

REDUCE RACIAL BIAS ON INTERVIEW

Reducing racial bias: An additional benefit of asynchronous video interviews

by

Jingdi Wu

A Thesis Submitted to

Saint Mary's University, Halifax, Nova Scotia

In Partial Fulfillment of the Requirements for

The Degree of MSc in Applied Psychology

October, 2021, Halifax Nova Scotia

Copyright Jingdi Wu, 2021

Approved: Dr. Nicolas Roulin
Supervisor

Approved: Dr. Debra Gilin
Examiner

Approved: Dr. Jim Cameron
Examiner

Approved: Dr. Joshua Bourdage
External Examiner

Date: October, 18th, 2021

ABSTRACT**REDUCING RACIAL BIAS: AN ADDITIONAL BENEFIT OF ASYNCHRONOUS VIDEO INTERVIEWS**

by Jingdi Wu

Abstract: This research examines the effect of applicant races and interview modality on interviewers' evaluations in asynchronous video interviews (AVIs). The outcome of interview evaluations, individual-level racial attitudes are examined using a 3 (applicant races: White, Black, Asian) x 3 (interview modality: video, audio-only, partially blind modes) design. Prolific users from the United States ($N = 319$) participated in one of nine AVI conditions and rated the applicant's interview performance based on the materials they received. Analyses of variance revealed that in AVIs, the interview modality did not affect interviewers' evaluation. The effect of applicant races showed that two minority applicants received equal or higher scores than the White applicant. However, there was no effect of applicant races in the audio-only and partially blind modes as the visual cues are mainly resources that cause interviewers' racial bias. The interviewers' racial bias moderates interview evaluations of the Black applicant in the partially blind mode as interviewers who hold a higher level of racial bias rate the Black applicant lower. Several limitations of this study and practical implications for both interviewees of AVIs and employers using AVIs are discussed.

October, 18th, 2021

Reducing racial bias: An additional benefit of asynchronous video interviews

by

Jingdi Wu

A Thesis Submitted to

Saint Mary's University, Halifax, Nova Scotia

In Partial Fulfillment of the Requirements for

The Degree of MSc in Applied Psychology

October, 2021, Halifax Nova Scotia

Copyright Jingdi Wu, 2021

Approved: Dr. Nicolas Roulin
Supervisor

Approved: Dr. Debra Gilin
Examiner

Approved: Dr. Jim Cameron
Examiner

Approved: Dr. Joshua Bourdage
External Examiner

Date: October, 18th, 2021

REDUCE RACIAL BIAS ON INTERVIEW

Acknowledgements

First and foremost, I would like to express my sincere thanks to my supervisor, Dr. Nicolas Roulin, for his endless support, help, guidance, inspiration and encouragement during my whole graduate study period. I gratefully appreciate his help for my application to this program, the study at the program and this thesis. As an international student, this was my first time studying abroad, including writing a thesis in English, which was more challenging for me. His remarkable patience and supports were vital for me during the whole process as they paid an irreplaceable role in encouraging and motivating me to overcome various challenges. Moreover, his quick replies and detailed feedbacks always back me up and kept me in the right direction. Having him as my supervisor is one of the best things I could ever have in this Master's journey. Without his help and support, I would not have had such a wonderful study experience at Saint Mary's University; thank you so much!

I would also like to thank my committee members. I am incredibly grateful to Dr. Debra Gilin and Dr. Jim Cameron for their reviewing my proposal and final draft. Their valuable feedback and insights helped me improve this thesis a lot. A special thank goes to Dr. Debra Gilin for her immense help, unlimited support, and remarkable kindness in my study and life during the past two years. Significantly, she encouraged me to try various opportunities and internships and provided generous mental support when I met difficulties, making my past two years a very fruitful and pleasant journey. A special thank also goes to Dr. Jim Cameron, my first TA professor, for his tremendous help and patience in my first TA job, which developed my various abilities and increased my confidence, benefiting me a lot when applying for additional jobs.

The past two years studying at Saint Mary's University have changed my life tremendously in various ways and made me better every day. I want to thank all the great professors, faculty, staff, colleagues and friends I have met in the Psychology department and Saint Mary's University. Thanks for all of your support, assistance, and help, which means a lot to me.

Last but not least, I would like to express my heartfelt gratitude to my parents, uncle and grandpa for their endless love and support throughout my master's journey despite the long distance between us. I also want to thank my husband, Bin Wang, who always supports, encourages, and companies me with unlimited love in my life. My love and gratitude to all of you are unwavering, authentic, and everlasting.

