as an introduction to face perception paradigms, an important methodology utilized in parts of this dissertation.

Stereotyping

The first step in the process of stereotyping is the categorization of individuals into various social groups. Humans are veritable experts of social categorization, and we develop this skill very early in our development. In the case of gender, for example, recognition of the groups male and female and the ability to categorize individuals accordingly have reached near mastery by 12 months of age (Poulin-Dubois, Serbin, & Derbyshire, 1998; Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002). It does not take long for these categories to become attached to stereotypes. Between the ages of 3 and 6 years, children acquire knowledge of and begin to apply stereotypes in a number of domains including race (e.g., Aboud, 1988), gender (e.g., Ruble & Martin, 1998), and age (Seefeldt, Jantz, Galper, & Serlock, 1977). These early categorical representations and associated beliefs are the first additions to the neocortical, or “slow-learning”, processing system and reflect our long-term, stable perceptions of the social world (McClelland, McNaughton, & O’Reilly, 1995). These categories and beliefs are notoriously inflexible, and present strong resistance to modification or adjustment. Due to their static nature, they allow for a simplified and accelerated navigation of the person perception process, thereby helping to preserve cognitive resources (Allport, 1954, Bodenhausen & Macrae, 1988, Fiske & Neuberg, 1990; Macrae, Milne, & Bodenhausen, 1994).

This simplification and acceleration of the person perception process is not without its costs. Social cognitive theorists have posited two important ways in which categorical thinking can guide person perception (Macrae & Bodenhausen, 2000). First, categorical thinking directs the online processing of target-related information as it is encountered (Bodenhausen, 1988). As such, categorization can influence the pieces of information which are encoded, represented, and
recollected by a perceiver (e.g., Srull & Wyer, 1989). The second way that categorical thinking may influence perception is by biasing evaluations of a target in line with trait and behavioural expectancies, a process which commonly leads to stereotype-consistent evaluative outcomes (e.g., Fiske & Neuberg, 1990). Each of these processes presents an opportunity for negative stereotypes to bias perceptions of and interactions with stigmatized individuals. For example, if a man believes that women are bad at math, he may fail to encode the presence of a woman in his advanced calculus class and may later misattribute a particularly insightful question she posed as having been posed by a male classmate. Further, a woman who holds a stereotype of Black men as violent and prone to criminal activity may quickly assume that a Black man she sees in the court house is a defendant rather than a lawyer. In both of these examples, negative stereotypes can lead to detrimental outcomes for both the targets of the stereotypes and the perceivers who hold them.

Two of the most influential models of person perception in social psychology are the dual-process model (Brewer, 1988) and the continuum model (Fiske & Neuberg, 1990). These models have in common the dissociation between category-based and person-based perception. Although slightly different in the exact order in which various person perception steps are proposed to unfold, both models assert that categorization is the automatic and preferred mode of impression formation. Only if a target is particularly unique or self-relevant will a more controlled, effortful, person-based process be engaged. The link between a category label and associated stereotypes can be thought of as nodes in a semantic priming network (Neely, 1991). Once a particular category (e.g., politician) becomes activated in memory, there is heightened activation of both negative and positive associated stereotypes (e.g., self-serving, untrustworthy, bombastic; e.g., Collins & Loftus, 1975; Devine, 1989; Lepore & Brown, 1997). This activation of stereotypes on its own is not inherently problematic; however, stereotypes can easily lead to
prejudiced attitudes and discriminatory behaviours, which are of course fundamental problems within society.

The research reviewed in this section has largely, if not completely, focussed on stereotyping based on one category or group membership. Research on perceptions of multiply-categorizable targets is still somewhat lacking. The goal of this dissertation is to contribute to this body of research by focusing on targets who activate more than one set of stereotypes simultaneously. I will specifically focus on targets who simultaneously activate stereotypes about older adults and the Black racial group.

Old age stereotypes

Although age is one of the three primary categories of social perception (Brewer, 1988), there is a relative paucity of research on age stereotypes compared to stereotypes based on gender or race. This is despite the fact that age discrimination is thought to represent the most socially condoned and institutionalized form of prejudice in current society (Nelson, 2002; for reviews see Pasupathi & Lockenhoff, 2002; Wilkinson & Ferraro, 2002). For example, instances of racism and sexism are widely considered unacceptable and offensive, but instances of ageism are ubiquitous within our language and literature (Butler, 1975; Coupland & Coupland, 1993; Covey, 1988; Ryan, Hamilton, & Kwong See, 1994), humour (Dillon & Jones, 1981), music (Cohen & Kruschwitz, 1990), and television and advertising (Robinson & Skill, 1995).

Research on old age stereotypes reveals an overall negative attitude toward older adults when compared to their younger counterparts (Crockett & Hummert, 1987; Kite, Stockdale, Whitley, & Johnson, 2005; Perdue & Gurtman, 1990). However, this is not to say that stereotypes about older adults are all negative. Indeed, the content of the old age stereotype set is quite mixed, with both negative (e.g., older adults are senile and sickly) and positive (e.g.,
older adults are kind and generous) components existing simultaneously. This dualistic nature of old age stereotypes is commonly recognized and discussed within the literature. For example, a widely accepted framework to explain old age stereotypes suggests three main characteristics: old age stereotypes contain both positive and negative elements, they are generally pervasive across cultural and ethnic groups, and they are persistent across time (Cuddy, Norton, & Fiske, 2005). Further evidence for this duality comes from research on the Stereotype Content Model (SCM: Fiske, Cuddy, Glick, & Xu, 2002). According to the SCM, groups can be described along two continua: from cold to warm, and from incompetent to competent. Older adults tend to be described as warm but incompetent, a clear reflection of the simultaneous existence of both positive and negative perceptions (Cuddy et al., 2005; Fiske et al., 2002; Hummert, Garstka, Shaner, & Strahm, 1994). In addition to positive and negative stereotypes, there also exist positively and negatively regarded subtypes of the older adult group (e.g., perfect grandparent (loving, wise) vs. shrew/curmudgeon (grumpy, offensive).

A meta-analytic review of research on attitudes toward younger and older adults provides further insight into the content of old age stereotypes (Kite et al., 2005; for an earlier review, see Kite & Johnson, 1988). The review examined 232 effect sizes from 131 articles in terms of evaluations of younger and older adults in five categories: age stereotype (e.g., old-fashioned, talks a lot about the past), attractiveness (e.g., pretty, wrinkled), competence (e.g., intelligent, good memory), behaviour (e.g., willingness to interact with), and evaluation (e.g., generous, friendly). Older adults were consistently judged more negatively than younger adults across all of these categories, with the most bias seen in the domain of age stereotype, confirming that age-related stereotypes about older adults are much more negative than age-related stereotypes about younger adults. In regard to specific content, some negative old age stereotypes include the ideas that older adults are forgetful, complainers, slow, rude,
unattractive, and weak. However, even though these negative stereotypes exist, the review revealed that older adults are relatively well-liked, echoing the assertion that older adults are seen as warm but incompetent (Cuddy et al., 2005). Overall, evidence suggests that older adults are generally regarded less positively than younger adults, but that they are characterized by both negative and positive stereotypes.

**Black Stereotypes**

In contrast to the more mixed set of stereotypes that exist about older adults, stereotypes which exist about Black people are mostly negatively valenced. The most pervasive stereotype regarding Black individuals, and likely Black men specifically, is that they are prone to violence and criminal activity (e.g., Bodenhausen, 1988, 1990; Devine & Elliot, 1995; Dovidio, Evans, & Tyler, 1986; Eberhardt, Goff, Purdie, & Davies, 2004). For example, early work on this issue shows that the general concept of “violence” is more accessible when observing a Black person committing some act than while observing a White person committing the same act (Bruner, 1957). Similarly, White perceivers have been shown to interpret an ambiguous shove as hostile or violent when performed by a Black actor, but as harmless dramatizing or playing around when performed by a White actor (Duncan, 1976). These findings have since been replicated among school-age children (Sagar & Schofield, 1980), highlighting the ubiquity of this stereotype. Among perceivers of all ages, it is presumed that the concepts of violence and threat are more accessible when observing a Black individual than when observing a White individual. Indeed, White individuals report increased fear of crime in the presence of Black individuals (St. John & Heald-Moore, 1995). This perception of Black individuals as violent and prone to criminal activity is further exacerbated by stereotypes linking Black individuals with poverty.
and laziness (Gilens, 1996), which suggest that instead of surviving via conventional means, Black people turn to theft and other forms of violent criminal activity.

Perhaps more work on stereotyping has focused on the Black-violence stereotype than any other. Of course, some controversy still exists regarding the issue of implicit and explicit stereotyping (e.g., Devine, 1989; Fazio, Jackson, Dunton, & Williams, 1995; Lepore & Brown, 1997), but the general assertion that there are prevalent stereotypes which link Black individuals to crime and violence cannot be contested. These stereotypes exist even among young children (Baron & Banaji, 2006) and can be brought to mind repeatedly even once they have dissipated after sustained exposure to a Black individual (Kunda, Davies, Adams, & Spencer, 2002). Stereotypes linking Black people to aggression and hostility are so powerful that they can influence decisions about whether to shoot (in a video game paradigm in the laboratory) Black and White targets. Specifically, this research has shown that many different types of perceivers (e.g., European Americans, African Americans, police officers) are more likely to judge as dangerous and mistakenly shoot an unarmed Black suspect than an unarmed White suspect (e.g., Correll, Park, Judd, & Wittenbrink, 2002; Greenwald, Oakes, & Hoffman, 2003; Payne, 2001; Plant & Peruche, 2005; Plant, Peruche, & Butz, 2005). Taken together, this type of research speaks to the strength and pervasiveness of stereotypes linking Black people to violence, hostility, and aggression.

*Face Perception*

In order to examine Black and old age stereotypes simultaneously, I chose to focus on face perception, a dynamic and ecologically relevant methodology which enables us to investigate how perceivers process the complex set of stimuli on the face. We know, of course, that the human face is central to much of person perception and impression formation.
Throughout a lifetime of social interactions, humans become experts at face processing. We are able to achieve complex feats such as recognizing thousands of faces and deciphering cues like emotional expression and gaze direction with relative ease and speed. As such, research paradigms employing facial perception have been extremely useful in illustrating the process of stereotyping as it occurs in the real world. Two important papers by Hugenberg and Bodenhausen (2003, 2004) show how stereotypes about Black people can influence facial perception. Stereotypes linking Black people to aggression and hostility bias perceivers to see anger linger longer and appear sooner on Black target faces compared to White target faces (Hugenberg & Bodenhausen, 2003). Similarly, perceivers are more likely to categorize hostile racially ambiguous faces as African American (Hugenberg & Bodenhausen, 2004). Other research suggests that this negative bias toward Black faces is exacerbated for those who have more prototypically Black features (e.g., larger lips, broader nose, darker skin; Livingston & Brewer, 2002).

Like all other aspects of person perception, face processing can be biased by a number of factors including the emotional (Niedenthal, Halberstadt, Margolin, & Innes-Ker, 2000) and dispositional (Inzlicht, Kaiser, & Major, 2008; Sacco, Hugenberg, & Sefcek, 2009) state of the perceiver and the emotional expression (Fox, Russo, & Dutton, 2002), facial features (Sacco & Hugenberg, 2009), or gender (Hugenberg & Sczesny, 2006) of the target. For example, perceivers tend to take longer to redirect their attention away from angry or happy faces than from neutral faces (Fox et al., 2002). Interestingly, at the level of the brain, the strongest amygdala threat response is observed when viewing ambiguously threatening compared to clearly threatening faces (Adams, Gordon, Baird, Ambady, & Kleck, 2003). Facial processing is also influenced by one’s familiarity with or membership in the group being observed, such that memory and recognition is usually better for ingroup compared to outgroup members (see
Hugenberg & Sacco, 2008 for a review; Bernstein, Young, & Hugenberg, 2007; see Hugenberg & Corneille, 2009 and Young, Hugenberg, Bernstein, & Sacco, 2009 for discussions of how this effect can be interrupted). For example, accuracy and speed in judging emotions was positively correlated with amount of exposure to the group posing the expressions (Elfenbein & Ambady, 2003). Finally, cultural differences in facial appearance appear to be intensified when expressing emotions (Marsh, Elfenbein, & Ambady, 2003). Given the potential for increased ecological validity when using a dynamic face perception paradigm and the sensitivity of face processing to various social factors including stereotypes, the primary studies (Studies 1a and 1b) in this dissertation focus on face processing.

The Combination of Old Age and Black Stereotypes

In my dissertation, I focus on the combination of the Black-violence stereotype and the cluster of old age stereotypes. Specifically, I was interested in how perception proceeds when a target activates more than one set of stereotypes, that is, when a target is multiply categorizable as both Black and old. I was particularly interested in focusing on these two stereotypes because they contain conflicting elements. For example, elements of the older adult stereotype (e.g., warm, frail, generous) directly contradict the violence and aggression associated with the Black stereotype. Facial perception presents an attractive option for examining this combination of stereotypes as it allows for the comparison of individuals who activate only age stereotypes (i.e., older White adults), only Black stereotypes (i.e., young Black adults), neither old age nor Black stereotypes (i.e., young White adults), and both Black and old age stereotypes (i.e., older Black adults). Although a few studies have used face processing to examine perceptions of Black individuals, no previous studies had examined perceptions of older adults using this type of methodology, so this dissertation is novel in that it extends previous work on facial processing.
to the examination of older adult targets. This dissertation is also unique in that it presents the first set of studies which aim to systematically examine perceptions of multiply categorizable targets across the lifespan.

Previous research on multiple categorization has worked within the “double-jeopardy hypothesis” framework (e.g., Beale, 1970; Blakemore & Boneham, 1994), suggesting that individuals belonging to two stereotyped groups endure consequences of both stereotypes simultaneously. Although theoretically reasonable, empirical evidence for an age/ethnicity double-jeopardy hypothesis is lacking (e.g., Dowd & Bengston, 1978; Ferraro, 1987). Further, in terms of a gender/ethnicity effect, Black and Latino women do not perceive more discrimination than their male counterparts, a finding which is also inconsistent with double-jeopardy (Levin, Sinclair, Veniegas, & Taylor, 2002). In this dissertation, I suggest that cross-categorization may be more complex than a simple additive function. For example, stereotypes might blend together to create a new, unique stereotype, as suggested by the subtyping model (Weber & Crocker, 1983), or one stereotype may completely inhibit the other, preventing multiple categorization (Macrae, Bodenhausen, & Milne, 1995). Alternatively, the effect may involve a selective inhibition of conflicting stereotype elements. For example, older Black men may benefit from activation of an elderly stereotype because it directly contradicts elements of the hostile Black stereotype. Particularly, the “frail” and “kind” aspects of elderly stereotypes may selectively inhibit activation of the “hostile” and “aggressive” components of the Black stereotype. These hypotheses are discussed further in Chapter 1.

Overview

In what follows, I will present a series of five studies which aim to examine the complex interaction between old age and Black stereotypes. In Chapter 1, I present the results of a study
which investigates perceptions of anger and happiness on the faces of young and old Black and White men among young (Study 1a) and old (Study 1b) perceivers. Chapter 2 presents a similar study which attempts to bias perceptions of facial emotion in line with race or age stereotypes via race-based and age-based priming. The final three chapters take a more basic approach, examining general perceptions of young and old Black and White men, both novel targets (Chapter 3) and famous exemplars (Chapter 4). Chapters 3 and 4 further examine how individuals from these four target groups are predicted to change across the lifespan. Finally, in Chapter 5, I will present the results of a study which employs a forced choice comparison task to directly compare young and old Black and White men on various positive and negative traits. This last Chapter also sheds some light on the relative difficulty of making different types of social comparisons.¹

¹ Parts of this thesis have been published elsewhere. Elements of Chapter 1 were published as (Kang & Chasteen, 2009).
Chapter 1

Differential Perceptions of Anger and Happiness on the Faces of Young and Old Black and White Men

Introduction

The negative impact of stereotypes on perceptions of devalued group members has been well-documented in the person-perception literature (e.g., Duncan, 1976; Sagar & Schofield, 1980). Many stereotypes are based on age, racial, or gender groups, and much research has explored the consequences of stereotyping for members of these groups. In this first study, I examined how individuals perceive others who belong to more than one stereotyped group.

To investigate how competing group stereotypes influence perceptions of multiply-categorizable individuals, I examined responses to targets who were either Black, elderly, or both. Compared to White men, Black men are stereotyped as aggressive and hostile (Devine, 1989). Contrastingly, older adults are stereotyped as forgetful, frail, incompetent, or rude. Despite these negative perceptions, older adults are also judged to be warm and are relatively well-liked (Cuddy et al., 2005; Kite et al., 2005). Thus, these two group stereotypes differ markedly: one suggests hostility and aggression, the other frailty and warmth. Because these stereotypes are virtual opposites, they present a unique opportunity to see what happens when they both apply to a target individual. By looking at these two stereotypes in combination, we will be able to more fully understand the effects of multiple categorization.

To explore these ideas, I adapted a procedure used by Hugenberg and Bodenhausen (2003) in their examination of perceived facial threat in young Black and White men. In their
study, White participants watched movies in which the target’s facial expression changed from angry-to-happy or from happy-to-angry and indicated when they perceived a change in the target’s emotion. Results revealed that participants high in implicit racial prejudice perceived anger appearing sooner and disappearing later on Black faces, suggesting a bias among these individuals to perceive anger on Black faces.