Table of Contents

ABSTRACT 1

ACKNOWLEDGEMENTS..... 4

INTRODUCTION..... 7

RACIAL BIAS..... 10

 RACIAL BIAS IN HIRING PROCESS..... 10

 IMPACT OF INTERVIEWERS' RACIAL BIAS ON INTERVIEWS 13

Interpersonal discrimination 13

Formal discrimination..... 16

ASYNCHRONOUS VIDEO INTERVIEWS (AVIS) 17

 WHAT ARE AVIS? 17

 AVIS TO REDUCE RACIAL BIAS IN INTERVIEWS 19

 LIMITATIONS OF AVIS TO REDUCE RACIAL BIAS 21

 OVERCOMING THE LIMITATIONS OF AVIS..... 25

METHOD..... 31

 DESIGN..... 31

 POWER ANALYSIS 32

 PARTICIPANTS..... 33

Recruitment..... 33

Selection and screening 33

Demographics..... 33

 STIMULUS..... 34

Job description 34

Interview questions and answers 34

Job applicants..... 34

 PROCEDURE 35

 MEASURES 36

Interview Rating Scales 36

Color-Blind Racial Attitude Scale 37

Attention Check 38

Manipulation Check 38

RESULTS..... 38

 DATA-CLEANING AND PREPARATION 38

 MANIPULATION CHECK..... 39

 COBARS CHECK 41

 HYPOTHESES TESTING 42

 ADDITIONAL ANALYSES 54

DISCUSSION 57

 PRACTICAL IMPLICATIONS 65

 LIMITATIONS AND FUTURE RESEARCH DIRECTIONS 68

 CONCLUSION..... 72

REFERENCES..... 73

APPENDICES 82

Introduction

Racial bias is a lasting issue, impacting many aspects of life for minority groups as well as hiring practices. In order to reduce the negative effect of racial bias, TITLE VII of the Civil Rights Act, enacted in the U.S. in 1964, requires employers to ensure equal employment opportunities for individuals from all races. In fact, until 2019, research showed that racial discrimination against non-White natives was still a severe issue for employment in nine countries in Europe and North America (Quillian et al., 2019). Especially during the COVID-19 pandemic, in the U.S., the difference of employment ratios between majority and majority groups is increasing (Kochhar, 2020). However, the most widespread selection devices (e.g., resume screening and the job interview) have insufficient safeguards against unfair discrimination against minority applicants, especially visible minority applicants. Currently, because of pandemic period, in order to adapt to remote work, JOBVITE (2020) indicated that 61% of the recruiters in their survey are using video in the screening process, and 80% are using it in the interview process. Compared with other technologies (e.g., Skype and Zoom meeting), asynchronous video interviews (AVIs) have the potential benefits to create a fairer interview process. Its nature overlaps with the structured interview that is a highly valid and reliable interview approach, by controlling various biases and establishing an interview standard. Thus, I propose that using AVIs is a feasible solution to make relatively fair hiring decisions for applicants from various races.

AVIs, a new type of technology-mediated interview, have become increasingly popular in the past several years as a screening and selecting method in the hiring process. In general, all applicants who apply for the same position are asked to log into a web platform, and to independently video-record their responses to a standard list of questions via their webcam

(Brenner, 2016). Interviewers later review and evaluate the applicant's video responses. Compared to other interview modes, AVIs could help reduce or eliminate the effects of interviewers' racial bias on applicants' performance during the interview by default. Firstly, all applicants can complete an AVI in a standardized way, using a structured interview approach, which is highly predictive of future job performance and less prone to biases (Moscoso, 2000; Pulakos & Schmitt, 1995). Secondly, AVIs involve one-way communication as interviewers and applicants complete their parts independently without any interaction. Then, minority applicants have no way to know interviewers' non-verbal behaviors (e.g., less eye contact) during the interview. Thus, this can eliminate the negative effects of interviewers' non-verbal behaviors, which are caused by their racial bias, can impact applicants' actual performance (e.g., less willingness to communicate with interviewers) in the interview (Hebl et al., 2002).

Although AVIs can integrate many elements of structure to help control racial bias in evaluations, not all structured interview components are included in all AVIs by default. Further, interviewers can easily distinguish applicants' races in AVIs, even after watching the first several seconds of the recorded videos. Moreover, compared with traditional face-to face interviews, interviewers in AVIs have access to more information (e.g., video background content and decorated style) that could leak out applicants' racial information (Lukacik et al., 2020). Lastly, in AVIs, interviewers can score recorded responses by just watching a few minutes and skipping the rest of the videos (Torres & Mejia, 2017). As a result, when interviewers hold racial bias, they might evaluate minority applicants more negatively than majority applicants. This could offset the benefits of AVIs in controlling the negative effect racial biases on applicants' actual performance in the interview described above. However, previous studies (Cotter et al., 1982; Silvester et al., 2000) found that audio-only interview model (e.g., phone interview) can reduce

racial biases. Further, biased interviewers usually form negative impressions of minority applicants in the first few seconds of the interview mainly based on demographic characteristics and visual cues (e.g., hair, skin, and eye color) (Derous et al., 2016; Huffcutt & Roth, 1998; Levashina et al., 2014; McDaniel et al., 1994). When interviewers are only provided with audio-recordings of applicants' responses which include fewer visual racial cues, they are more likely to evaluate applicants based on their interview performance and job-related abilities, leading to a relatively fairer decision. Given that, I propose that a possible way to control interviewer's racial bias in AVIs is to eliminate visual cues by merely providing audio answers without images.

However, this approach still has drawbacks. Many studies have suggested that removing the video (i.e., visual elements) completely in the audio-only interview (i.e. telephone interview) would reduce the information interviewers can collect from applicants, including non-verbal behaviors, and might result in misunderstandings in communication, leading to lower evaluation scores (Silvester et al., 2000; Silvester & Anderson, 2003). However, studies conducted by Buijsrogge et al., (2020) showed that a partially blind interview (using a curtain to separate interviewers and applicants in the initial rapport-building stage) is an effective way to reduce interviewers' biases and protect applicants with a facial stigma. Thus, I further propose that a potential solution to balance reducing biases while still gathering more information in AVIs is to use audio-only mode (without image) for the first several questions, followed by the video mode for the remainder of the interview. Using an audio-only mode in the first several questions limit the racial cues available to interviewers, whose evaluations should mainly be based on applicants' performance and job-related abilities, leading to relatively fair initial impressions. Those relatively fair initial impressions should serve as anchors (Derous et al., 2016) in the

remainder of the AVI, when video responses are used demographic characteristics are visible, leading to less biased final evaluations.

In this study, I plan to achieve three theoretical and practical goals. First, I will examine whether interviewers show racial bias in AVIs. Second, I will determine whether eliminating visual cues (i.e., using audio responses only) is a feasible solution to reduce racial biases in AVIs. Then, I will examine whether this result holds after exposure to visual cues again to avoid completely losing applicants' non-verbal information. Overall, this research will help highlight the ways AVIs could be used to reduce racial biases.

Racial Bias

Racial bias in hiring process

The fact that different races experience different performance scores in selection has proven to be an extremely controversial issue. However, before the U.S. Civil Rights Act of 1964, none of the published studies reported racial differences in the interview, and the issue of racial differences in the interview was not mentioned in any of the narrative reviews that emerged before or around this time (Mayfield, 1964; Ulrich & Trumbo, 1965; Wagner, 1948). In the past decades, research focused on the lower employment rate of minority groups has increased gradually. Unfortunately, the lower employment rate of minority groups remains a pervasive issue globally. In Australia, Asian and Middle Eastern applicants had to submit at least 50% more applications in order to receive the same number of callbacks as majority applicants (Booth et al., 2012). Similarly, in Europe and North America, White applicants generally received 25%-200% more callbacks from employers than non-White applicants (Quillian et al., 2019). Further, during the pandemic period, the difference of unemployment rate between White and non-White applicants has increased. According to Kochhar (2020), in the U.S., before the

pandemic period (February 2020), the difference of the unemployment rate between White and other races (Black, Asian, and Hispanic) ranged from 0.3% to 3% for women and from 0.8% to 3.8% for men. In May 2020, the differences rose to 4.8% to 7.6% for women and 3.6% to 6.1% for men. This indicates the severity of race differences in employment.