I modified Hugenberg and Bodenhausen’s (2003) procedure in three ways. First, I added two more targets, yielding a total of four “types”: young Black, old Black, young White, and old White. Second, I added four additional emotional transitions. Hugenberg and Bodenhausen (2003) concluded that participants high in implicit racial prejudice are biased to perceive threatening affect on Black faces; it might also be the case that they are biased against perceiving positive affect (e.g. happiness) on Black faces. Examining positive and negative emotions may be important, especially in the case of the elderly stereotype, which contains positive and negative elements. To this end, I examined participants’ judgments of six emotional transitions, which included some neutral start/endpoints to allow for a more naturalistic examination of emotion. Finally, I examined perceptions of these targets among participants from two age groups: young adults (Study 1a) and older adults (Study 1b).

As participants watched the emotional transition movies, they were instructed to indicate when the first emotion was no longer present. As in Hugenberg and Bodenhausen (2003), I expected that participants would see anger appear sooner and linger longer and, similarly, see happiness appear later and disappear sooner on a young Black face compared to a young White face.

My hypotheses for perceptions of young compared to old faces within each racial group were more exploratory in nature. For White faces, I was reasonably certain that participants
would see anger appear sooner and linger longer and happiness appear later and disappear sooner on an old compared to a young face, in line with research showing biases against White older adults. Although the elderly stereotype is mixed, people tend to have more negative than positive trait associations for older adults (Hummert et al., 1995) and evaluate the category “old” more negatively than the category “young” (e.g., Perdue & Gurtman, 1990).

For Black faces, four competing hypotheses existed. The double-jeopardy hypothesis predicts that combining Black and elderly stereotypes should result in more bias against elderly Black men—participants should see anger last longer and appear sooner and happiness appear later and disappear sooner from an old compared to a young Black face. Thus, the double-jeopardy hypothesis predicts two main effects, increased bias for Black relative to White faces, and increased bias for old relative to young faces. Because of the additive consequences of Black and elderly stereotypes, older Black faces should be evaluated most negatively.

In contrast, a global inhibition hypothesis predicts that perception will be in line with whichever stereotype is able to gain “mental dominance” (Macrae et al., 1995). If Black stereotypes override elderly stereotypes, participants should perceive the old Black face similarly to the young Black face; results should reveal a single main effect of race, and no interaction with age. If elderly stereotypes override Black stereotypes, participants should perceive the old Black face similarly to the old White face, revealing only a single main effect of age.

Finally, the subtyping and selective inhibition hypotheses both predict an interaction effect. If the elderly stereotype selectively inhibits the conflicting elements of the Black stereotype (e.g., “frail and kind” vs. “hostile and aggressive”), participants should show biased perceptions of facial emotion on young but not old Black faces. Specifically, participants should
see anger last longer and appear sooner and happiness appear later and disappear sooner from a young Black face than an old Black face. Similar results are predicted by a subtyping hypothesis. Older Black men may represent a positively regarded subtype of Black men—exemplars like Bill Cosby readily come to mind—and perceptions of these men would therefore be more positive than perceptions of their younger counterparts.

**Study 1a Method**

*Participant and design*

Participants were 48 non-Black introductory psychology students (26 women; Age: range = 17-26 years, $M = 19.2$ years, $SD = 2.0$ years) from the University of Toronto. Participants were from a variety of ethnic backgrounds, reflecting the diversity of Toronto (47.9% European, 31.3% East/ Southeast Asian, 12.5% South Asian, 4.2% Middle Eastern, 4.2% Aboriginal). This study employed a within-subjects design, with all 48 participants exposed to the same collection of video stimuli.

*Materials and procedure*

Following Hugenberg and Bodenhausen (2003), I used Poser 7™ three-dimensional animation software to create facial expression animations. Four base faces were created, two young men and two old men. The skin tone, eye color, and hair color were manipulated to create Black and White exemplars of each face, yielding eight base faces, two each of the four possible combinations: young Black, young White, old Black, old White. Pretesting confirmed that young targets were perceived as more youthful and, in line with stereotypes linking youth and beauty (e.g., Kite et al., 2005), more attractive than older targets. There were no differences in attractiveness according to race.
Using these eight base faces, I created movies in which each target’s facial expression changed over time along six different emotional transitions: happy-to-angry, angry-to-happy, angry-to-neutral, neutral-to-angry, happy-to-neutral, and neutral-to-happy. Thus, 48 movies (6 emotional transitions for each of 8 base faces) were created in all. Each movie was 17 s in duration and 120 frames in length. Example frames from the angry-to-happy animations are displayed in Figure 1.1.

Figure 1.1: Five frames from angry-to-happy movies for the four target types: young Black, young White, old Black, old White.

Notes: The original stimulus movies were presented in color.
Participants were invited to participate in an experiment examining perceptions of facial expressions. Participants were asked to watch the movies described above, and to press the space bar when they judged the first emotion to have completely disappeared from the face. The actual emotions of interest were not specified (i.e., participants were not told that the facial expression would change from happy to angry, for example). Participants completed two practice trials before completing the randomized experimental set of 48 movies. Finally, participants completed a demographics questionnaire and were fully debriefed.

**Study 1a Results**

The dependent measure of interest was the mean time at which participants indicated that the first emotion had completely disappeared from the face. I conducted six two-way repeated measures analyses of variance (ANOVAs) with target age (young, old) and race (White, Black) entered as within-subjects factors. Paired-samples t-tests were used to test significant effects. Mean response latencies for the facial emotion change-detection task by target age and race for the six emotional transitions are displayed in Figure 1.2.
Figure 1.2: Mean response latencies among young adult participants for the facial emotion change-detection task by target age and race for each of the six emotional transitions.
**Transition Type 1: Happy-to-Angry**

Analyses revealed a significant main effect of target race, $F(1, 47) = 11.00, p = .003, \eta^2_p = 0.19$, which was qualified by a two-way interaction between target age and race, $F(1, 47) = 43.03, p = .001, \eta^2_p = 0.48$. When observing White targets, participants judged anger as appearing sooner on an old ($M = 7.55$ s, $SD = 3.77$ s) compared to a young face ($M = 8.86$ s, $SD = 3.62$ s), $t(47) = 5.55, p = .001, d = 0.35$. This pattern was reversed for Black targets, such that participants saw anger appear sooner on a young ($M = 8.26$ s, $SD = 3.92$ s) compared to an old face ($M = 9.85$ s, $SD = 4.84$ s), $t(47) = -4.70, p = .001, d = 0.36$.

**Transition Type 2: Angry-to-Happy**

For this transition, analyses revealed a two-way interaction between target age and race, $F(1, 47) = 38.60, p = .001, \eta^2_p = 0.45$. When observing White targets, participants judged anger as lasting longer on an old ($M = 10.41$ s, $SD = 4.68$ s) compared to a young face ($M = 8.86$ s, $SD = 4.35$ s), $t(47) = -4.18, p = .001, d = 0.34$. Again, this pattern was reversed for Black targets, such that participants saw anger last longer on a young ($M = 9.88$ s, $SD = 4.29$ s) compared to an old face ($M = 8.47$ s, $SD = 4.98$ s), $t(47) = 3.92, p = .001, d = 0.30$.

**Transition Type 3: Angry-to-Neutral**

Analyses revealed a two-way interaction between target age and race, $F(1, 47) = 21.31, p = .001, \eta^2_p = 0.31$. Participants judged anger as lasting longer on an old White face ($M = 10.71$ s, $SD = 3.14$ s) than on a young White face ($M = 9.38$ s, $SD = 3.31$ s), $t(47) = -4.83, p = .001, d = 0.41$. The opposite pattern was found for Black targets, such that participants saw anger lasting longer on a young face ($M = 10.58$ s, $SD = 3.80$ s) than on an old face ($M = 9.70$ s, $SD = 3.68$ s), $t(47) = 2.54, p = .016, d = 0.24$. 
Transition Type 4: Neutral-to-Angry

Analyses revealed significant main effects of target race, \( F(1, 47) = 8.46, p = .008, \eta^2_p = 0.15 \), and target age, \( F(1, 47) = 53.37, p = .001, \eta^2_p = 0.53 \), which were qualified by a two-way interaction between target age and race, \( F(1, 47) = 25.16, p = .001, \eta^2_p = 0.35 \). When observing White targets, participants judged anger as appearing sooner on an old face (\( M = 7.23 \) s, \( SD = 3.48 \) s) than on a young face (\( M = 9.45 \) s, \( SD = 4.05 \) s), \( t(47) = 9.45, p = .001, d = 0.58 \). For Black targets, the opposite pattern, such that participants saw anger appear sooner on a young face (\( M = 8.66 \) s, \( SD = 3.42 \) s) than on an old face (\( M = 9.13 \) s, \( SD = 3.84 \) s), was marginally significant, \( t(47) = -1.74, p = .085, d = 0.13 \).

Transition Type 5: Happy-to-Neutral

Analyses revealed a two-way interaction between target age and target race, \( F(1, 47) = 13.57, p = .001, \eta^2_p = 0.22 \). When observing White targets, participants judged happiness as lasting longer on a young face (\( M = 8.86 \) s, \( SD = 3.33 \) s) than on an old face (\( M = 8.17 \) s, \( SD = 3.77 \) s), \( t(47) = 2.88, p = .008, d = 0.19 \). The opposite pattern was found for Black targets, such that participants saw happiness lasting longer on an old (\( M = 9.11 \) s, \( SD = 3.10 \) s) compared to a young face (\( M = 8.43 \) s, \( SD = 3.40 \) s), \( t(47) = -2.25, p = .030, d = 0.21 \).

Transition Type 6: Neutral-to-Happy

For this transition, analyses revealed a two-way interaction between target age and target race, \( F(1, 47) = 14.76, p = .001, \eta^2_p = 0.24 \). When observing White targets, participants judged happiness as appearing sooner on a young face (\( M = 6.60 \) s, \( SD = 4.62 \) s) than on an old face (\( M = 7.51 \) s, \( SD = 4.10 \) s), \( t(47) = -2.76, p = .008, d = 0.21 \). The opposite pattern was found for
Black targets, such that participants saw happiness appear sooner on an old face ($M = 6.28$ s, $SD = 4.19$ s) than on a young face ($M = 7.23$ s, $SD = 3.71$ s), $t(47) = 3.53$, $p = .001$, $d = 0.24$.

**Study 1b Method**

*Participants and Design*

Participants were 59 non-Black older adults (36 women; Age: range = 60-80, $M = 70.6$, $SD = 5.7$) drawn from the University of Toronto Department of Psychology Adult Volunteer Pool (AVP). The AVP is a pool of over 2300 adults (70% female) ranging in age from 29 to 102 years old ($M = 71.4$, $SD = 9.9$). The vast majority of participants (92%) are over the age of 60. AVP participants are recruited from across the Greater Toronto Area via advertisements in both major and senior’s newspapers and are eligible to participate in up to 4 studies per year. Participants receive $12 per hour to cover transportation expenses associated with traveling to the University of Toronto. Members of the AVP are generally well-educated, and have completed 14.9 years of education on average (range: 6 – 30 years, $SD = 2.8$ years). All AVP participants recruited for this study were community-dwelling, fluent in English, and had lived in North America since they were at least 10 years old. The majority of participants were of European descent, reflecting the composition of the AVP (83.1% European, 6.8% East/Southeast Asian, 1.7% South Asian, 1.7% Middle Eastern, 1.7% Aboriginal, 5.1% unspecified). The within-subjects designed employed in this study was identical to that employed in Study 1a.

*Materials and procedure*

The same materials and procedure employed in Study 1a were used in Study 1b. Participants were asked to watch the set of videos described in Study 1a and to press the space bar when they judged the first emotion to have completely disappeared from the face. Before
leaving the laboratory, participants completed a demographics questionnaire and were fully debriefed.

**Study 1b Results**

As in Study 1a, I was interested in the mean time at which participants indicated that the first emotion had completely disappeared from the target face. To examine this variable, I conducted six two-way repeated measures analyses of variance (ANOVAs) with target age (young, old) and race (White, Black) entered as within-subjects factors. Paired-samples t-tests were used to test significant effects. Mean response latencies for the facial emotion change-detection task by target age and race for the six emotional transitions are displayed in Figure 1.3.
Figure 1.3: Mean response latencies among older adult participants for the facial emotion change-detection task by target age and race for each of the six emotional transitions.
Transition Type 1: Happy-to-Angry

Analyses revealed significant main effects of target age, $F(1, 58) = 5.76, p = .020, \eta^2_p = 0.09$, and target race, $F(1, 58) = 14.69, p < .001, \eta^2_p = 0.20$, which were qualified by a two-way interaction between target age and race, $F(1, 58) = 6.16, p = .016, \eta^2_p = 0.10$. When observing White targets, participants judged anger as appearing sooner on an old ($M = 9.65$ s, $SD = 4.83$ s) compared to a young face ($M = 10.60$ s, $SD = 5.48$ s), $t(58) = 3.14, p = .003, d = 0.18$. No difference was observed for perceptions of young Black ($M = 10.83$ s, $SD = 4.78$ s) and old Black ($M = 10.73$ s, $SD = 4.93$ s) targets, $t(58) = 0.38, p > .50, d = 0.02$.

Transition Type 2: Angry-to-Happy

For this transition, analyses revealed a significant main effect of target age, $F(1, 58) = 9.47, p = .003, \eta^2_p = 0.14$, which was qualified by a two-way interaction between target age and race, $F(1, 58) = 64.13, p < .001, \eta^2_p = 0.53$. When observing White targets, participants judged anger as lasting longer on an old ($M = 10.30$ s, $SD = 4.78$ s) compared to a young face ($M = 8.05$ s, $SD = 3.12$ s), $t(58) = -6.84, p < .001, d = 0.57$. This pattern was reversed for Black targets, such that participants saw anger last longer on a young ($M = 9.43$ s, $SD = 3.88$ s) compared to an old face ($M = 8.45$ s, $SD = 4.02$ s), $t(58) = 4.08, p < .001, d = 0.25$.

Transition Type 3: Angry-to-Neutral

Analyses revealed no significant main effects or interaction for this transition, all $ps > .08$. 
Transition Type 4: Neutral-to-Angry

Analyses revealed a significant main effect of target age, $F(1, 58) = 8.48, p = .005, \eta^2_p = 0.13$, and a marginally significant main effect of target race, $F(1, 58) = 3.60, p = .063, \eta^2_p = 0.58$, which were qualified by a two-way interaction between target age and race, $F(1, 58) = 13.31, p = .001, \eta^2_p = 0.19$. When observing White targets, participants judged anger as appearing sooner on an old face ($M = 8.81$ s, $SD = 4.45$ s) than on a young face ($M = 9.79$ s, $SD = 4.39$ s), $t(58) = 4.05, p < .001, d = 0.22$. For Black targets, the difference in perception of the young ($M = 8.65$ s, $SD = 4.57$ s) and old faces ($M = 8.97$ s, $SD = 4.45$ s) was not significant, $t(58) = -1.25, p > .20, d = 0.07$.

Transition Type 5: Happy-to-Neutral

Analyses revealed only a main effect of target race, $F(1, 58) = 3.73, p = .050, \eta^2_p = 0.06$. Overall, participants saw happiness last longer on Black faces ($M = 9.46$ s, $SD = 4.53$ s) than on White faces ($M = 9.13$ s, $SD = 4.23$ s), regardless of the age of the face.

Transition Type 6: Neutral-to-Happy

For this last transition, analyses revealed a significant main effect of target age, $F(1, 58) = 25.71, p < .001, \eta^2_p = 0.31$, which was qualified by a two-way interaction between target age and race, $F(1, 58) = 39.03, p < .001, \eta^2_p = 0.40$. When observing Black targets, participants saw happiness appear much sooner on an old face ($M = 5.82$ s, $SD = 2.82$ s) than on a young face ($M = 8.32$ s, $SD = 4.98$ s), $t(58) = 7.73, p < .001, d = 0.64$. For White targets, the difference in perception of the young ($M = 7.61$ s, $SD = 5.60$ s) and old faces ($M = 7.22$ s, $SD = 4.00$ s) was not significant, $t(58) = 1.15, p > .20, d = 0.08$. 
Discussion

These studies examined perceptions of emotion on faces of multiply-categorizable individuals. I specifically examined the co-activation of age-related and race-related stereotypes for young and old Black and White men. Among young perceivers, I found evidence for biased perceptions of both negative and positive emotions across six transitions. Among old perceivers, I found evidence of this biased perception across four transitions. For Black faces, anger is seen to linger longer and appear sooner on a young compared to an old face; the reverse is true for White faces. When examining happiness, I found that for Black faces, happiness is seen to disappear sooner and appear later on a young compared to an old face and, once again, the reverse is true for White faces. To my knowledge, these results are the first to show bias in perceptions of both positive and negative emotions. These findings also lend further support to research showing that stereotypes and expectations have the potential to affect low-level cognitive processes including face processing (e.g. Eberhardt, Dasgupta, & Banaszynski, 2003; Hugenberg & Bodenhausen, 2003; Inzlicht et al., 2008; Macrae et al., 1994).

Among older perceivers, I did not find significant interactions between target age and target race for the transitions from angry to neutral and from happy to neutral. In the transition from happy to neutral, I did observe a main effect of race, such that participants saw happiness linger longer on all Black faces, regardless of age. It is unclear exactly why I did not observe a similar pattern in these two transitions as in the other four transitions as with younger adult perceivers. This is especially puzzling given that the transitions from neutral to happy and neutral to angry resulted in the expected pattern. Further targeted research with transitions from emotional start-points to neutral endpoints would be necessary to confirm and explain these results.
In this study, I looked beyond the double-jeopardy hypothesis to determine if the combination of elderly and Black stereotypes results in something more complex than a simple additive function. Indeed, these results suggest that the combination of these two stereotypes is in fact beneficial to older Black men, with activation of the elderly stereotype conferring something of a buffer against the Black-hostility stereotype, either through selective inhibition or subtyping. I believe that this result is in part due to differential activation of distinct components of the older adult stereotype for different racial groups. More specifically, these results suggest that older Black and White men activate the stereotypes which most strikingly contrast them against their younger counterparts. For example, older White men may activate the rude/curmudgeonly components of the older adult stereotype more than older Black men, while older Black men may activate the frail and warm components more than older White men. Of course, as mentioned previously, it may also be the case that the “old Black man” represents a positive sub-type, unique from its constituent categories. If this is true, these results suggest that Black men have much to look forward to in old age compared to their White counterparts.

These hypotheses are examined further in Studies 3, 4, and 5. In addition to ruling out the double-jeopardy hypothesis, these results also do not support the global inhibition hypothesis, in that across the six transitions, particularly with younger perceivers, it was the interaction between the target’s age and race, not one or the other, that predicted perceived facial affect.

The results presented in these two studies are in line with previous work which suggests that multiple categorization can reduce intergroup bias (Crisp & Hewstone, 1999; Crisp, Hewstone, & Rubin, 2001). However, unlike Studies 1a and 1b which focus on only two categories, Crisp and his colleagues suggest that targets must be able to be categorized into more than two dimensions for multiple categorization to reduce bias. According to these researchers, when more than two dimensions are activated, the social context becomes too complex for the
application or combination of usual category information. Instead, a \textit{decategoryization} effect encourages individualization and, therefore, less bias against these complex targets. In contrast to this work, the two studies presented here show reduction in bias against an old Black target based on the co-activation of just two category memberships: Black and old. Because participants in these studies are dealing with a relatively simple two-category situation, it is not likely that decategorization is responsible for the effects seen here. Rather, a subtyping or selective inhibition mechanism seems much more plausible.

In sum, these first two studies highlight the fact that perceptions of multiply-categorizable targets are complex and involve more than just simple addition of stereotype components. The finding that one stereotype may protect against another suggests a novel direction for future intervention-related work.
Chapter 2

Perceptions following Age-Based or Race-Based Priming

Introduction

The first chapter of this thesis reports on two studies showing that the interplay between Black and old age stereotypes results in unique perceptual consequences for older Black men. Specifically, I found evidence that older Black men are perceived more positively than young Black men, a pattern opposite to that observed among White targets. When participants make judgments about White targets, they show more bias against an old target than a young target, reflecting generally held negative attitudes toward older adults (Kite et al., 2005). This second chapter reports the results of a study aimed at replicating and extending the studies reported in Chapter 1. Using a semantic categorization task, I sought to prime concepts related to either “age” or “race” in the minds of perceivers. I was interested in how participants would perceive anger and happiness on the faces of young and old Black and White men when they were explicitly primed to think about either race or age as a relevant feature.

The facial emotion change detection task used in Studies 1a and 1b is particularly useful because it allows for the measurement of online perceptual processes. However, it does not allow for an examination of the mechanisms underlying these perceptions – it is impossible to know with certainty what stereotypes are being activated, inhibited, or blended in order to arrive at the end judgments of emotional change. I reasoned that more insight about the processes going on during this task could be gained by forcing participants to consider one set of relevant categories or the other, as this would allow us to observe perceptions made while thinking primarily about age or primarily about race.
In this study, participants were assigned to one of three priming conditions: Age, Race, or Control. In all conditions, participants sorted photographs into two categories (Age: young, old; Race: Black, White; Control: plants, insects), and this priming task was followed by the same facial emotion change detection task used in Studies 1a and 1b. I hypothesized that sorting photographs into the categories young and old would prime these categories and associated stereotypes/category preferences. Likewise, sorting photographs into the categories Black and White should prime these race-base categories and their various associated stereotypes. I hypothesized that perceptions in the Age-prime condition would fall in line with age-based stereotypes, while perceptions made in the Race-prime condition would be in line with race-based stereotypes. Indeed, previous research has shown that priming one category dimension can successfully activate stereotypes associated with that category while simultaneously inhibiting stereotypes associated with a competing category (Macrae et al., 1995). Therefore, I hoped that encouraging participants to think in terms of race, for example, would excite stereotypes related to race and inhibit stereotypes related to the competing category, age.

Specifically, in the Age-prime condition, I expected that there would be activation of stereotypes about young and older adults, and a greater tendency to contrast the young targets with the old targets. I therefore expected to see a main effect of target age, such that there would be more bias against the two older targets compared to the two younger targets. I also expected that priming age would inhibit, or at least decrease, race-based differences seen in the previous two studies, such that the two young and two old targets would be evaluated more similarly than in the Control condition.

In the Race-prime condition, I expected activation of Black stereotypes and, as a consequence, a main effect of target race reflecting more bias against the two Black targets than
the two White targets. Again, I expected explicit priming of the race categories to reduce the activation of age-related stereotypes, thus reducing the difference seen between young and old targets of the same race.

The ability to compare judgments made following a neutral prime to those made following age-based or race-based primes will shed light on the processes taking place when both of these concepts are active.

Method

Participants and Design

Participants were 97 non-Black introductory psychology students (52 women; Age: range = 17-33, \( M = 19.4, SD = 3.1 \)) from the University of Toronto. The diversity of participants reflected the diversity of the Greater Toronto Area (34.0% European, 45.4% East/ Southeast Asian, 9.3% South Asian, 5.2% Middle Eastern, 1.2% Aboriginal). Participants in this study were randomly assigned to one of three prime conditions: Age, Race, or Control, resulting in a 2 (Face Age: young, old) X 2 (Face Race: Black, White) X 3 (Prime Condition: Age, Race, Control) factorial design.

Materials and procedure

Participants were invited to the laboratory to participate in two ostensibly separate studies, one examining person categorization and the other examining perception of facial expressions. Participants first completed the categorization task in order to activate relevant stereotypes (i.e., age-based or race-based). Following this, participants immediately completed
the facial emotion change-detection task used in Studies 1a and 1b. After demographics information was collected, participants were debriefed and dismissed.

In each of the priming conditions, participants were asked to sort a series of stimulus photographs into two categories. The stimulus photographs were presented individually in eight blocks of 20 trials, which were preceded by one practice block of 20 trials. The category names were presented at the top of the screen, one name at the top left of the screen and one at the top right, and participants were asked to take note of these names and to press the “e” key as quickly as possible for images described by the left concept name, and to press the “i” key as quickly as possible for images described by the right concept name. The location of category names changed randomly across blocks. A red “X” appeared when participants pressed the wrong key and participants were required to press the other key immediately to continue on with the task. Participants were encouraged to complete the task as quickly as possible.

In the Age- and Race-Prime conditions, stimulus photographs were 40 photographs of men (10 young Black, 10 young White, 10 old Black, 10 old White) selected from The Center for Vital Longevity Face Database (Minear & Park, 2004). The photographs were specifically selected from a subset of photographs which show targets facing forward with neutral expressions and which have been normalized for familiarity, memorability/distinctiveness, mood, and picture quality (Kennedy, Hope, & Raz, 2009). The photographs were presented randomly at the center of the screen. In the Age-Prime condition, participants were asked to sort the photographs into the categories “Young” and “Old”. In the Race-Prime condition, participants were asked to sort the photographs into the categories “Black” and “White”. In the Control condition, participants were asked to sort photographs of plants and insects into the categories “Plant” and “Insect”.

Results

In order to examine different rates of responding in the facial emotion change-detection task by condition, I conducted a series of six repeated measures ANOVAs with target age (young, old) and race (Black, White) entered as within-subjects factors and condition entered as a between-subjects factor. The three-way interactions between target age, target race, and condition were not significant for any of the six transitions, all $F$s < 1.00, indicating that participants responded similarly in the three conditions. In addition, none of the two-way interactions between target age or race and condition or main effects of condition were significant, all $F$s < 1.00. Although the three-way interactions were not significant, a number of significant two-way interactions between target age and target race were found, replicating many of the patterns observed in Studies 1a and 1b. These two-way interactions are discussed by transition below. As in previous studies, paired samples t-tests were used to test significant effects. Mean response latencies for the facial emotion change-detection task by target age and race for the six emotional transitions are displayed in Figure 2.1.
Figure 2.1: Mean response latencies for the facial emotion change-detection task by target age and race for each of the six emotional transitions.
Transition Type 1: Happy-to-Angry

Analyses revealed significant main effects of target age, $F(1, 94) = 11.41, p = .001, \eta^2_p = 0.11$, and target race, $F(1, 94) = 59.74, p < .001, \eta^2_p = 0.39$, which were qualified by a two-way interaction between target age and race, $F(1, 94) = 154.91, p < .001, \eta^2_p = 0.62$. When observing White targets, participants judged anger as appearing sooner on an old ($M = 7.06$ s, $SD = 2.72$ s) compared to a young face ($M = 8.99$ s, $SD = 2.82$ s), $t(96) = 10.59, p < .001, d = 0.70$. This pattern was reversed for Black targets, such that participants saw anger appear sooner on a young ($M = 8.51$ s, $SD = 2.92$ s) compared to an old face ($M = 9.42$ s, $SD = 2.62$ s), $t(96) = -4.16, p < .001, d = 0.33$.

Transition Type 2: Angry-to-Happy

For this transition, analyses revealed a significant main effect of target race, $F(1, 94) = 28.41, p < .001, \eta^2_p = 0.23$, which was qualified by a two-way interaction between target age and race, $F(1, 94) = 190.98, p < .001, \eta^2_p = 0.67$. When observing White targets, participants judged anger as lasting longer on an old ($M = 9.60$ s, $SD = 2.28$ s) compared to a young face ($M = 8.08$ s, $SD = 2.31$ s), $t(96) = -10.47, p < .001, d = 0.66$. Again, this pattern was reversed for Black targets, such that participants saw anger last longer on a young ($M = 8.90$ s, $SD = 2.40$ s) compared to an old face ($M = 7.72$ s, $SD = 2.05$ s), $t(96) = 6.45, p < .001, d = 0.53$.

Transition Type 3: Angry-to-Neutral

Analyses revealed a main effect of target age, $F(1, 94) = 16.71, p < .001, \eta^2_p = 0.15$, which was qualified by a two-way interaction between target age and race, $F(1, 94) = 29.80, p < .001, \eta^2_p = 0.24$. Participants judged anger as lasting longer on an old White face ($M = 10.53$ s, $SD = 2.64$ s) than on a young White face ($M = 9.18$ s, $SD = 2.25$ s), $t(96) = -5.88, p < .001, d =
There was no difference in perceptions of young ($M = 9.98 \text{ s}, SD = 2.21 \text{ s}$) and old ($M = 9.85 \text{ s}, SD = 2.03 \text{ s}$) Black faces in this transition from angry to neural, $p > .60$.

**Transition Type 4: Neutral-to-Angry**

Analyses revealed significant main effects of target race, $F(1, 94) = 7.58, p = .007, \eta_p^2 = 0.08$, and target age, $F(1, 94) = 57.86, p < .001, \eta_p^2 = 0.38$, which were qualified by a two-way interaction between target age and race, $F(1, 94) = 40.03, p < .001, \eta_p^2 = 0.30$. When observing White targets, participants judged anger as appearing sooner on an old face ($M = 6.63 \text{ s}, SD = 1.89 \text{ s}$) than on a young face ($M = 8.41 \text{ s}, SD = 2.04 \text{ s}$), $t(96) = 12.24, p < .001, d = 0.91$. For young ($M = 7.69 \text{ s}, SD = 2.30 \text{ s}$) and old ($M = 7.98 \text{ s}, SD = 2.26 \text{ s}$) Black targets, there was no significant difference in perceptions of anger onset from neutral, $p = .18$.

**Transition Type 5: Happy-to-Neutral**

Analyses revealed a main effect of target race, $F(1, 94) = 4.03, p = .05, \eta_p^2 = 0.04$, which was qualified by a two-way interaction between target age and target race, $F(1, 94) = 90.93, p < .001, \eta_p^2 = 0.49$. When observing White targets, participants judged happiness as lasting longer on a young face ($M = 8.60 \text{ s}, SD = 2.63 \text{ s}$) than on an old face ($M = 7.58 \text{ s}, SD = 2.40 \text{ s}$), $t(96) = 6.67, p < .001, d = 0.40$. The opposite pattern was found for Black targets, such that participants saw happiness lasting longer on an old ($M = 8.74 \text{ s}, SD = 2.58 \text{ s}$) compared to a young face ($M = 7.90 \text{ s}, SD = 2.52 \text{ s}$), $t(96) = -4.70, p < .001, d = 0.33$.

**Transition Type 6: Neutral-to-Happy**

For this transition, analyses revealed a main effect of target age, $F(1, 94) = 13.83, p < .001, \eta_p^2 = 0.13$, which was qualified by a two-way interaction between target age and target
race, $F(1, 94) = 33.42$, $p < .001$, $\eta^2_p = 0.26$. When observing White targets, participants judged happiness as appearing sooner on a young face ($M = 5.24$ s, $SD = 1.73$ s) than on an old face ($M = 6.30$ s, $SD = 2.09$ s), $t(96) = -7.80$, $p < .001$, $d = 0.55$. The opposite pattern was found for Black targets, such that participants saw happiness appear sooner on an old face ($M = 5.64$ s, $SD = 2.03$ s) than on a young face ($M = 6.00$ s, $SD = 2.20$ s), $t(96) = 2.02$, $p = .05$, $d = 0.17$.

**Discussion**

The goal of this study was to more fully understand the results observed in Studies 1a and 1b. I hoped that introducing a priming manipulation would help to elucidate the process through which co-activation of age-related and race-related stereotypes lead to different consequences for Black and White targets. Unfortunately, it appears that this priming manipulation was unsuccessful; across the six transitions, the main effect of condition and any interactions involving condition were not significant.

It is likely that the priming manipulation used in this study was not strong enough to activate the desired categories and simultaneously inhibit the other categories. For example, in the age-prime condition, participants could successfully complete the sorting task while still having the race categories in mind. Sorting the pictures into the categories young and old does not guarantee (or even require) that participants were not simultaneously thinking of the categories “Black” and “White” (e.g., this is a *young* Black face, it goes in the category young; this is an *old* White face, it goes in the category old). Because the faces only varied along two dimensions with two categories each (age: young, old; race: Black, White), all four categories could easily be held in mind while participants sorted faces according to two of the categories. In effect, both dimensions and all four categories could remain active in both of the priming conditions.
In the future, a stronger manipulation which more acutely isolates the categories Black and White from the categories young and old could prove more successful. For example, participants might be asked to sort only young targets or shapes/objects into the categories “Black” and “White”. Similarly, participants could be asked to sort a group of targets from the same racial group into the categories “young” or “old”. I could also try priming manipulations other than semantic categorization which have been used in other studies – for example, a scrambled sentence task (Banaji, Hardin, & Rothman, 1993) or priming with the specific category names of interest (Lepore & Brown, 1997). A recent study examining the weapon bias encouraged activation of race- and age-based categories using a counting procedure (Jones & Fazio, in press; see also Olson & Fazio, 2003). Participants were asked to keep a running tally of the number of Black and White or young and old target pictures presented, and the weapon bias was only observed among those participants who were asked to count based on the race of the target. This type of manipulation may prove more successful in the future, as it may encourage deeper processing (categorization and counting), rather than just simple categorization.

Although the priming manipulations were unsuccessful, I was able to replicate the patterns seen in Chapter 1 with the facial emotion change detection task. Across six transitions, I observed biased perceptions of negative (anger) and positive (happiness) emotions. When making judgments about Black faces, participants saw anger linger longer and appear sooner and happiness disappear sooner and appear later on a young compared to an old face; however, when making judgments about White faces, the opposite pattern was observed. This replication provides further evidence that the combination of elderly and Black stereotypes results in something more complex than a simple additive function and, interestingly, is beneficial for older Black men. As in Chapter 1, I suggest that the elderly stereotype may confer a buffer against the Black-hostility stereotype via selective inhibition or subtyping. Unfortunately, I am
not able to make further claims for or against either of these hypotheses following this study. I attempt to examine these hypotheses further in the Chapters 3, 4, and 5.

Another interesting finding stemming from Chapters 1 and 2 is the fact that post-hoc tests for the differences between young and old Black targets in the transition from neutral to angry were only marginally significant in Study 1a and not significant in Studies 1b and 2. Further, the difference between the two Black targets in the transition from angry to neutral was not significant in Study 2. This suggests that co-activation of elderly stereotypes may be helpful to older Black men in judgments involving positive emotions like happiness, but have no effect when only negative emotions – especially anger, which is so closely related to the hostility stereotype – are involved. When making judgments about anger, the Black stereotype might be too strong to allow for the co-activation of older adult stereotypes to have an effect. This possibility will be discussed further in the Conclusion of this thesis.