Most research examining the lower employment of minority groups concentrated on the incompetence of minority groups (e.g., skill deficiencies, poor work ethic and attitude stereotypes) while paying less attention to external obstacles (e.g., the existence of artificial barriers and unfair treatment) faced by minority applicants in the hiring process (Moss & Chris, 2003; Neckerman & Kirschenman, 1991; Devah Pager et al., 2009). This thesis focuses on external obstacles because a fair hiring process is the precondition to compare the competences of majority and minority groups applicants. For instance, Asian-Americans are seen as a model minority group (Gottman et al., 1998) in the U.S. based on high educational attainments (U.S. Bureau of Labor Statistics, 2014; Hirshman & Wong, 2017; Nord et al., 2011; Roth et al., 2017; Sakamoto et al., 2009), but also experience higher unemployment than White Americans. Sakamoto et al., (2009) found that 49% of Asians completed college versus 30% of Whites. More recently, 59% of Asian workers had a college or higher degree compared to 37% of Whites (U.S. Bureau of Labor Statistics, 2014, 2014). Further, national surveys also showed that Asian-Americans have higher SAT scores than Whites (Nord et al., 2011; Roth et al., 2017). Thus, other external factors beyond competence need to be considered as well. Moreover, even though White people generally achieve higher scores than most minority groups in many selection tests (e.g., SAT, cognitive ability tests, and interviews), it does not mean that White applicants are better than all minority applicants in every interview. In fact, in an interview or resume screening, White applicants are generally evaluated more positively than minority applicants

who are identical in their abilities. Gaddis (2015) and Oreopoulos (2011) illustrated that in the first step of hiring practices, resume screening: resumes containing obvious racial cues (e.g., an African-American or Asian name) led to 30-50 percent fewer callbacks from employers compared to equivalent resumes without such cues. This indicates that with equivalent abilities described in the resume, minority groups still receive fewer callbacks. Therefore, we need to pay more attention on the existence of artificial barriers and unfair treatment towards minority applicants.

Compared with majority applicants, Braddock and McPartland (1987) and Wilson (1987) found that minority groups face more barriers, for instance, they have less access to job networks and, when seeking lower-skilled jobs, underutilize their networks. As such, minority groups inevitably have fewer opportunities to get an interview than majority applicants, ultimately leading to lower employment. And, even when minority applicants are invited for interviews, they are more likely to experience unfair treatments because of racial bias. Given that the interview is a part of the selection process of nearly every organization (Brenner, 2016; Cascio, 1991; Huffcutt et al., 2001; Ployhart et al., 2017), if racial bias exists during the process, minority applicants will be directly blocked or screened out from their “dream jobs”.

With the growing popularity of the concept of diversity, many people believe that diversity could be a solution to reduce racial bias in the interview. Unfortunately, research results showed the opposite. Evidence suggests that the efficacy of diversity in most organizational practices was limited (Kalev et al., 2006). In fact, some of the most popular organizational initiatives activated the racial bias instead of reaching its aims to reduce the discrimination (Dobbin et al., 2015). For example, Pager and Quillian (2005) showed that the hiring policies described by employers could radically diverge from actual practices. Kang et al. (2016) also

found that companies with diversity statements were not discriminating Black and Asian applicants less than those without such statements. Castilla and Benard (2010) highlighted that when a company's core values emphasized the importance of fairness and meritocracy, the hiring managers may, in contrast, show more bias in evaluation decisions. These results indicate that the diversity practices in organizations have achieved limited success in reducing racial bias in the interview; instead, these results point out a key but overlooked element—how to effectively control interviewers' racial bias in hiring practices.

Impact of interviewers' racial bias on interviews

Discrimination could influence applicants' performance and the interview evaluation by interpersonal discrimination and formal discrimination, respectively (Agerström & Rooth, 2011; Dipboye & Colella, 2013; Dovidio et al., 1998; Kaiser & Pratt-Hyatt, 2009; Rakić et al., 2011). As a specific type of discrimination, racial bias can directly or indirectly impact both applicants' actual performances as well as their interview evaluations. In terms of interpersonal discrimination, interviewers assess applicants based on their performances in the interview, but interviewers could change design elements of the interview between applicants, which might lead to actual poorer performances of minority applicants. In terms of formal discrimination, interviewers may pay less attention to applicants' actual performance in the interviews, and their evaluations could mainly rely on applicants' race. More information about interpersonal discrimination and formal discrimination will be provided in the following paragraphs.

Interpersonal discrimination. Racial bias could impact minority applicants' performance directly via interpersonal discrimination during the interview process. Dunnette and Bass (1963) 's statement that the personnel interview is the most widely used method to select and evaluate employees holds true today. Thus, in order to gain an job offer, applicants need to

show their best performance in the interview, achieving higher evaluation scores. However, the interview is a dual interaction between interviewers and applicants. Thus, applicants' performance is not only determined by them but also influenced by interviewers. Specifically, interviewers could actively or passively impact the interview performance of minority applicants via unstructured interviews that comprise conversation-like interview questions and follow-up questions that both vary from applicant to applicant (Blackman, 2002). The unstructured interview has remained the most common and popular interview form globally for over a century and is perceived by human resources (HR) executives as a more effective selection method than others (Dipboye, 1997; Highhouse, 2008; Roulin & Bangerter, 2012; Terpstra et al., 1996; Van der Zee et al., 2002). Specifically, Van der Zee et al. (2002) found that, in the Netherlands, only about half of the managers developed their interview questions based on a strict job analysis procedure; most of them used unstandardized questions and follow-up questions that both varied from applicant to applicant. In Switzerland, Fernandez and Pougnet (2018) found that the unstructured interview was the most dominant interview form in the hotel industry, regardless of hotel star rating. In the United States, as well, the unstructured interview remains the most common interview form (Dipboye, 1997; Wiersma, 2016).