In sum, Chapter 2 provides further evidence that cross-categorization is more complex than the double-jeopardy hypothesis would suggest. The following three chapters aim to examine more simple perceptions of young and old Black and White targets in order to provide a more basic understanding of the stereotypes that characterize and influence perceptions of each. Rather than using the facial emotion change detection tasks used in the first two Chapters, the next three studies utilize either still images (Chapters 3 and 5) or imagined famous exemplars (Chapter 4) from the four categories of interest. I seek to establish an understanding of the constellation of traits thought to represent each of the four types of targets in order to better understand how old age and Black stereotypes come to interact.
Chapter 3
Perception Across Time

Introduction

The studies reported in the first two chapters of this thesis uncover an interesting interplay between Black and older adult stereotypes. In order to understand this interaction more fully, I sought to examine basic perceptions of young and old Black and White targets. While previous research has examined perceptions of individuals belonging to one or the other of these racial and age groups, research has yet to directly compare perceptions of these four types of targets on important stereotypical dimensions. For example, do individuals perceive young and old Black men as equally hostile? Are Black and White old men judged to be equally curmudgeonly or equally frail? This type of examination is important, as previous research has largely failed to assess how aging stereotypes apply across racial groups, or how racial stereotypes apply across age groups. In order to address these questions, I asked participants to rate individuals from these four target groups on a variety of traits.

One explanation for the results of the studies reported in Chapters 1 and 2 is that there may be differential activation of distinct components of the older adult stereotype for different racial groups. More specifically, the results suggested a pattern of selective inhibition, beginning with older Black and White adults activating the stereotypes which most strikingly contrast them against their younger counterparts. For example, older White adults may activate the rude/curmudgeonly components of the older adult stereotype more than older Black adults, while older Black adults may activate the frail and warm components more than older White adults. For older White adults, then, the negative stereotypes associated with old age could
inhibit the more positive stereotypes and attitudes toward younger adults. For older Black adults, the warm/kind stereotypes could inhibit the negative hostility-related stereotypes associated with young Black men. The first step in examining these questions and hypotheses must be descriptive, collecting and comparing trait ratings for these four types of targets.

Another question I sought to examine in this study is specifically related to age-related change over the lifespan. Because age is a variable in constant flux, the degree to which individuals are characterized by any given age stereotype is also dynamic. I was interested in examining whether there are any race-based assumptions about how Black and White individuals change over time. In particular, I was interested in the types of traits that are thought to characterize these targets across their lifespans. In order to examine the perceived trait trajectory of these targets, I asked participants to imagine and rate young targets at age 75, and to imagine and rate old targets at age 25. This type of design allows us to examine generational and longitudinal stereotype effects. For example, individuals may have a strikingly different perception of what young Black men were like in the 1930s compared to what young Black men are like in 2010. In terms of longitudinal change, this type of design gives participants the opportunity to indicate whether they think traits remain constant in individuals as they age, and whether this varies between racial groups.

To examine current perceptions of young and old Black and White targets and how these targets are thought to change over time, I asked participants to provide ratings for one of these targets on 35 descriptive traits. Participants who were asked to make judgments about young targets were then asked to imagine the target at age 75 and predict ratings for the same 35 traits. Those asked to make judgments about old targets imagined the target at age 25 and rated him again on the traits in question. I was interested in participants’ current perceptions of these
targets, their predicted trajectories over time, and the ratings of overlapping targets (e.g., current ratings of young Black and White men and past ratings of old Black and White men). Although my analyses were largely exploratory in nature, I was guided by some hypotheses emerging from my previous studies. Specifically, I thought that people would have more positive perceptions of old compared to young Black men, but more positive perceptions of young compared to old White men. Further, I hypothesized that participants might predict that White targets will become more negative (e.g., less warm, more rude) over time, but, in contrast, predict that Black targets will become less negative (e.g., more warm, less hostile) over time. As a caveat, I must acknowledge that this pattern of results would lend support to both the selective inhibition and subtyping hypotheses, in that older Black men may be buffered against negative stereotypes associated with their racial group due to the co-activation of stereotypes associated with their age group, or simply because older Black men are a positive subtype of the Black man category.

Method

Participants and Design

Participants were 125 undergraduate students (65 women) from the University of Toronto, with an age range of 17 to 35 years (\(M = 19.14, SD = 2.77\)). The sample was ethnically diverse, with a majority of participants reporting East and Southeast Asian descent (46.4%; 28.0% European, 8.8% South Asian, 7.2% Middle Eastern, 2.4% African, 1.6% Latin, Central, and South American, 1.6% Caribbean, 4.0% Other). Participants were recruited from an introductory psychology course, and were given course credit for completion of the experiment.
Participants were randomly assigned to one of four target conditions: young Black, old Black, young White, old White.

**Procedure**

Participants were invited to the laboratory for a study on person perception. They were told that they would be asked to make judgments about a randomly selected individual on a number of different traits. Participants were seated at a computer and told that the computer would randomly select an individual for them to rate and that an image of that individual would appear on the screen. In the two young conditions, an image of a 25-year old male (either Black or White, depending on condition) appeared on screen; an image of a 75-year old male (either Black or White) appeared on screen in the two old conditions. These images were chosen from the same normalized set of faces used in Study 2 (Kennedy et al., 2009).

Participants made ratings of the individuals on a series of 35 traits (see Table 3.1) chosen from a set of 100 adjectives used to assess the Big-Five factors of personality (Goldberg, 1992). Participants were asked to think carefully about the individual in the photograph and to then rate each adjective (e.g., extraverted, warm, calm, friendly, dangerous, hardworking) according to how well it described the individual on a scale from 1 (not at all descriptive) to 5 (very descriptive). Therefore, all participants completed these ratings of the target individuals in the present.

After rating the individual on the 35 traits, participants in the young target conditions were asked to “think about what this person will be like when he is 75 years old”. They were asked to take their time and really imagine the person at age 75, and to then prospectively rate
the target on the same 35 traits. Only participants in the young target conditions made these future trait ratings.

In the two old target conditions, participants were next asked to think about and really take time to imagine the target individual when he was 25 years old. They were asked to make retrospective ratings of the target on the 35 traits. Only participants in the old target conditions made these past trait ratings.

After rating targets on the 35 traits in the present and then in the future or past, I collected demographic information and participants were debriefed and dismissed.

Results

In this study, I was interested in basic perceptions of young and old Black and White targets in the present and across time. To this end, I had participants rate young and old Black and White targets on a series of traits at three time points. All four targets were rated on their present characteristics. In addition, young targets were also rated with regard to their future characteristics, and old targets were rated with regard to their past characteristics. In order to analyze the results of the trait ratings, I employed a factor analysis which reduced the data to two main factors. Once I extracted these two factors, I used two-way target race x target age ANOVAs to examine perceptions of warmth and power of the four targets in the present. I then ran a series of repeated measures ANOVAs to observe predicted change over time. Because the temporal judgments differed, with ratings made for the past for old targets and for the future for young targets, these repeated measures ANOVAs were conducted separately for ease of interpretation. Following these initial analyses, I conducted two-way ANOVAs to examine differences in ratings for overlapping targets (i.e., present ratings of young targets overlap with
past ratings of old targets; present ratings of old targets overlap with future ratings of young targets).

**Factor Analysis of Traits and Resulting Scale Reliabilities**

In order to group the traits, I employed an exploratory Factor Analysis using Maximum Likelihood Estimation and Oblimin rotation with Kaiser normalization. An examination of the resulting scree plot and structure matrix revealed two factors which together accounted for 39.33% of the total variance (factor 1: 26.13%; factor 2: 13.20%). The loadings for each factor are displayed in Table 3.1. I used these two factors as an indication of how to appropriately combine the items into scales. Three traits which loaded onto both factors (aggressive, angry, and hostile) and two traits which did not load onto either (talkative, creative) were removed from further analysis. Based on the content of traits loading onto each factor, I interpreted the first factor as reflecting “Warmth” (20 items) and the second factor as reflecting “Power” (10 items).

Next, I averaged together the items loading on each factor to create mean Warmth and mean Power scores for past, present, and future ratings. The scale reliabilities for these groupings were very good (Warmth: past, $\alpha = 0.89$; present, $\alpha = 0.91$; future, $\alpha = 0.88$; Power: past, $\alpha = 0.92$; present, $\alpha = 0.82$; future, $\alpha = 0.93$). These mean scores were used in all subsequent analyses.
Table 3.1: Rotated factor matrix for trait ratings.

<table>
<thead>
<tr>
<th>Traits</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warmth</td>
<td>Power</td>
</tr>
<tr>
<td>Friendly</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>Warm</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>Cold</td>
<td>-.71</td>
<td></td>
</tr>
<tr>
<td>Trustworthy</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td>Reliable</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>Happy</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>Dangerous</td>
<td>-.65</td>
<td></td>
</tr>
<tr>
<td>Intelligent</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td>Aggressive*</td>
<td>-.63</td>
<td>.48</td>
</tr>
<tr>
<td>Rude</td>
<td>-.63</td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Grumpy</td>
<td>-.53</td>
<td></td>
</tr>
<tr>
<td>Irresponsible</td>
<td>-.53</td>
<td></td>
</tr>
<tr>
<td>Hardworking</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>Interesting</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>Angry*</td>
<td>-.47</td>
<td>.30</td>
</tr>
<tr>
<td>Sad</td>
<td>-.46</td>
<td></td>
</tr>
<tr>
<td>Lazy</td>
<td>-.45</td>
<td></td>
</tr>
<tr>
<td>Talented</td>
<td>.35</td>
<td></td>
</tr>
<tr>
<td>Musical</td>
<td>.35</td>
<td></td>
</tr>
<tr>
<td>Calm</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>Talkative*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athletic</td>
<td></td>
<td>.77</td>
</tr>
<tr>
<td>Strong</td>
<td></td>
<td>.67</td>
</tr>
<tr>
<td>Attractive</td>
<td></td>
<td>.62</td>
</tr>
<tr>
<td>Trait</td>
<td>Loading</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Powerful</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td>Handsome</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>.59</td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>-.51</td>
<td></td>
</tr>
<tr>
<td>Frail</td>
<td>-.46</td>
<td></td>
</tr>
<tr>
<td>Hostile*</td>
<td>-.36</td>
<td></td>
</tr>
<tr>
<td>Extraverted</td>
<td>.33</td>
<td></td>
</tr>
<tr>
<td>Funny</td>
<td>.30</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
Extraction Method: Maximum Likelihood.
Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in five iterations.
* Indicates that item was removed, either due to lack of loading or dual-loading.

*Perceptions of Present Warmth and Power*

Two-way ANOVAs with target age (young, old) and target race (Black, White) as fixed factors were used to examine differences in current perceptions of Warmth (see present panel in Figure 3.1) and Power (see present panel in Figure 3.2) between the four target types. Analyses of the Warmth ratings revealed significant effects of target age, $F(1, 121) = 37.24, p < .001, \eta^2_p = 0.24$, and target race, $F(1, 121) = 5.32, p = .023, \eta^2_p = 0.04$. Participants perceived Black targets ($M = 3.13, SD = 0.61$) as warmer than White targets ($M = 2.94, SD = 0.47$), and perceived old targets ($M = 3.30, SD = 0.50$) as warmer than young targets ($M = 2.78, SD = 0.48$). Results also revealed a marginally significant interaction between target age and target race, $F(1, 121) = 3.57, p = .061, \eta^2_p = 0.03$. Post-hoc tests revealed that the older Black target ($M = 3.45, SD = 0.47$) was perceived as significantly warmer than the other three targets, followed by the old White target ($M = 3.12, SD = 0.55$), all $ps < .05$. The young Black ($M = 2.80, SD = 0.55$) and young White ($M = 2.76, SD = 0.40$) targets were perceived as the least
Analysis of the Power ratings also revealed significant effects of target age $F(1, 121) = 39.85, p < .001, \eta^2_p = 0.25$ and target race, $F(1, 121) = 4.92, p = .028, \eta^2_p = 0.04$. Participants perceived Black targets ($M = 3.04, SD = 0.56$) as more powerful than White targets ($M = 2.83, SD = 0.59$), and perceived young targets ($M = 3.21, SD = 0.50$) as more powerful than old targets ($M = 2.65, SD = 0.52$). The interaction between target age and target race was again marginal, $F(1, 121) = 2.69, p = .100, \eta^2_p = 0.02$. The young Black target was perceived as the most powerful of the four targets ($M = 3.38, SD = 0.32$), followed by the young White target ($M = 3.04, SD = 0.59$), $ps < .05$. The old Black ($M = 2.67, SD = 0.52$) and old White ($M = 2.62, SD = 0.53$) targets were perceived as the least powerful, $ps < .05$, but did not differ from each other, $p > .99$.

**Perception of Warmth and Power Across Time**

Following my analysis of perceptions of current warmth and power, I looked to see how participants envisioned the targets changing over time. In the two young conditions, participants rated targets in the present and then prospectively, predicting what the targets might be like in the future. In the two old conditions, participants rated targets in the present and then retrospectively, predicting what the targets might have been like in the past. For clarity of interpretation, I examined change over time separately for the young and old targets to avoid combining prospective and retrospective predictions. For each age group, I ran two repeated measures ANOVAs (one for Warmth, one for Power) with time entered as a within-subjects factor (young targets: time 1 = present, time 2 = future; old targets: time 1 = past, time 2 = present) and target race entered as a between-subjects factors. Paired and independent samples t-tests were used to probe significant interaction effects.
Predicting Changes in Warmth and Power in Young Targets. As shown via the solid lines in Figure 3.1, analyses revealed a main effect of time on ratings of warmth, $F(1, 61) = 6.48, p = .013, \eta_p^2 = 0.10$. Participants anticipated that both young targets, regardless of race, would become warmer over time (present: $M = 2.78, SD = 0.48$; future: $M = 2.93, SD = 0.55$). The interaction between time and target race was not significant, $F < 1.00$.

Analyses also revealed a main effect of time on ratings of power, $F(1, 61) = 182.05, p < .001, \eta_p^2 = 0.75$, such that participants anticipated that both young targets would become less powerful over time (present: $M = 3.21, SD = 0.50$; future: $M = 2.23, SD = 0.43$). This main effect was qualified by a two-way interaction between time and target race, $F(1, 61) = 6.34, p = .014, \eta_p^2 = 0.09$. These results are displayed via the solid lines in Figure 3.2. Post-hoc tests revealed that participants judged the young Black target ($M = 3.38, SD = 0.32$) to be more powerful than the young White target ($M = 3.04, SD = 0.59$) in the present, $t(61) = 2.91, p = .005; d = 0.75$. However, participants predicted that both the Black ($M = 2.22, SD = 0.46$) and White target ($M = 2.24, SD = 0.40$) would decrease to the same level of power at age 75, $t(61) = 0.21, p > .50; d = 0.05$.

Predicting Changes in Warmth and Power in Old Targets. As shown via the dashed lines in Figure 3.1, analyses revealed a significant two-way interaction between time and target race when predicting warmth among old targets, $F(1, 61) = 16.91, p < .001, \eta_p^2 = 0.22$. Post-hoc tests revealed that the old Black target ($M = 3.48, SD = 0.47$) was judged to be warmer than the old White target ($M = 3.12, SD = 0.47$) in the present, $t(61) = 3.00, p = .004; d = 0.78$. However, this pattern was reversed when participants made retrospective ratings. These ratings revealed that participants predicted that the older Black target ($M = 3.20, SD = 0.43$) had been less warm than the older White target ($M = 3.41, SD = 0.45$) at age 25, $t(61) = -1.89, p = .05; d = 0.48$, a pattern reminiscent of the cross-over interactions observed in Studies 1a, 1b, and 2. Paired
samples t-tests confirmed that although participants predicted that the old Black target had become warmer over time, $t(30) = -3.04, p = .005, d = 0.62$, the old White target was perceived as having become less warm over time, $t(30) = -2.79, p = .009, d = 0.63$.

Looking next to predicted changes in power among old targets, analyses revealed a main effect of time on ratings of power, $F(1, 61) = 188.39, p < .001, \eta_p^2 = 0.76$. Participants predicted that both old targets had become less powerful over time (past: $M = 3.80, SD = 0.45$; present: $M = 2.65, SD = 0.52$). A marginally significant interaction between time and target race was also observed, $F(1, 61) = 3.12, p = .08, \eta_p^2 = 0.05$. Examination of this marginal interaction revealed that participants judged the old White target ($M = 3.92, SD = 0.42$) to have been more powerful at age 25 than the old Black target ($M = 3.68, SD = 0.45$) had been at age 25, $t(61) = -2.21, p = .03; d = 0.55$. However, participants perceived no difference between the old Black ($M = 2.67, SD = 0.52$) and old White ($M = 2.62, SD = 0.53$) targets in terms of present levels of power, $t(61) = 0.71, p > .50; d = 0.10$. These results are displayed via the dashed lines in Figure 3.2.
Figure 3.1: Ratings of warmth for each target at past, present, and future time-points.

Figure 3.2: Ratings of power for each target at past, present, and future time-points.
Perceptions of Warmth and Power of Overlapping Targets

I conducted a final set of analyses to determine how participants perceived targets who theoretically overlap in time. More specifically, the following are all ratings of 25-year old men: young Black present, young White present, old Black past, and old White past, while the following are all ratings of 75-year old men: old Black present, old White present, young Black future, and young White future. Four two-way ANOVAs with target age (young, old) and target race (Black, White) as fixed factors were used to examine differences in perceptions of these overlapping targets in terms of Warmth and Power. The mean ratings at these overlap points are displayed in Figures 3.3 (warmth) and 3.4 (power).

I first looked at ratings of warmth among targets at age 25. This analysis revealed a significant main effect of target age, $F(1, 121) = 39.63, p < .001, \eta_p^2 = 0.25$, such that participants imagined the two older targets to have been warmer at age 25 ($M = 3.30, SD = 0.45$) than they perceived the two young targets to be currently ($M = 2.78, SD = 0.48$).

Next, I examined ratings of power among targets at age 25. This analysis revealed a main effect of target age, $F(1, 121) = 52.71, p < .001, \eta_p^2 = 0.30$, which was qualified by a significant interaction between target age and target race, $F(1, 121) = 13.18, p < .001, \eta_p^2 = 0.10$. Post-hoc tests revealed that of all the targets, participants perceived the young White target to be the least powerful ($M = 3.04, SD = 0.59$), $ps < .02$. The young Black target ($M = 3.38, SD = 0.32$) was judged to be more powerful than the young White target, but less powerful than the old White target ($M = 3.92, SD = 0.43$) was perceived to have been at age 25, $ps < .02$. Ratings of the old Black target ($M = 3.68, SD = 0.45$) at age 25 fell between the ratings for the young Black target and the old White target in the past, but did not differ from either, $ps > .10$.

Following the analysis of targets at age 25, I moved to an analysis of targets who theoretically overlapped at age 75. Looking first at ratings of warmth, I found significant main
effects of target age, $F(1, 121) = 16.11, p < .001, \eta_p^2 = 0.12$, and target race, $F(1, 121) = 4.04, p = .047, \eta_p^2 = 0.03$. Specifically, old targets ($M = 3.30, SD = 0.50$) were perceived as warmer than young targets ($M = 2.93, SD = 0.55$) were predicted to be at age 75, and Black targets ($M = 3.20, SD = 0.55$) were perceived to be warmer than White targets ($M = 3.02, SD = 0.55$). The interaction between target age and race was marginally significant, $F(1, 121) = 3.54, p = .062, \eta_p^2 = 0.03$. Post-hoc tests examining this marginal interaction revealed that of all the targets, participants perceived the old Black target to be the most warm ($M = 3.45, SD = 0.47$), $ps < .05$. Ratings of the other three targets did not differ from each other, $ps > .50$.

Finally, I examined ratings of power of targets who theoretically overlap at age 75. This analysis revealed main effects of target age, $F(1, 121) = 23.88, p < .001, \eta_p^2 = 0.17$. Post-hoc tests revealed that old targets ($M = 2.65, SD = 0.52$) were perceived as more powerful than young targets ($M = 2.23, SD = 0.43$) were predicted to be at age 75, $p < .001$. 

Figure 3.3: Current and retro/prospective ratings of warmth for each target at age 25 and age 75.

Figure 3.4: Current and retro/prospective ratings of power for each target at age 25 and age 75.
Discussion

The body of research on old age and Black stereotypes lacks examinations of how old age stereotypes apply across different racial groups or how Black stereotypes apply across different age groups. In this study, I sought to take the first steps toward filling this gap in the literature by examining basic perceptions of young and old Black and White men. In addition to examining these basic perceptions in the present, I was also interested in how these four types of targets are thought to change over the course of their lives. By asking participants to think about and rate these targets in the present and in the past or future, I hoped to gain a better understanding of possible generation-based stereotype beliefs. Another feature of this study that allows us to examine generation-based stereotype beliefs is the ability to compare targets who conceptually overlap in time.

Based on previous findings (Kang & Chasteen, 2009), I hypothesized that participants’ perceptions of young and old targets would depend on the race of the target. For Black targets, I thought that participants would report more positive perceptions of old compared to young men. In contrast, for White targets, I thought that participants would report more positive perceptions of young compared to old men. In terms of change over time, I predicted that White men would be judged more negatively over time, while Black men would be judged less negatively over time. As mentioned previously, this pattern of results would support either a subtyping or selective inhibition explanation, so this study cannot completely disentangle these hypotheses. However, it is certainly useful to gain a better understanding of the types of stereotypes thought to characterize these targets at various time-points across the lifespan.
From the 35 traits used in this study, I extracted two main factors: warmth and power. These trait clusters map on nicely, though not exactly, to warmth and competence, the two dimensions identified in the Stereotype Content Model (Fiske et al., 2002). The extraction of these factors proved quite useful, as it enabled us to more concretely isolate the types of traits which differentiate the four targets of interest.

I first examined current perceptions of young and old Black and White men in terms of warmth and power. In line with stereotypes characterizing older adults as warm but incompetent (Cuddy et al., 2005), I found that older adults, regardless of race, were perceived to be warmer but less powerful than their young counterparts. Interestingly, the Black targets were perceived to be warmer than the White targets, although this effect was likely driven by perceptions of the old Black man, who was perceived to be the warmest of all four targets. This finding may lend support to a subtyping explanation for my findings in the first two chapters, as it appears that individuals hold exceedingly positive perceptions of older Black men in the domain of warmth. Black targets were also perceived to be more powerful than White targets, in line with stereotypes linking Black men to strength, power, and athleticism (Stone, 2002).

I next turned to an examination of how individuals perceived the four targets to change over time. Once again in line with stereotypes characterizing older adults as warm but incompetent, participants prospectively predicted that both Black and White younger adults would become warmer but less powerful over time. However, a more complex pattern of results emerged when I looked to retrospective predictions. When making retrospective predictions, participants were asked to imagine what the older targets may have been like at age 25. When making this type of prediction, I saw a different pattern of results for Black and White targets. Older Black targets were thought to have become more warm from age 25 to age 75, while older
White targets were thought to have become less warm from age 25 to age 75. This result reflects the findings of Studies 1a, 1b, and 2, in that aging is associated with increasingly positive perceptions for Black targets, but increasingly negative perceptions for White targets. This same type of pattern was not found for ratings of power over time; instead, I found just a main effect of age, such that both targets were thought to have decreased in power over time. Other researchers have suggested that warmth related traits are more malleable over time (Cuddy et al., 2005), and these results suggest that warmth related traits are also more malleable across racial groups.

Another interesting result emerged when examining retrospective predictions of power over time. When asked to imagine how older Black and White men had been at age 25, participants imagined that older Black men had been less powerful than older White men at this younger age. This is in direct contrast to the results found with ratings of currently young Black and White men; currently young Black men were judged to be more powerful than currently young White men. This reflects an interesting generational effect, such that individuals think differently about Black men 50 years ago than in the present. This is not surprising, given present-day media representations of Black-, hip-hop-, rap-, and gang-cultures as virtually synonymous. Each of the latter cultures emphasizes power and status, qualities which Black men were not readily afforded 50 years ago.

In a final set of analyses, I examined perceptions of warmth and power of overlapping targets. Interestingly, both of the older targets were thought to have been warmer at age 25 than the currently 25-year-old targets. It is likely the case that perceivers use the current higher levels of warmth of older targets as an anchor from which to make judgments about the targets’ past selves. Therefore, even though perceivers think that older targets have increased in warmth over
time, they still rate their warmth at age 25 as higher than the currently young targets. Similarly, when rating and predicting warmth at age 75, perceivers thought that the currently 75-year-old targets are warmer than the young targets will be at age 75. I also again found evidence here for positive subtyping of older Black men, in that the old Black target was thought to be the warmest of all targets at the 75-year overlap point.

At the 25-year overlap point, I also found interesting effects in terms of power judgments. Although perceivers thought that the currently young White man was the least powerful of the targets, the old White target was retrospectively rated as having been the most powerful of the targets. Again, this may reflect a contrast effect. Because older adults are thought of as lacking power and having lost that power over time, it makes sense that perceivers would think of the old White man having been much more powerful in the past. A similar relationship was not found for Black targets, suggesting again that perceivers view warmth related traits as more malleable than power related traits when making judgments about Black targets. When making judgments about the 75-year overlap point, perceivers thought that currently old targets are more powerful than young targets will be in the future. This seems to reflect particularly negative aging expectations among our young participants, and it is likely that we would see different results if older adults had been asked to make these same judgments.

In all, this study lends support to the general finding that when compared to younger adults, older adults are perceived as warmer but less powerful. However, interesting differences emerge when perceivers are asked to make judgements about change over the lifespan prospectively or retrospectively. In both types of judgements, the general finding across Black and White targets is that power decreases from young adulthood into old age. When it comes to judgments about warmth, however, race-based differences emerge when judgements are made
retrospectively, but not prospectively. Specifically, older Black men are thought to have become warmer over time, while older White men are thought to have become less warm over time. This suggests, then, that these types of retrospective judgments about warmth could be responsible for the results reported in the first two chapters. Further, this suggests that when making warmth-related judgments about older adults, perceivers, both young and old, may be making retrospective comparisons with the targets’ younger selves. This lends support to my suggestion that there may be differential activation of distinct components of the older adult stereotype for different racial groups based on the stereotypes which most strikingly contrast each older adult against their younger counterparts. This study further clarifies that the types of stereotypes responsible for this effect are most likely related to warmth (e.g., rude, warm), rather than to power or some other trait cluster.

In the next Chapter, I replicate the past, present, and future trait rating methodology employed in this study with famous exemplars from each category. By asking participants to generate famous exemplars, I hoped to be able to examine the subtyping hypothesis more directly by considering the prototypical exemplars who represent each target type.
Chapter 4

Generation of Famous Exemplars and Perception of these Famous Individuals Across Time

Introduction

Both older adults (Cohen & Kruschwitz, 1990, Dillon & Jones, 1981; Palmore, 1971; Robinson & Skill, 1995; Smith, 1979) and Black men (Entman, 1990, 1992, 1994; Entman & Rojecki, 2000; Oliver, 1994, 2003) are under- and negatively represented in various forms of media including music, television, and advertising. When older adults are portrayed in the media, they are usually presented as sick, incompetent, or antisocial (Robinson & Skill, 1995). When Black men are portrayed in the media, they are often linked to violent crime, especially in news or “reality-television” types of programming (Oliver, 2003). I thought that this negative media bias against older adults and Black men might have implications for the types of exemplars that readily come to mind when people are asked to think about these groups. In turn, these exemplars might shape the general trait-related beliefs that individuals hold about old and Black men. In this next study, my goal was to investigate participants’ most common exemplars of young and old Black and White men and to see how participants think these exemplars change over time. I asked participants to generate two exemplars from one of the four categories of interest: young Black, young White, old Black, old White. After generating these exemplars, participants were asked to rate them on a variety of positive and negative traits as in Chapter 3. Then, depending on condition, they were asked to think of their exemplars at age 25 or at age 75, and repeat the trait ratings at the imagined age.
I was interested in both the kinds of exemplars generated in each condition and the trait ratings of these exemplars. I asked participants to generate famous exemplars, and indicated that “famous” people include, but are not limited to, actors, musicians, athletes, politicians, authors, artists, scholars, and celebrities. I predicted that young White exemplars would most likely be actors or musicians, and that young Black exemplars would most likely be athletes or musicians. I expected a larger contrast between the types of older adult exemplars generated. Because Black men have traditionally been underrepresented in politics and academics, I predicted that participants would have a hard time generating exemplars from these two categories. Instead, I imagined that the majority of older Black exemplars generated would be actors or musicians. In contrast, when thinking about older White men, I expected that participants would be likely to generate exemplars who are politicians, authors, or scholars.

As in my previous studies, I expected that people would have more positive perceptions of young compared to old White men, but more positive perceptions of old compared to young Black men. I also predicted that in terms of change over time, participants would imagine that White exemplars would become more negative over time while Black exemplars would become more positive over time.

Method

Participants and Design

Participants were 126 introductory psychology students (65 women) from the University of Toronto who ranged in age from 17 to 36 years ($M = 18.94$, $SD = 2.49$). The sample was diverse in terms of ethnic background, with a majority of participants reporting East and Southeast Asian descent (49.6%; 26.8% European, 7.9% South Asian, 4.7% Middle Eastern,
0.8% African, 2.4% Latin, Central, and South American, 2.4% Caribbean, 5.5% Other).

Participants were randomly assigned to one of four famous target conditions: young Black, old Black, young White, old White.

Procedure

The procedure used in this study follows closely the procedure used in Study 3, except instead of providing targets, participants were asked to think of famous exemplars who fit into the social categories of interest. Participants were invited to the laboratory for a study on perceptions of famous individuals. They were told that they would be asked to think of two famous people who fit into a specific social category which would be randomly chosen by the computer. I specified that the famous people could be anyone, as long as they fit into the specified social category, and that people who are famous include but are not limited to: actors, musicians, athletes, politicians, authors, artists, scholars, celebrities, etc. In the young conditions, participants were asked to think of famous men (Black or White, depending on condition) between the ages of 20 and 40. In the old conditions, participants were asked to think of famous men (Black or White) over the age of 60.

After indicating the names of their famous exemplars, participants were asked to estimate the age of each target, and to rate how typical and similar each target was to other men in the same age category on a scale from 1 (not at all) to 5 (very much so). Next, participants were asked to rate each of their targets on the 35 traits used in Study 3. Participants rated each target on all 35 traits consecutively according to the degree to which the adjective described the individual on a scale from 1 (not at all descriptive) to 5 (very descriptive). These ratings comprised the present ratings, and were made by all participants.
Following the rating of targets on the 35 traits, participants in the young target conditions were asked to take their time to carefully think about what each of the famous targets would be like at age 75. Next, they prospectively rated each of the targets on the same 35 traits. Only participants in the young target conditions made these future trait ratings.

Participants in the two old target conditions were asked to think about and really take time to imagine the target individuals at age 25. They were then asked to make retrospective ratings of the targets on the 35 traits. Only participants in the old target conditions made these past trait ratings.

After rating each of the two targets on the 35 traits in the present and then in the future or past, I collected demographic information and participants were debriefed and dismissed.

**Results**

In this study, I was interested in participants’ most common exemplars of young and old Black and White men and how participants think these exemplars have changed or will change over time. I had participants generate two exemplars from an assigned category and rate these exemplars on 35 traits. Participants who generated young targets predicted how these famous young men might be characterized at age 75. Those who generated old targets indicated how they thought the older famous men would have been characterized at age 25. After investigating the exemplars participants generated, as in Study 3, I used a factor analysis to analyze the results of the trait ratings. The factor analysis reduced the data to two main factors. I used these two factors to create scale scores, which I interpreted as reflecting negative and positive evaluation. Using two-way ANOVAs, I examined perceptions of negative and positive characteristics of the four targets in the present. I examined perceptions of change over time using a series of repeated
measures ANOVAs, again running these separately for the young and old targets. Finally, as in Chapter 3, I conducted two-way ANOVAs to examine differences in ratings for targets who overlap at age 25 and at age 75.

Exemplars Generated

Each participant was asked to generate two exemplars from the target category to which they were assigned. The exemplars generated by participants in each condition are displayed in Table 4.1. Interestingly, for both the young Black and young White categories, there were a number of exemplars generated who did not actually fall within the age range of 20-40 years old; in all cases, these exemplars fell between 40 and 60 years of age. This issue did not exist in either of the old conditions. Participants were asked to estimate the age of each of their exemplars; those in the young conditions estimated the mean age of their exemplars to be 31.78 years (range: 20-40 years; $SD = 5.87$ years. Those in the old conditions estimated the mean age of exemplars to be 71.75 years (range: 60-120 years; $SD = 14.76$ years). Although estimates of age differed according to target age group as expected, $t(125) = 21.72, p < .001, d = 3.87$, there were no differences in estimate of age according to target race group within the target age categories, $ps > .20$.

Also interesting to note from Table 4.1 is the fact that participants were able to generate far fewer exemplars in the old Black category (17) than in the other three categories (young Black: 34; young White: 47; old White: 36).