However, the popularity of the unstructured interview is inconsistent with its actual effectiveness because unstructured interviews have been criticized for their low reliability, low validity, and susceptibility to different biases (e.g., race, gender, and disability) (Arvey, 1979; Campion et al., 1988, 1994; Kausel et al., 2016; McDaniel et al., 1994; Schmidt & Hunter, 1998; Schmidt & Zimmerman, 2004; Wiesner & Cronshaw, 1988). Huffcutt and Arthur (1994) found that structured interviews, consisting of standardized interview questions and response scoring, increase predictive validity to .57. The most common format of an unstructured interview is

unplanned (Campion et al., 1988), inconsistent (Blackman, 2002; Schmidt & Zimmerman, 2004), and consists of informal, conversational questions (Chauhan, 2019; Van der Zee et al., 2002; Way & Thacker, 1999). Thus, each applicant might face different interview procedures and questions (Pursell et al., 1980), increasing the possibility of interviewers' racial bias having a negative effect on applicants' performance (Madera & Hebl, 2013; Wegner, 1994). For instance, during unstructured interviews, interviewers could discriminate minority applicants by asking them job-unrelated questions (Azarpazhooh et al., 2008) and spending less time on the interview (Hebl et al., 2002; Kleck et al., 1966). Less interview time and fewer job-related questions decrease minority applicants' opportunities to show their job-related capabilities and experience in the interview. Thus, minority applicants' abilities are inevitably underestimated.

Besides active approaches, interviewers' racial bias could impact minority applicants' interview performance in the interview process passively. Even if interviewers do not express their racial bias directly, it might (unconsciously) impact their non-verbal behaviors. Previous research has demonstrated that, despite a disavowal of prejudice, individuals' underlying interracial negativity often caused behavioral expression, particularly with nonverbal behaviors that are hard to control (Dovidio & Gaertner, 2004). For instance, studies have shown that White people who harbor automatic negative reactions towards minority groups tend to show fewer approach-oriented nonverbal behaviors (e.g., eye contact, smiling, forward body leaning) and more avoidance-oriented behaviors (e.g., gaze aversion, increased interpersonal distance) during interracial interactions (Dovidio et al., 2002; Fazio et al., 1995; Greenwald et al., 2009; McConnell & Leibold, 2001). In the interview, interviewers' underlying negativity may also "leak out" behaviorally when interacting with minority applicants. Minority applicants may be able to detect and interpret such underlying negative signals and have negative reactions (Krysan

& Couper, 2017; Shelton et al., 2009; Tropp, 2007). Specifically, they might put less effort and provide shorter answers in the interview. In extreme cases, applicants might choose to refuse communication with a sense of reticence. Therefore, minority applicants might provide less information about their abilities and experience than majority applicants, leading to poorer interview performance and lower evaluation scores.

Formal discrimination. Interviewers' biases can directly impact their evaluation of applicants in the interview via racial stereotypes or similarity effects. For racial stereotypes, although some races benefit from some stereotypes (e.g., Asian people are good at mathematics), the main body of research showed that minority applicants are evaluated less favorably than majority applicants (Arvey, 1979; Colella et al., 2017; Parsons & Liden, 1984; Sackett & DuBois, 1991), which is consistent with studies in social cognition (Fiske & Taylor, 1991) and tribal stigma (Goffman, 1963). Similarly, interviewers can form a negative initial impression of an applicant from a specific minority group based on real or imagined attributes associated with that racial group. As a result, when interviewers distinguish applicants' races in the interview (e.g., based on visual or accent cues), minority applicants are rated lower in the interview performance than the majority applicants, even though they are equally qualified for the job.

Similarity effects play a significant role in interview evaluation as well. The similarity effect indicates that individuals prefer others they believe are similar to them (Byrne, 1997; Clark & Fiske, 1992; Montoya & Horton, 2013). A meta-analysis of over 300 similarity studies observed that similarity produces a positive, moderate size, effect on attraction (Montoya et al., 2008). Those attractions produce benefits for certain groups. For example, studies have found that minorities have a higher likelihood of being hired, promoted, or evaluated favorably when there are more minorities in positions of power in an organization or industry (Cardy & Dobbins,

1986; Cohen et al., 1998; DiTomaso et al., 2007; McGinn & Milkman, 2013; Roth, 2004).

Further, in a meta-analysis of rater race effects on performance ratings, Kraiger and Ford (1985) found that both majority and minority raters gave significantly higher job performance ratings to members of their own race. Pulakos et al. (1989) also found significant interactions between rater race and ratee race on evaluations of job performance, indicating that the ratee received higher scores when they shared the race of the rater. According to the similarity effect, in the interview, if interviewers are White, White applicants are more likely to be rated higher. Further, White people (Non-Hispanic) are the majority of the population, occupying 60.1% of the whole U.S. population, while Black and Asian are 12.2% and 5.6%, respectively (Ghosh, 2020). Thus, it is much more likely for majority than minority applicants to share the same race as interviewers and thus to benefit from the similarity effect in the interview.

According to the research mentioned above, three primary issues should be addressed when dealing with the effects of interviewers' racial bias: specifically, unstructured interviews, dual interactions, and exposure of racial cues. Many interview methods are insufficient in controlling these issues. Thus, the racial bias remains a severe issue in the interview. However, the emergence of asynchronous video interviews (AVIs) is a potential solution to control the negative effect of interviewers' racial bias, although this is not the initial intention behind AVIs.

Asynchronous video interviews (AVIs)

What are AVIs?

Prior to illustrating how AVIs can reduce racial bias in the interview process, it is important to clarify how AVIs work. AVIs, a new type of technology-mediated interview, have become increasingly popular in the past several years as a screening method and as an alternative to standard in-person interviews (Langer et al., 2016). Generally, in AVIs, all applicants who

apply for the same position are asked to log into a web platform, and to independently video-record their responses via their webcam to a standard list of questions, which can appear as either on-screen text or as pre-recorded videos of an individual asking the question (Brenner et al., 2016). Hiring managers later review and evaluate all applicants' video responses based on the same performance criteria. AVIs can thus be used very similarly to in-person, structured interviews but without interactions between applicants and interviews as applicants and interviewers both complete their responsibilities independently (Brenner et al., 2016; Chamorro-Premuzic et al., 2016).

In order to satisfy the growing demand to efficiently recruit and hire from an increasingly global workforce, organizations have turned to digital interview technology to assist with many recruitment and selection activities (Reynolds & Weiner, 2009; Ryan & Ployhart, 2014; Tippins, 2015), especially during the pandemic period. Although all digital interview technologies—phone interviews, video conference interviews, and AVIs—reduce the potential costs (e.g., time, finance, resources, and labor) compared to in-person interviews, AVIs provide extra benefits: more flexibility (no need for scheduling interview time), consistency (no differences in the interview procedure between different applicants), standardization (no impact of interviewer behavior on applicant performance), and analytical possibilities (possible automatic evaluation of the interviews) (Langer et al., 2017). In fact, ConveyIQ (2019) reports that AVIs improved 64% time-to-hire rates and reduced travel costs by up to 50%. Thus, AVIs are a more cost-effective option for organizations that are willing to broaden the scope of their applicant pool, both in terms of applicants' location and the number of potential applicants. For these reasons, many providers (e.g., HireVue, Vidrecruiter, Sparkhire) are offering AVI platforms and services for

organizations and many large employers (e.g., Dell, Hershey, Oracle, Wal-Mart, and Geico) using AVIs in their hiring process (Torres & Gregory, 2018).

AVIs to reduce racial bias in interviews

AVIs have several inherent advantages for reducing racial bias against minority applicants, both in terms of their actual interview performance and interviewers' evaluations. For interview performance, AVIs eliminate interpersonal discrimination in both active and passive ways because all applicants are required to independently complete a AVI in a standardized way, using a structured interview approach, which is a one-way communication without any influence from the interviewer.