---

$^2$ Age estimates of 120 years were made for two exemplars: Albert Einstein and Abraham Lincoln. These estimates were not statistically flagged as outliers and were thus included in all analyses.
Table 4.1: Famous Exemplars Generated in Each of Four Conditions.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Young Black</th>
<th></th>
<th>Young White</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>Profession</td>
<td>Name</td>
<td>Profession</td>
</tr>
<tr>
<td>1</td>
<td>Barack Obama* (7)</td>
<td>Politician</td>
<td>Brad Pitt * (5)</td>
<td>Actor</td>
</tr>
<tr>
<td>2</td>
<td>Kanye West (7)</td>
<td>Musician</td>
<td>Orlando Bloom (5)</td>
<td>Actor</td>
</tr>
<tr>
<td>3</td>
<td>Michael Jackson * (6)</td>
<td>Musician</td>
<td>David Beckham (4)</td>
<td>Athlete</td>
</tr>
<tr>
<td>4</td>
<td>Will Smith * (6)</td>
<td>Actor</td>
<td>Tom Cruise * (4)</td>
<td>Actor</td>
</tr>
<tr>
<td>5</td>
<td>Curtis Jackson/50 Cent (3)</td>
<td>Musician</td>
<td>Johnny Depp * (3)</td>
<td>Actor</td>
</tr>
<tr>
<td>6</td>
<td>Michael Jordan * (3)</td>
<td>Athlete</td>
<td>Justin Timberlake (3)</td>
<td>Musician</td>
</tr>
<tr>
<td>7</td>
<td>Denzel Washington * (3)</td>
<td>Actor</td>
<td>Matt Damon (2)</td>
<td>Actor</td>
</tr>
<tr>
<td>8</td>
<td>Jay-Z (3)</td>
<td>Musician</td>
<td>Eminem (2)</td>
<td>Musician</td>
</tr>
<tr>
<td>9</td>
<td>Ne-Yo (3)</td>
<td>Musician</td>
<td>Roger Federer (2)</td>
<td>Athlete</td>
</tr>
<tr>
<td>10</td>
<td>Chris Brown (2)</td>
<td>Musician</td>
<td>Bill Gates * (2)</td>
<td>Businessman</td>
</tr>
<tr>
<td>11</td>
<td>Lil Wayne (2)</td>
<td>Musician</td>
<td>Ashton Kutcher (2)</td>
<td>Actor</td>
</tr>
<tr>
<td>12</td>
<td>Akon (1)</td>
<td>Musician</td>
<td>Cristiano Ronaldo (2)</td>
<td>Athlete</td>
</tr>
<tr>
<td>13</td>
<td>Donovan Bailey * (1)</td>
<td>Athlete</td>
<td>Michael Buble (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>14</td>
<td>Usain Bolt (1)</td>
<td>Athlete</td>
<td>Gerard Butler (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>15</td>
<td>Kobe Bryant (1)</td>
<td>Athlete</td>
<td>Nicolas Cage * (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>16</td>
<td>Vince Carter (1)</td>
<td>Athlete</td>
<td>Jose Calderon (1)</td>
<td>Athlete</td>
</tr>
<tr>
<td>17</td>
<td>Dave Chappelle (1)</td>
<td>Actor</td>
<td>Jim Carrey * (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>18</td>
<td>Chamillionaire (1)</td>
<td>Musician</td>
<td>Aaron Carter (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>19</td>
<td>Kid Cudi (1)</td>
<td>Musician</td>
<td>Nick Carter (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>20</td>
<td>P. Diddy (1)</td>
<td>Musician</td>
<td>George Clooney * (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>21</td>
<td>Marshall Faulk (1)</td>
<td>Athlete</td>
<td>Willie Colon * (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>22</td>
<td>Jamie Foxx * (1)</td>
<td>Actor</td>
<td>Macaulay Culkin (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>23</td>
<td>Terrence Howard (1)</td>
<td>Actor</td>
<td>Zac Efron (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>24</td>
<td>Lebron James (1)</td>
<td>Athlete</td>
<td>Malcolm Gladwell * (1)</td>
<td>Author</td>
</tr>
<tr>
<td>25</td>
<td>Lenny Kravitz * (1)</td>
<td>Musician</td>
<td>Ryan Gosling (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>26</td>
<td>Martin Lawrence (1)</td>
<td>Actor</td>
<td>Jonny Greenwood (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>27</td>
<td>Brian McKnight * (1)</td>
<td>Musician</td>
<td>Jake Gyllenhaal (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>28</td>
<td>Eddie Murphy * (1)</td>
<td>Actor</td>
<td>Stephen Harper * (1)</td>
<td>Politician</td>
</tr>
<tr>
<td>29</td>
<td>Chris Paul (1)</td>
<td>Athlete</td>
<td>Joe Jackson * (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>30</td>
<td>Boots Riley (1)</td>
<td>Musician</td>
<td>Joshua Jackson (1)</td>
<td>Actor</td>
</tr>
<tr>
<td>31</td>
<td>Chris Rock * (1)</td>
<td>Actor</td>
<td>Kevin Jonas (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>32</td>
<td>Tupac Shakur (1)</td>
<td>Musician</td>
<td>Kevin F. Kennedy * (1)</td>
<td>Politician</td>
</tr>
<tr>
<td>33</td>
<td>Mike Tomlin (1)</td>
<td>Athlete</td>
<td>Roberto Luongo (1)</td>
<td>Athlete</td>
</tr>
<tr>
<td>34</td>
<td>Tiger Woods (1)</td>
<td>Athlete</td>
<td>John Mayer (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td>Jesse McCartney (1)</td>
<td>Musician</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td></td>
<td>Dmitry Medvedev * (1)</td>
<td>Politician</td>
</tr>
<tr>
<td>Name</td>
<td>Profession</td>
<td>Name</td>
<td>Profession</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------</td>
<td>------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>1 Morgan Freeman</td>
<td>Actor</td>
<td>George Bush</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>2 Nelson Mandela</td>
<td>Politician/Activist</td>
<td>Sean Connery</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>3 Martin Luther</td>
<td>Politician/Activist</td>
<td>Albert Einstein</td>
<td>Academic</td>
<td></td>
</tr>
<tr>
<td>4 Muhammad Ali</td>
<td>Athlete</td>
<td>George Bush Senior</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>5 Colin Powell</td>
<td>Politician</td>
<td>Warren Buffett</td>
<td>Businessman</td>
<td></td>
</tr>
<tr>
<td>6 Sidney Poitier</td>
<td>Actor</td>
<td>Jack Nicholson</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>7 Malcolm X</td>
<td>Activist</td>
<td>Dustin Hoffman</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>8 Samuel L.</td>
<td>Actor</td>
<td>Jean Chretien</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>9 Ray Charles</td>
<td>Musician</td>
<td>Bill Clinton</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>10 Danny Glover</td>
<td>Actor</td>
<td>George Washington</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>11 Buddy Guy</td>
<td>Musician</td>
<td>Bob Barker</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>12 Jesse Guy</td>
<td>Activist</td>
<td>Michael Caine</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>13 BB King</td>
<td>Musician</td>
<td>Jimmy Carter</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>14 Robert Mugabe</td>
<td>Politician</td>
<td>Winston Churchill</td>
<td>Politician</td>
<td></td>
</tr>
<tr>
<td>15 Oscar Peterson</td>
<td>Musician</td>
<td>Charles Darwin</td>
<td>Academic</td>
<td></td>
</tr>
<tr>
<td>16 Bill Russell</td>
<td>Athlete</td>
<td>Harrison Ford</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>17 Desmond Tutu</td>
<td>Activist</td>
<td>Billy Graham</td>
<td>Evangelist</td>
<td></td>
</tr>
<tr>
<td>18 Gene Hackman</td>
<td>Actor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Chris Hitchens</td>
<td>Author/Activist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Vladimir Horowitz</td>
<td>Musician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Bobby Hull</td>
<td>Athlete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Christopher Lee</td>
<td>Actor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Abraham Lincoln</td>
<td>Politician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 John Lithgow</td>
<td>Actor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 Karl Marx</td>
<td>Politician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 John McCain</td>
<td>Politician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 Paul McCartney</td>
<td>Musician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Richard Nixon</td>
<td>Politician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Name</td>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Isaac Newton (1)</td>
<td>Academic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Bobby Orr (1)</td>
<td>Athlete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Al Pacino (1)</td>
<td>Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Gregory Peck (1)</td>
<td>Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Regis Philbin (1)</td>
<td>Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Alan Rickman (1)</td>
<td>Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>William Shakespeare (1)</td>
<td>Author</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Christopher Walken (1)</td>
<td>Actor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
Exemplar names are followed by the frequency with which they were generated in parentheses. Participants were asked to generate two exemplars; frequencies reflect counts across these two exemplars.
* Indicates that exemplar does not actually fit within age category.

After compiling the list of exemplars generated in each category, I identified eight professions held by the exemplars: actor, academic, athlete, author, businessman, evangelist, musician, and politician/activist. The percentage of exemplars in each profession generated by participants in the four conditions is displayed in Table 4.2. Interesting to note is that the most heterogeneous group of exemplars was generated by participants in the Old White condition. These participants generated exemplars from each of the eight categories. In contrast, Black exemplars came from only four categories: actor, athlete, musician, and politician/activist. It is also interesting to note where the majority of exemplars fall by condition. In the young Black condition, most exemplars were musicians, in the young White condition most were actors, in the old Black condition most were politicians/activists, and in the old White condition the majority of exemplars were either actors or politicians/activists.
Table 4.2: Percentage of Exemplars in each Profession by Condition.

<table>
<thead>
<tr>
<th>PROFESSION</th>
<th>Young Black</th>
<th>Young White</th>
<th>Old Black</th>
<th>Old White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>24%</td>
<td>40%</td>
<td>24%</td>
<td>39%</td>
</tr>
<tr>
<td>Academic</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>8%</td>
</tr>
<tr>
<td>Athlete</td>
<td>29%</td>
<td>13%</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Author</td>
<td>—</td>
<td>4%</td>
<td>—</td>
<td>6%</td>
</tr>
<tr>
<td>Business</td>
<td>—</td>
<td>2%</td>
<td>—</td>
<td>3%</td>
</tr>
<tr>
<td>Evangelist</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>3%</td>
</tr>
<tr>
<td>Musician</td>
<td>44%</td>
<td>32%</td>
<td>24%</td>
<td>6%</td>
</tr>
<tr>
<td>Politician/Activist</td>
<td>3%</td>
<td>9%</td>
<td>41%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Although participants generated two exemplars, there was a high degree of overlap in their ratings of the typicality and similarity of the two exemplars (typicality: \( r = 0.48, p < .001 \); similarity: \( r = 0.56, p < .001 \)). Additionally, there were no differences in ratings of typicality and similarity across the conditions, \( F_s < 1.30 \). Because the ratings of typicality and similarity for the two targets were so highly correlated, I combined the ratings to create mean ratings for each of the 35 traits. These mean trait ratings were next subjected to a factor analysis.

Factor Analysis of Traits and Resulting Scale Reliabilities

As in Study 3, an exploratory Factor Analysis using Maximum Likelihood Estimation and Oblimim rotation with Kaiser normalization was used to group the traits. The resulting scree plot and structure matrix revealed two factors which together accounted for 39.85% of the total variance (factor 1: 29.57%; factor 2: 10.27%). The loadings for each factor are displayed in Table 4.3. These two factors were used as a guide for how to best combine the items into scales. Twelve traits which loaded onto both factors (irresponsible, friendly, kind, reliable, calm, warm, trustworthy, hardworking, talented, funny, intelligent, happy) and three traits which did not load onto either (weak, musical, extraverted) were removed from further analysis. I examined the
content of the traits loading on each factor, and interpreted the first as reflecting negative
evaluation (10 items) and the second factor as reflecting positive evaluation (10 items).

The items loading on each factor were then averaged together to create mean Negative
Evaluation and mean Positive Evaluation scores for past, present, and future ratings. The scale
reliabilities for these groupings was very good (Negative Evaluation: past, \( \alpha = 0.89 \); present, \( \alpha = 0.90 \); future, \( \alpha = 0.86 \); Power: past, \( \alpha = 0.89 \); present, \( \alpha = 0.88 \); future, \( \alpha = 0.87 \)). These mean
scores were used in all subsequent analyses.

Table 4.3: Rotated factor matrix for trait ratings.

<table>
<thead>
<tr>
<th>Traits</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative Evaluation</td>
<td>Positive Evaluation</td>
</tr>
<tr>
<td>Rude</td>
<td>-.86</td>
<td></td>
</tr>
<tr>
<td>Angry</td>
<td>-.78</td>
<td></td>
</tr>
<tr>
<td>Dangerous</td>
<td>-.77</td>
<td></td>
</tr>
<tr>
<td>Aggressive</td>
<td>-.75</td>
<td></td>
</tr>
<tr>
<td>Cold</td>
<td>-.75</td>
<td></td>
</tr>
<tr>
<td>Hostile</td>
<td>-.73</td>
<td></td>
</tr>
<tr>
<td>Irresponsible*</td>
<td>-.72</td>
<td>-.45</td>
</tr>
<tr>
<td>Grumpy</td>
<td>-.70</td>
<td></td>
</tr>
<tr>
<td>Friendly*</td>
<td>.66</td>
<td>.58</td>
</tr>
<tr>
<td>Kind*</td>
<td>.64</td>
<td>.63</td>
</tr>
<tr>
<td>Reliable*</td>
<td>.60</td>
<td>.56</td>
</tr>
<tr>
<td>Lazy</td>
<td>-.57</td>
<td></td>
</tr>
<tr>
<td>Calm*</td>
<td>.48</td>
<td>.40</td>
</tr>
<tr>
<td>Sad</td>
<td>-.46</td>
<td></td>
</tr>
<tr>
<td>Frail</td>
<td>-.32</td>
<td></td>
</tr>
<tr>
<td>Weak*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warm*</td>
<td>.54</td>
<td>.67</td>
</tr>
</tbody>
</table>
Interesting .66
Trustworthy* .51 .64
Active .62
Hardworking* .40 .60
Talented* .33 .55
Strong .53
Creative .51
Funny* .34 .51
Powerful .49
Intelligent* .46 .48
Happy* .34 .45
Attractive .42
Handsome .40
Content .40
Talkative .36
Athletic .33
Musical* 
Extraverted*

Notes:
Extraction Method: Maximum Likelihood.
Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in eight iterations.
* Indicates that item was removed, either due to lack of loading or dual-loading.

Negative and Positive Evaluations in the Present

Two-way ANOVAs with target age (young, old) and target race (Black, White) as fixed factors were used to examine differences in current negative and positive evaluation between the four target types. As displayed in the present panel of Figure 4.1, analyses of the Negative Evaluation ratings revealed no significant main effects or interaction, all $F_s < 1.13$, all $p_s > .290$,
indicating that participants in each of the four conditions evaluated their exemplars equally in terms of negative evaluations.

As displayed in the present panel of Figure 4.2, analysis of the Positive Evaluation ratings revealed a significant main effect of target age, \( F(1, 127) = 10.50, p = .002, \eta_p^2 = 0.08; \) participants rated young exemplars \((M = 3.61, SD = 0.53)\) more positively than old \((M = 3.32, SD = 0.47)\) exemplars. The interaction between target age and target race was marginally significant, \( F(1, 127) = 3.35, p = .070, \eta_p^2 = 0.03. \) Post-hoc analyses revealed that the old White targets \((M = 3.26, SD = 0.46)\) were evaluated less positively than the young White targets \((M = 3.70, SD = 0.53), p = .002. \) Ratings of the young White, young Black \((M = 3.26, SD = 0.47), \) and old Black \((M = 3.26, SD = 0.47)\) targets did not differ, \( ps > .30. \)

**Negative and Positive Evaluations across Time**

Next, as in Study 3, I examined how participants envisioned the targets changing over time separately for the young and old targets to avoid combining prospective and retrospective predictions. For each age group, I ran two repeated measures ANOVAs (one for Negative Evaluation, one for Positive Evaluation) with time entered as a within-subjects factor (young targets: time 1 = present, time 2 = future; old targets: time 1 = past, time 2 = present) and target race entered as between-subjects factors. Independent and paired samples t-tests were used to probe significant interaction effects.

**Predicting Changes in Positive and Negative Evaluation in Young Targets.** Analyses revealed a main effect of time on Negative Evaluation ratings, \( F(1, 63) = 8.76, p = .004, \eta_p^2 = 0.12. \) As displayed via the solid lines in Figure 4.1, participants anticipated that both young targets, regardless of race, would become more negative over time (present: \( M = 2.29, SD = 0.64; \) future: \( M = 2.47, SD = 0.66. \)) The interaction between time and target race was not significant, \( F < 1.00. \)
As displayed via the solid lines in Figure 4.2, analyses also revealed a main effect of time on Positive Evaluation ratings, \( F(1, 63) = 205.34, p < .001, \eta_p^2 = 0.77 \), such that participants anticipated that both young targets would become less positive over time (present: \( M = 3.61, SD = 0.53; \) future: \( M = 2.70, SD = 0.58 \)). The interaction between time and target race was not significant, \( F < 1.00 \).

*Predicting Changes in Positive and Negative Evaluation in Old Targets.* Analyses revealed a significant two-way interaction between time and target race when predicting negative evaluation among old targets, \( F(1, 60) = 5.45, p = .023, \eta_p^2 = 0.08 \). This interaction is displayed via the dashed lines in Figure 4.1. Post-hoc tests revealed no differences in perceptions of the old Black and old White targets either in the present or in the past, \( ps > .30 \). However, paired samples t-tests did reveal differences in how participants thought that each of the target types had changed over time. When considering the old Black targets, participants did not predict a change in negative evaluation having occurred from age 25 \( (M = 2.36, SD = 0.51) \) to the present \( (M = 2.34, SD = 0.59) \), \( t(30) = -0.33, p > .40, d = 0.04 \). However, participants did predict that the old White target had changed over time. Specifically, participants predicted that the old White targets had become more negative from age 25 \( (M = 2.26, SD = 0.52) \) to the present \( (M = 2.47, SD = 0.57) \), \( t(30) = 3.20, p = .003; d = 0.39 \).

Finally, I examined predicted changes in positive evaluations among older targets. As displayed via the dashed lines in Figure 4.2, analyses revealed a main effect of time on positive evaluation ratings, \( F(1, 60) = 7.02, p = .01, \eta_p^2 = 0.11 \). Participants predicted that both old targets had become less positive over time (past: \( M = 3.48, SD = 0.44 \); present: \( M = 3.32, SD = 0.45 \)).
Figure 4.1: Negative evaluation ratings for each target type at past, present, and future time-points.