The structured interview is an effective approach to reduce racial bias by preventing interviewers from changing interview design elements. Further, the structured interview that consists of formal, job-related questions is higher in validity and reliability than the unstructured interview (Campion et al., 1994; Conway & Peneno, 1999; Kausel et al., 2016; McDaniel et al., 1994; Pursell et al., 1980; Schmidt & Hunter, 1998; Schmidt & Zimmerman, 2004; Wiesner & Cronshaw, 1988). Campion et al. (1988) stated that the structured interview includes six steps: (1) develop interview questions based on a job analysis, (2) anchor the rating scales for interview questions with examples and descriptions, (3) ask the same interview questions to all applicants, (4) follow a consistent process for all applicants, (5) set up an interview committee to rate answers according to the same standard, (6) give extra attention to job-relatedness, and documentation in accordance with testing guidelines. A meta-analysis that included 31 studies reported that the differences of rating scores between Black and White applicants are smaller ($d = .23$) in structured interviews, compared to in unstructured interviews (Huffcutt & Roth, 1998).

Two of those elements are present in all AVIs. More precisely, the third element (i.e., asking the same interview questions to all applicants) and the fourth element (i.e., following a consistent process for all applicants) are by default included in all AVIs. The other elements can be integrated in AVIs but are not automatically applied. For instance, not all companies or organizations use multiple raters. Further, organizations can develop AVIs without doing a proper job analysis or might use unstructured evaluation/rating. Interviewers could choose to make an evaluation directly by skipping or stopping watching recorded interview videos of applicants. Yet, since interviewers have no opportunity to actively change key interview elements (e.g., asking fewer questions or shortening interview time) in AVIs, their racial biases cannot actively impact minority applicants' chances to perform.

Moreover, because AVIs involve one-way communication, they are also an effective way to control the effect of interviewers' non-verbal behaviours which can passively impact minority applicants' performance. Although the structured interview is insufficient to control interviewers' unconscious non-verbal behaviours, AVIs solve this issue by default because applicants and interviewers complete their part independently. Without interactions, interviewers' non-verbal behaviors cannot impact minority applicants' interview performances. Thus, interviewers' automatic nonverbal reactions, regardless of whether they are approach-oriented or avoidance-oriented, will not influence applicants' emotions or performance in AVIs.

In sum, AVIs' highly structured nature can help control or eliminate the negative effect of interviewers' racial bias on minority applicants' actual performance and on their evaluation. However, it is essential to note that structured interview design elements are not the default nature of AVIs. When an AVI doesn't satisfy all six elements of structured interviews, biased

interviewers can still directly rate minority applicants lower, even if their actual performance was not impacted by interviewers' racial bias.

Limitations of AVIs to reduce racial bias

There are several reasons for why AVIs will not completely eliminate racial biases. Firstly, in the traditional interviews, applicants' demographic characteristics play a significant role in interviewers' final evaluation (Barrick et al., 2009). Barrick et al. (2012) found that interviewers' initial impressions of applicants formed in the rapport-building stage are highly predictive of interview outcomes. A meta-analysis conducted by Thorsteinson (2018) also found evidence that final hiring decisions might be determined early in the interview process instead of based on actual interview performance. Likewise, in AVIs, Torres and Gregory (2018) found that hiring managers' combined ratings of physical attractiveness and style were strongly correlated ($r = .71$) with interview evaluations. Although AVIs can eliminate some of the effects of interviewers' racial bias on minority applicants' interview performance, physical attractiveness and styles are obvious demographic characteristics interviewers easily observe in the first several seconds when they watch record videos in AVIs. Given that, when watching and rating the first recorded answer, biased interviewers might form inaccurate and negative impressions of minority applicants based on those characteristics. The final evaluations of minority applicants would be dominated by those inaccurate and negative impressions.

Moreover, in AVIs, interviewers have a unique opportunity to evaluate applicants based mainly on demographic characteristics: they could choose to skip submissions that are inconsistent with their initial impressions formed based on demographic characteristics (Torres & Mejia, 2017), directly leading to unfair evaluations. In traditional interviews, especially in structured interviews, interviewers are forced to collect information about applicants' job-related

abilities by various interview design elements (e.g., job-related questions and a standard procedure). They thus form more accurate impressions and make relatively fairer evaluations, which limits the influence of demographic characteristics. In contrast, skipping or stopping watching recorded interview videos of applicants is a unique component of AVIs (Lukacik et al., 2020). While there are no empirical studies examining whether (or to what extent) raters do skip video-responses from applicants they formed negative first impressions about in AVIs, it can be reasonably assumed that some interviewers (e.g., those biased against minorities) may be more likely to do it. As mentioned above, interviewers might form initial impressions of an applicant at the beginning of both traditional in-person interviews and AVIs. Yet, AVIs allow interviewers to rate applicants without completely reviewing all recorded interview videos, while it is more difficult to stop or cut-short an in-person interview. If interviewers choose to do that, the potential benefits of the structured elements in AVIs for controlling racial bias when evaluating minority applicants' performance disappear. Final evaluations become merely based on demographic characteristics without information that shows applicants' interview performances or job-related abilities. Further, if AVIs do not involve a panel of interviewers, no one could prevent or monitor interviewers' review process.