![Graph showing mean negative evaluation ratings for different target types across past, present, and future time-points.]

Figure 4.2: Positive evaluation ratings for each target type at past, present, and future time-points.

![Graph showing mean positive evaluation ratings for different target types across past, present, and future time-points.]

Perceptions of Warmth and Power of Overlapping Targets

As in Chapter 3, my final set of analyses examined how participants perceived exemplars who theoretically overlap in time. More specifically, I compared ratings of exemplars who overlap at age 25: young Black present, young White present, old Black past, and old White past, and age 75: old Black present, old White present, young Black future, and young White future. Four two-way ANOVAs with target age (young, old) and target race (Black, White) as fixed factors were used to examine differences in perceptions of these overlapping targets in terms of Negative and Positive evaluation. The mean ratings at these overlap points are displayed in Figures 4.3 (negative evaluation) and 4.4 (positive evaluation).

Analysis of negative and positive evaluations of exemplars at age 25 and negative evaluations of exemplars at age 75 revealed no significant main effects or interactions, all $F$s < 2.05, all $p$s > .155.

The analysis of positive evaluations among exemplars at age 75 revealed a significant main effect of target age, $F(1, 127) = 45.85, p < .001, \eta^2_p = 0.327$. Specifically, old exemplars ($M = 3.32, SD = 0.45$) were perceived more positively than young exemplars ($M = 2.70, SD = 0.58$) were predicted to be at age 75.
Figure 4.3: Current and retro/prospective ratings of negative evaluation for each target at age 25 and age 75.

Figure 4.4: Current and retro/prospective ratings of positive evaluation for each target at age 25 and age 75.
Discussion

Media representations have traditionally portrayed older adults and Black men in a negative light. Presumably, this negative bias has an impact on the types of exemplars that come to mind when people think about these groups. In this study, I asked participants to name and complete trait ratings of famous young and old Black and White men. These trait ratings were made in the present as well as in the past (for old targets) and the future (for young targets). I was interested in the kinds of exemplars participants were able to generate as well as their ratings of these exemplars over time. I predicted that the range of Black exemplars identified would be more constrained, especially in fields where Black people have been traditionally underrepresented like academics or politics. I also hypothesized that, over time, participants would predict that Black exemplars become more positive, while predicting that White exemplars would become more negative.

I first examined the number and type of exemplars generated in each of the four categories of interest. Participants in the old Black condition were able to generate only 17 exemplars, half or less than half as in any of the other three categories. This makes sense from a representation standpoint. If Black people and older adults are underrepresented in the media, it follows that old Black men should be the least represented and, therefore, people should be able to generate the fewest number of exemplars from this category. Indeed, participants generated a limited range of exemplars from both the young and old Black categories. Exemplars from these two categories came from only four professional categories: actors, athletes, musicians, and politicians/activists. In contrast, participants were able to generate a more heterogeneous group of exemplars in the two White categories. Interestingly, participants were only able to generate academic exemplars (e.g., Albert Einstein, Charles Darwin) in the old White category, and all of
those individuals are already deceased, reflecting the colloquial perception of academics as “dead White guys”. Overall, my results suggest that people have a more limited view of Black men compared to White men.

Contrary to my prediction that participants would be unable to generate Black exemplars in the field of politics, a number of prominent Black politicians were named (e.g., Barack Obama, Martin Luther King). In fact, politicians were named more often than any other type of exemplar in the old Black condition. This was in contrast to the young Black condition, where musicians were named most often. More overlap was seen in the two White conditions, where actors were named most often. Interestingly, the majority of musicians named in the young Black category are rap artists, which may help to explain why participants rated the young Black target as so high in power in Study 3. Media representations of young Black men are focused on rap artists and rap culture, which are largely built on power and status. In contrast, the politicians most often named in the old Black category (Nelson Mandela, Martin Luther King) fought for power and status, qualities which they were repeatedly denied.

As in Chapter 3, participants were asked to rate their exemplars on a series of 35 traits. From these 35 traits, I extracted two main factors: negative and positive evaluation. These factors have some overlap with the factors identified in Study 3, warmth and power, respectively, although the overlap of traits is not perfect.

In my examination of present negative and positive evaluations, I found no differences in current negative evaluations of young and old Black and White men. When looking to positive evaluation, however, I found a main effect of age, such that the young targets were evaluated more positively than the old targets. A marginally significant interaction also emerged, showing that, as predicted, old White targets were evaluated less positively than young White targets.
However, the difference between ratings of the Black exemplars was not significant, suggesting that people view famous Black old and young men as similar in terms of both negative and positive evaluation.

When I looked to change over time among young targets, results fell in line with my hypotheses. Specifically, participants predicted that young targets would become more negative and less positive over time. The positivity result was mirrored when looking to change over time among old targets: here participants imagined that the old exemplars had become less positive over time. In terms of negative evaluation, though, I saw a different pattern of change depending on the race of the exemplars. For Black exemplars, participants predicted no change over time related to negative evaluation. For White exemplars, however, participants predicted an increase in negativity over time. Again, these results show that young and old Black famous men are rated more similarly than famous White men. This is somewhat surprising because the majority of young and old White exemplars were actors, while I saw more contrast between young (mostly musicians) and old (mostly politicians) Black exemplars. However, despite this discrepancy in terms of the most common exemplar type, participants still rated famous Black men similarly. This is also in contrast to my results from Study 3 which show malleability in ratings of Black targets, especially in terms of warmth. Comparing the results of these two studies suggests that participants perceive famous and non-famous Black people differently. While young Black non-famous men are viewed more negatively than their older counterparts, young and old Black famous men are viewed similarly. This is likely because exemplars who come to mind readily are probably well-liked by participants and young Black musicians may be particularly prized by young undergraduate participants. It would be interesting to replicate this study among middle-aged and older adult perceivers who would likely generate different exemplars, particularly in the young Black category.
Finally, I was interested in negative and positive evaluations of overlapping targets. Interestingly, participants’ perceptions of overlapping targets in terms of negative evaluation at ages 25 and 75 and positive evaluation at age 25 revealed no differences according to target type. Positive evaluations of overlapping targets at age 75 only differed according to age, such that old exemplars were currently perceived more positively than young exemplars were predicted to be when they reach old age. This is similar to Study 3, where currently old targets were perceived as warmer than young targets were predicted to be at age 75. Participants were closer in their predictions of past and future traits relative to the target’s present age when rating famous exemplars in this study than when rating non-famous targets in Study 3. This is likely because participants have generated actual exemplars with whom they are already familiar. Because participants know more about these exemplars, they have to rely on stereotypes less than with targets of whom they have no previous impression. Having a more detailed image of the exemplar allowed for a reduced discrepancy between current and projected ratings.

A limitation of this study is that I specifically asked participants to focus on famous exemplars. In the future, it would be useful to ask participants to think of any exemplar they can and to examine the degree of contact participants have had with these exemplars. For example, if individuals have not had much contact with old Black men, they will very likely have to look to famous exemplars and associated stereotypes when making judgements about that group. However, if individuals regularly interact with young White men, for example, they can draw upon a plethora of personal experience to make judgements about young White men now and in the future. It may be the case that different processes are unfolding for each target type, with participants drawing on their own experiences when making judgements about some groups but having to rely on stereotypes and their impressions of famous exemplars when making judgements about others.
Overall, this study provides some useful general information about the types of famous exemplars that come to mind when participants are asked to think about young and old Black and White men. While thinking about famous White men brings to mind young and old actors, thinking about young Black men brings to mind musicians (mainly rap artists), and thinking about old Black men brings to mind politicians/activists. The results also suggest that being famous does not protect one against the negative perceptions associated with aging; young famous men are still predicted to become more negative and less positive over time. However, because participants were only asked to generate exemplars from one category independent from all of the others, it is impossible to truly compare the ratings made between groups. In the next study, I actually asked participants to directly compare targets from the four groups of interest in hope of gaining a better understanding of relative perceptions of each target type.
Chapter 5
Forced Comparisons

Introduction

In the preceding chapters, I have examined perceptions of traits and facial emotion of young and old Black and White targets, both non-famous and famous. In this final study, I aimed to directly compare perceptions of these targets on a number of traits. A direct comparison of targets is useful, in that it forces participants to choose which of two targets is best characterized by a specific trait. This helps us to determine whether stereotypes apply equally across racial and age groups. Take for example the trait of hostility. We know that Black men are traditionally characterized as more hostile than White men. However, we are less certain about the degree to which this trait applies to all Black men. Based on my previous findings, I would predict that this trait applies more to young Black men compared to old Black men, and this is easily confirmed by examining forced choice comparisons between the two targets. In addition to the absolute choice made in this type of decision task, we can also examine the length of time taken to make the choice. Presumably, some choices are easier than others, and should thus take less time to make. Other choices may not be so obvious, and would require a longer reaction time to come to a decision. In this study, I examined direct comparisons between the four targets as well as the time taken to make these comparisons in order to gain a better understanding of young and old Black and White targets.

Combining the four targets of interest (young Black, young White, old Black, old White) led to six possible comparisons: young Black vs. young White (YB/YW); young Black vs. old Black (YB/OB); young Black vs. old White (YB/OW); young White vs. old Black (YW/OB);
young White vs. old White (YW/OW); old Black vs. old White (OB/OW). Comparisons were made using the target photographs used in Study 3 for the 35 traits used in Studies 3 and 4. After participants made individual trait ratings, I created trait clusters of warmth and power as in Study 3. I hypothesized that participants would have higher ratings of warmth and lower ratings of power for White compared to Black targets and old compared to young targets. I also hypothesized that participants would be faster to make judgments in comparisons where only race or only age differed between the targets (i.e., YB/YW, YB/OB, YW/OW, OB/OW), and slower to make comparisons where both race and age differed (i.e., YB/OW, YW/OB). In single-category difference comparisons, there should only be activation of one category and associated stereotypes, and therefore faster response times, compared to comparisons where both race and age differ between targets and therefore two categories and associated stereotypes are activated.

Method

Participants and Design

Participants were 48 introductory psychology students at the University of Toronto (24 Women) with an age range of 17 to 24 years ($M = 18.77$, $SD = 1.75$). Participants came from a variety of ethnic backgrounds: 41.7% European, 31.3% East/Southeast Asian, 14.6% South Asian, 6.3% Latin, Central, and South American, 2.1% Middle Eastern, 4.2% Other).

This study utilized a within-subjects design, with all participants making the same comparisons between four targets.

Procedure
Participants were invited to the laboratory for a study on comparative person perception. They were told that they would be asked to make rapid decisions about two individuals. The experimenter explained that two pictures of different individuals would appear on a computer screen under a trait word (e.g., TALENTED). Participants were asked to choose, as quickly as possible, which of the two individuals they thought was best described by the trait word. The experimenter emphasized that this was a speeded task, and that participants should try to make their decisions as quickly as possible. The four target photographs and 35 trait words used in this study were the same as those used in Study 3 (normalized photographs of 25- and 75-year old Black and White men, Kennedy et al., 2009; trait words, Goldberg, 1992).

The combination of the four target types led to six possible comparisons: YB/YW, YB/OB, YB/OW, YW/OB, YW/OW, and OB/OW. Participants made comparisons between the targets for each of the 35 traits, resulting in 210 comparisons in all. Comparisons were presented and paired with trait words randomly. As participants made the comparisons, the computer recorded which of the two targets was chosen and the length of time required to make the decision. The maximum time allowed for each decision was 7 s.

After completing the comparisons, participants were debriefed and dismissed.

Results

In this study, participants were asked to make rapid choices between two targets based on their judgment of which target was best described by a trait word. Participants were exposed to four target types which resulted in six comparisons: YB/YW, YB/OB, YB/OW, YW/OB, YW/OW, and OB/OW. I was interested in both the outcome of the choice, as well as the time required to make this choice.
As my first step in analysis, I created choice and reaction time averages for each of the six comparison types based on the two trait clusters identified using these same target photographs and traits in Study 3: warmth and power. The resulting scale reliabilities were good, all $\alpha$s $> 0.79$.

To analyze the reaction time data, I employed a series of repeated measures ANOVAs with ratings of warmth and power (each with six levels) entered as within subjects variables. This analysis technique was chosen over the factorial approach employed in the previous studies because we are now comparing six distinct pairings. Reaction times for each comparison type for each of the two trait groupings are displayed graphically in Figure 5.1 and numerically in their respective tables. Results of post-hoc tests (with Bonferroni corrections) for differences between the six comparison types are displayed in Tables 5.1 (warmth) and 5.2 (power).

The choice data were analyzed using one sample t-tests with a test value of 1.5 and alpha significance value of .05. In each of these tests, the first target listed was coded as 1, and the second target listed was coded as 2 (recall that the presentation of targets was counterbalanced in actual presentation). By using a test value of 1.5, I was able to determine whether participants favored either of the two choices during the trait task. Significant differences in choices are displayed in Table 5.5.
Figure 5.1: Mean reactions time for each comparison by trait type.

**Warmth**

A repeated measures ANOVA revealed a significant main effect of comparison type on reaction time for comparisons regarding warmth, $F(5, 235) = 7.67, p < .001, \eta^2_p = .14$. Post-hoc tests revealed that the fastest comparison was made between the two Black targets. Participants made this comparison choice faster than all other comparisons. Participants were slower to compare the two old targets than they were to compare the YB/OW, YB/OB, and YW/OW targets. Finally, the comparison times between the YB/OW and YB/YW and the YW/OB and YB/YW targets were also significantly different; participants were faster in their comparison of the YB/OW and YW/OB targets than the two young targets.
In terms of choices, the one-sample t-tests revealed significant preferences between targets in the following comparisons: YB/OB, YB/OW, and YW/OB. In the comparisons between the young targets and the old Black target, participants judged the old Black target to be warmer. In the comparisons between the young Black target and the old White target, participants judged the old White target to be warmer. Analyses revealed no differences in warmth between the two White, two old, or two young targets.

Table 5.1: Mean reaction time and results of post-hoc tests for each comparison on warmth-related traits.

<table>
<thead>
<tr>
<th>Comparison Type</th>
<th>M (SD)</th>
<th>OB/OW</th>
<th>YB/YW</th>
<th>YW/OB</th>
<th>YW/OW</th>
<th>YB/OW</th>
<th>YB/OB</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/OW</td>
<td>2.51 (0.75)</td>
<td>—</td>
<td>*</td>
<td>**</td>
<td>***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>YB/YW</td>
<td>2.50 (0.77)</td>
<td>—</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>YW/OB</td>
<td>2.37 (0.71)</td>
<td>—</td>
<td>—</td>
<td>**</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>YW/OW</td>
<td>2.41 (0.72)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>YB/OW</td>
<td>2.31 (0.70)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>*</td>
<td>—</td>
</tr>
<tr>
<td>YB/OB</td>
<td>2.15 (0.48)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Notes: * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$.

Power

A significant main effect of comparison type on reaction time was also found for comparisons regarding power, $F(5, 235) = 9.43, p < .001, \eta_p^2 = .17$. Post-hoc tests revealed that the participants took longer to compare the two old targets than they did to compare the YB/OB, YB/OW, YW/OB, and YW/OW targets. In addition, participants were faster to compare the two
Black targets than they were to compare the YW/OB and YB/YW targets; faster to compare the YB/OW targets than to compare the YW/OB and YB/YW targets; and, finally, faster to compare the two White targets than the two young targets.

Looking to the choice data, the one-sample t-tests revealed significant preferences between targets in the following comparisons: YB/OB, YB/OW, YW/OW, YB/YW, and YW/OB. In the three comparisons involving the young Black target, participants judged the young Black target to be more powerful. In the comparisons between the young White target and the two old targets, participants judged the young White target to be more powerful. Analyses revealed no differences in power between the two old targets.

Table 5.2: Mean reaction time and results of post-hoc tests for each comparison on power-related traits.

<table>
<thead>
<tr>
<th>Comparison Type</th>
<th>M (SD)</th>
<th>OB/OW</th>
<th>YB/YW</th>
<th>YW/OB</th>
<th>YW/OW</th>
<th>YB/OW</th>
<th>YB/OB</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/OW</td>
<td>2.51  (0.89)</td>
<td>−</td>
<td>**</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>YB/YW</td>
<td>2.34  (0.67)</td>
<td>−</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YW/OB</td>
<td>2.25  (0.74)</td>
<td>−</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YW/OW</td>
<td>2.11  (0.66)</td>
<td>−</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YB/OW</td>
<td>2.04  (0.58)</td>
<td>−</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YB/OB</td>
<td>2.08  (0.56)</td>
<td>−</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: * denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$. 
Table 5.3: Significant differences in choice by comparison and trait type.

<table>
<thead>
<tr>
<th>TRAIT TYPE</th>
<th>Warmth</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>OB/OW</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>YB/OB</td>
<td>OB***</td>
<td>YB***</td>
</tr>
<tr>
<td>YB/OW</td>
<td>OW*</td>
<td>YB***</td>
</tr>
<tr>
<td>YW/OW</td>
<td>–</td>
<td>YW***</td>
</tr>
<tr>
<td>YB/YW</td>
<td>–</td>
<td>YB***</td>
</tr>
<tr>
<td>YW/OB</td>
<td>OB*</td>
<td>YW*</td>
</tr>
</tbody>
</table>

Notes:
For each comparison, the favored option is indicated.
* denotes $p < .05$; ** denotes $p < .01$; *** denotes $p < .001$.

Discussion

In this final study, I examined forced-choice comparisons between the four targets of interest for the trait clusters of warmth and power. I hypothesized that White targets would be rated as warmer but less powerful than Black targets and that young targets would be rated as more powerful but less warm than old targets. My young vs. old hypothesis regarding power was supported: in all comparisons involving one young and one old target, the young target was consistently rated as more powerful. Also as predicted, the young Black target was perceived as
more powerful than the young White target, echoing my Study 3 results. These results suggest that power is a trait cluster closely associated with young men and, in particular, young Black men. On the other hand, power does not seem to be a trait relevant to distinctions between old targets, as no differences were found between the old White and old Black targets in terms of power traits. This is in concert with the results from Study 3, which show that although perceived power differences exist among young targets, these targets are thought to decline to the same (low) level of power in old age.

My hypotheses for warmth were also mostly supported. I found that older men were generally perceived as being warmer than younger men, except in the comparison between the White targets. That fact that I did not observe a warmth difference in the YW/OW comparison but did find a warmth bias in favour of the old Black target in the YB/OB comparison supports the contention of the selective inhibition hypothesis than old Black and White men are activating different components of the older adult stereotype. When comparing young and old White men, it seems that aspects of the older adult stereotype associated with power (e.g., frailty, weakness) are being activated, thus leading to a power bias in favour of the young target. However, when comparing the two Black targets, the warmth aspects of the older adult stereotype, those that conflict with the Black hostility stereotype, are becoming activated, thus leading to a warmth bias in favour of the old target.

In addition to the absolute choices made in each comparison, I was also able to examine the time it took to make each comparison. I hypothesized that comparisons would be quickest when targets differed according to age or race only, and slower when they differed on both age and race. This hypothesis was only partially supported. In comparisons of warmth, the fastest decisions were made between the young Black and old Black targets, two targets who differ
only according to their age. However, the two slowest comparisons, OB/OW and YB/YW, were also for targets who only differed on one dimension: race. These two comparisons also yielded the longest reaction times in judgements related to power. One explanation for this is that we are observing a demand effect, such that participants realize that they are being asked to make a Black/White judgement and are reluctant to do so. On the other hand, making judgements between young and old individuals is more socially condoned, and participants find those judgements easier and quicker to make. This explanation is supported by the fact that the OB/OW and YB/YW comparisons yielded no choice differences for warmth ratings. This may simply be because participants were hesitant to choose and, eventually, half went one way and half went the other.

Another interesting thing to note is that for both ratings of warmth and power, comparisons between the young Black target and the two old targets were not only significantly different in terms of choice, but also relatively fast in terms of reaction time. Compared to these old targets, the young Black man is seen as especially powerful and cold, explaining the biases seen against the young Black man in terms of perceptions of anger and happiness in Studies 1a, 1b, and 2. If the old Black man is seen as particularly warm and the young Black man is seen as particularly cold and powerful, it makes sense that participants would see a young Black face as angrier and less happy.

This last study confirms my previous finding that older targets, particularly older Black men, are perceived as warmer than younger targets. I also found further evidence that young Black men are perceived as cold but powerful. Most importantly, this study lends support to the idea that older Black and White targets activate different components of the older adult stereotype. Specifically, they activate those components which most strikingly contrast them
against their younger counterparts. For older White men, that component appears to be associated with (lack of) power, while for older Black men, that component appears to be associated with warmth.
Conclusion

Although they are often problematic, stereotypes are useful perceptual tools which allow for fluent navigation of the social world. Stereotypes can be based on virtually any characteristic or group membership, but a large proportion focus on generalized beliefs about the big three social categories of age, race, and gender (Brewer, 1988). The process of stereotyping and the subsequent consequences for stigmatized individuals have garnered much attention within the field of social psychology. The vast majority of this work has focussed on the application and experience of stereotypes based on one’s membership in some particular social group. Early work on stereotyping was largely focused on the perspective of the perceiver, examining when and why stereotypes were most likely to be applied (e.g., Devine, 1989; Macrae et al., 1994). Later investigations began to include the perspective of the targets of stereotyping, for example examining important questions about how stereotypes affect older adults’ memory performance (e.g., Rahhal, Hasher, & Colcombe, 2001), Black students’ academic performance and engagement (e.g., Steele & Aronson, 1995), and women’s math performance (e.g., Spencer, Steele, & Quinn, 1999). These inquiries have been varied and fruitful, but have almost exclusively focused on stereotyping based on one social category. This type of single-category approach is of course insufficient to explain the reality of stereotyping in our complex social environment. Individuals are not just members of one group, they are members of many, and the purview of research on stereotyping must expand to address this reality. The studies reported in this dissertation are among the first attempts to examine perceptions of multiply-categorizable targets, specifically focusing on the combined influence of stereotypes related to the Black racial group and the older adult age group.
One of the main reasons I chose to focus on older adult and Black stereotypes is that many aspects of these stereotype sets are conflicting. While Black men are stereotyped as being violent, hostile, and aggressive (e.g., Bodenhausen, 1988, 1990; Bruner, 1957; Devine & Elliot, 1995), stereotypes about older adults, both positive and negative, characterize them as being indisposed or unable to propagate violence. For example, older adults are often simultaneously stereotyped negatively as being frail and weak and positively as being warm and kind (Cuddy et al., 2005; Fiske et al., 2002). In the studies presented here, I focused on male targets from four social categories: young Black, young White, old Black, and old White. This enabled us to compare perceptions of individuals who activate neither old age nor Black stereotypes (young White), only old age stereotypes (old White), only Black stereotypes (young Black), or both old age and Black stereotypes (old Black).

Although previous research on multiple categorization had suggested a state of “double jeopardy” for individuals characterized by more than one set of stereotypes (e.g., Beale, 1970; Blakemore & Boneham, 1994), I found this explanation too simplistic, particularly in describing the combination of conflicting stereotype sets. I suggested three alternative hypotheses for the combination of older adult and Black stereotypes. First, I suggested a process of stereotype inhibition (Macrae et al., 1995), such that the stronger stereotype would override the other. I also suggested that stereotypes might blend together to create a new subtype, as suggested by the subtyping model (Weber & Crocker, 1983). Finally, I proposed a new model of selective inhibition (Kang & Chasteen, 2009), suggesting that conflicting stereotype elements might be inhibited. For example, activations of the warm and kind components of the elderly stereotype could selectively inhibit the hostile and aggressive components of the Black stereotype. I set out to investigate these four competing hypotheses in a series of five studies.
In Chapter 1, I used a facial emotion change-detection task to examine perceptions of anger and happiness on young and old Black and White faces. Seminal research by Hugenberg and Bodenhausen (2003, 2004) showed that perceptions of facial expressions can be influenced by stereotypes about Black people. Specifically, in line with stereotypes linking Black men to aggression and hostility, perceivers see anger appear sooner and linger longer on Black compared to White faces. I saw face perception as a promising avenue for investigating multiply-categorizable targets, and modified Hugenberg and Bodenhausen’s (2003) procedure to include all four of the targets of interest and examined perceptions of anger and happiness among young and old perceivers. Both young (across all six transitions) and old (across four transitions) perceivers reported seeing anger linger longer and appear sooner on young compared to old Black faces but old compared to young White faces. Similar results were found for happiness. Here, perceivers reported seeing happiness disappear sooner and appear later on young compared to old Black faces but old compared to young White faces. What I observed were complex and dynamic effects of stereotype interaction, leading to different perceptions of young and old men depending on their race. These results allowed us to rule out the double jeopardy and global inhibition hypotheses, and supported instead a subtyping or selective inhibition account.

In Chapter 2, I attempted to explore this interaction further by priming age or race prior to having participants make judgements in the facial emotion change-detection task. Unfortunately, my priming manipulation was unsuccessful in isolating one category from the other, so I was unable to observe judgements made with only age-related or only race-related stereotypes activated. However, the study did replicate many of the patterns of interaction that were observed in Chapter 1. Again, I observed biased perceptions of angry and happy emotions. For Black faces, I observed a negative bias against young faces with a positive bias in favour of
old faces. In contrast, for White faces, I observed a negative bias against old faces and a positive bias in favour of young faces. This was yet another piece of evidence that the older adult stereotype seemed to be conferring something of a buffer against the Black-hostility stereotype. However, it was still unclear whether this process was unfolding via subtyping or selective inhibition.

In Chapters 3-5, I examined more basic trait-related perceptions of the four targets of interest. In Chapter 3, I investigated perceptions of the targets’ levels of warmth and power in the present and in the past (for old targets) and future (for young targets). As with previous examinations, I found that older adults were perceived as warmer but less powerful than younger adults (Cuddy et al., 2005), and that Black targets were perceived to be more powerful than White targets (e.g., Stone, 2002). In keeping with the relatively positive perceptions of old Black men revealed in Chapters 1 and 2, the old Black target in this study was also perceived as the warmest of all four targets. When looking across the lifespan, results revealed that power is predicted to decrease from young adulthood into old age, regardless of the race of the target. In terms of warmth, though, a more complex interaction between target age and race was found when participants were asked to make retrospective predictions. Specifically, older Black men were predicted to have become warmer over time, whereas older White men were predicted to have become less warm over time. These results suggest that the patterns observed in the facial emotion change-detection studies reflected participants’ retrospective judgements about older targets’ levels of warmth across the lifespan. Specifically, older Black men are perceived positively relative to their former cold selves, and old White men are perceived negatively relatively to their former warm selves. Before exploring these specific ideas further in Chapter 5, I examined the subtyping hypothesis more directly in Chapter 4 by considering famous exemplars from the four categories of interest.
In Chapter 4, I asked participants to generate famous young and old Black and White exemplars and to rate these exemplars on a series of traits in the present, past (old targets), and future (young targets). Examining the number and type of exemplars generated revealed that participants have a much more limited view of Black targets, particularly old Black targets, than of White targets. These results also revealed that if perceivers are depending on famous exemplars to help form judgements of targets from various social groups, it is not surprising that they would be biased to perceive anger on young Black faces. Indeed, the majority of young Black exemplars generated were rap artists, and rap culture is often closely associated with powerful displays of violence and aggression (Ogbar, 2007; Oware, in press). The results of this study also again showed negative perceptions of aging, such that young famous men were predicted to become more negative and less positive over time. Another interesting finding stemming from this study was that participants were much closer in their perceptions of overlapping famous targets than they had been of non-famous targets in Chapter 3. Presumably, their familiarity with the famous targets reduced the need to rely on stereotyping to make projected ratings, allowing for a reduction in the discrepancy between current and projected ratings (see also Bodenhausen, Schwarz, Bless, & Wanke, 1995). This is promising, as it supports previous research that one way to reduce stereotyping is to increase familiarity with a target (Brewer, 1988; Fiske & Neuberg, 1990; but see also Smith et al., 2006). Although this was already discussed following Chapter 4, one limitation of this study was that participants were specifically asked to generate famous exemplars. A future investigation asking participants to generate any exemplar would be useful in dissociating the types of processes going on when participants are making judgements about the four social groups of interest. For example, participants may be able to generate many exemplars of young White men from their own lives, but may have great difficulty generating real exemplars of young Black men and instead
generate famous exemplars with whom they have no personal experience. It would also be interesting to repeat this study with middle-aged or old participants who would likely generate a very different list of exemplars.

Finally, in Chapter 5 I used a forced-choice comparison task to compare young and old Black and White men on traits related to warmth and power. I found that young targets were consistently rated as more powerful than old targets and, as in Chapter 3, the young Black target was perceived as more powerful than the young White target. Also as in Study 3, I found that distinctions made between older targets are more related to warmth than they are to power. Indeed, in both Studies 3 and 5, older Black and White adults were judged to be equally low in power. The results of this study also revealed a very important finding in terms of the selective inhibition hypothesis. Specifically, I found that power was the relevant dimension when comparing young and old White men, while warmth was the relevant dimension when comparing young and old Black men. This suggests that comparisons of young and old White men are based on the activation of power-related traits, while comparisons of young and old Black men are based on the activation of warmth-related traits, precisely those traits which most strikingly contrast each older man with his younger counterpart.

In all, these results seem to suggest that the selective inhibition hypothesis is a plausible explanation for the results seen in Chapters 1 and 2. As seen in Chapter 3 and 5, warmth is a particularly salient feature when perceivers are asked to rate or compare young and old Black men. In contrast, power appears to be more salient when perceivers are asked to rate or compare young and old White men. Also, as revealed in Chapters 3 and 4, retrospective judgements appear to be particularly important in making judgements about older targets. Perhaps because the participants are young adults, they seem to make judgements of old targets based on their ideas of what that target was like at a younger age. However, it may also be the case that
different processes are unfolding for Black and White men (R.H. Fazio, personal communication, February 24, 2010). Specifically, we may be seeing selective inhibition with older Black men, but a simple stereotyping effect with older White men. With older White men, because there is no competing race-based stereotype activated, perceivers may just apply negative age-related stereotypes and move on. With older Black men, on the other hand, both old age and Black stereotypes are activated, and the warmth component of the older adult stereotype inhibits the Black-hostility stereotype. Unlike the selective inhibition model, however, this dual-process model cannot explain why negative, but not positive, old age stereotypes are applied to the older White man. The selective inhibition model proposes that this occurs because the young and old White man are contrasted based on power, thereby leading to a more negative evaluation of the stereotypically weaker, sickly, old White man. Further research is required to determine whether selective inhibition is occurring for only Black or both Black and White targets. The selective inhibition hypothesis should also be tested with other non-White old targets to determine how other racial stereotypes interact with age stereotypes. It may be the case, for example, that any positive stereotypes associated with one’s racial group could buffer against negative stereotypes associated with old age.

Further research is also required to more fully investigate the pattern of results seen with transitions from neutral to angry and angry to neutral in Studies 1a, 1b, and 2. In Studies 1b and 2, there was no difference in perceptions of young and old Black faces in the transition from neutral to angry; further, this difference was only marginally significant in Study 1a. The difference between the young and old Black targets was also not significant in the transition from angry to neutral in Study 2. What we are seeing, then, is a pattern of results suggesting that older adult stereotypes only inhibit Black hostility stereotypes when positive emotions (e.g., happiness) are involved. This makes sense in relation to the results observed in Chapters 3 and 5.
pinpointing warmth as a crucial comparison between young and old Black targets. When only anger, a negative, power-related emotion is involved, the co-activation of older adult stereotypes no longer helps to inhibit the Black hostility stereotype. What may be going on here is that seeing an angry face strongly activates the category “Black”. Indeed, previous research has shown that racially ambiguous angry faces are more likely to be categorized as Black, suggesting that anger primes the concept Black (Hugenberg & Bodenhausen, 2004). Once race has been activated so strongly, age stereotypes may be completely inhibited or, alternatively, not activated at all. In fact, research measuring event-related brain potentials has shown that attention is allocated to and can be captured by racial information in the very early stages of person perception (Ito & Urland, 2003).

Another future direction for this work would be to examine what it is about the older Black man that leads to such positive evaluations in terms of warmth. One clue comes from the finding in Chapter 4 that the majority of young Black famous exemplars generated by participants are rap artists. Some scholars argue that the propagation of rap culture has led to a hypermasculinization of the current generation of young Black men (Kelley, 1996; Oware, in press). Perceptions of warmth are negatively associated with perceptions of masculinity (Cuddy et al., 2005) and perceptions of masculinity are negatively associated with age (Kite et al., 2005), so it may be the projected movement away from a hypermasculinized state that leads to older Black men being perceived as warm.

Related to this idea, another interesting hypothesis that might be explored is that age-related changes in facial structure and tone may lead to Black faces appearing less prototypically Black over time. Because more prototypically Black faces are perceived more negatively than less prototypically Black faces (Livingston & Brewer, 2002), it may simply be the case that the
Black-hostility stereotypes “wears off” over time, independent of or in addition to any effects related to selective stereotype inhibition.

This dissertation has focussed on the combination of older adult and Black stereotypes, but this is only a small step toward an understanding of how multiply-categorizable targets are perceived. In future work it will be important to examine the combination of other types of stereotypes (e.g., related to gender, occupation, socio-economic status) in order to reach a better understanding of the complex processes underlying perceptions during multiple categorization. Gaining a better understanding for how these processes unfold may unveil promising avenues for interventions aimed at reducing the negative consequences of stereotyping for stigmatized individuals. For example, we may able to train perceivers to selectively inhibit negative stereotypes with simultaneously activated positive stereotypes. For now, we can conclude that multiple categorization is a process far more complex than suggested by the double jeopardy hypothesis and a topic worthy of much future research attention.
References


Quinn, P.C., Yahr, J., Kuhn, A., Slater, A.M., & Pascalis, O. (2002). Representation of the

differences in memory: Now you see them, now you don’t. *Psychology and Aging, 16*,
697–706.

time television. *Communication Reports, 8*, 111-119.

& Sons, Inc.

older adults respond to baby talk in the nursing home?, *International Journal of Aging
and Human Development, 39*, 21-32.


Sacco, D. F., Hugenberg, K., & Sefcek, J. A. (2009). Sociosexuality and social perception:
Unrestricted sexual orientation facilitates sensitivity to female facial cues. *Personality
and Individual Differences, 47*, 777-782.

perceptions of ambiguously aggressive acts. *Journal of Personality and Social
Psychology, 39*, 590-598.