Lastly, AVIs include more demographic characteristic information than traditional interviews. In traditional interviews, interviews are conducted in the same location, an office in the hiring companies, for all applicants. Thus, the primary source of demographic characteristics is applicants' physical and professional appearance. In AVIs, interviewers have more access to demographic characteristics from applicants' interview location and background content (Lukacik et al., 2020). For instance, when applicants record their interviews in their room, the decorated style might indicate their race and even religious affiliation. Many studies have

indicated that evaluators rely more on demographic characteristics in evaluations of current and future performance when more relevant demographic information is available (Fiske, 2014; Kunda & Thagard, 1996; Macrae et al., 1999). Likewise, in AVIs, with more information about applicants' demographic characteristics, interviewers might rely more on this information than interview performance and job-related abilities when making final evaluations, leading to racial bias. Given above limitations with AVIs, I propose the following hypothesis:

H1a: In the AVIs with video mode, majority applicants will get higher interview performance scores than minority applicants.

The main body of literature on the effect of interviewers' racial bias on minority applicants focuses on Black applicants. In the U.S., since the Civil Rights Movement of 1960 (Donohue & Heckman, 1991; Wilson, 1987), the barriers faced by African Americans are decreasing, regardless of legal and social reforms. However, hate crimes against Black Americans have been rising since the 2016 presidential election (Federal Bureau of Investigation, 2018), indicating that anti-Blackness continues to be profoundly woven into U.S. society (English et al., 2020). The literature on Black applicants is consistent with the trend of racial discrimination against African Americans in society. Quillian et al., (2017) conducted a meta-analysis from 1989 to 2015 and found that, compared to African Americans, White applicants receive 36% more callbacks on average; this shows there has been no change in the level of hiring discrimination against African Americans over the past 25 years.

Besides African Americans, other minority groups are also victim of racial discrimination in the workplace, including in the interviews. In recent decades, the examination of racial bias against other minority groups has always been limited by the polarization of racial discourse as a Black and White issue (Juhn & Kim, 1999; Reskin et al., 1999). As a result, there is a shortage of

studies on other minority groups, especially Asian American (Roth et al., 2017), reflecting a severe gap in the literature (Cheng & Thatchenkery, 1997; Lai & Babcock, 2013; Thatchenkery & Cheng, 1997). The population of Asian Americans is growing faster than all other racial and ethnic groups, so these 20 million individuals' racialized experiences must be included in our conversations on race (Atkin et al., 2018; Lopez et al., 2017). Compared to other minority groups, Asian Americans are always considered as a "model minority" because of their higher level of education and occupational achievement than other groups (Kolbrin et al., 2008; Mattern et al., 2008; Roth et al., 2017). However, Asian Americans are still facing racial discrimination in the workplace. In 2000, a national survey that included 1218 adult Asian Americans found that 40 percent of those experienced unfair treatment in the workplace (e.g., getting jobs or promotions) because of others' racial bias (Lien, 2004). Further, a 2007 Equal Employment Opportunity Commission report also illustrated that Asians represented 10.15 percent of professional employment, but only 3.70 percent of executive/senior-level officials and managers. In contrast, non-Hispanic Whites showed a reverse pattern constituting 76.24 percent of the professional workforce but 87.42 percent of executive/senior-level positions (U.S. Equal Employment Opportunity Commission, 2007).

Although there are many differences between African and Asian Americans, in the resume selection, the effect of racial bias on African and Asian Americans are similar. Past research demonstrates that resumes containing distinctively African American or Asian names on average lead to 30-50 percent less callback from employers than do otherwise equivalent resumes without those minority names (Bertrand & Mullainathan, 2004; Gaddis, 2015; Oreopoulos, 2011). Kang et al. (2016) also indicated that with African or Asian names and experience in resumes, callback rates are around 10%. After "whitening" names and experience

(e.g., changing first or last names and removing related ethical experience), the callback rates for African and Asian applicants grow to a similar level—25.5% and 21%, respectively. According to the above results, I assume that Asian Americans, as a visible minority like African Americans, might be subject to racial discrimination in the interview at a similar level. As demonstrated by Behrend et al. (2012), discrimination based on visual cues could extend into the digital world. I propose the following hypothesis:

H1b: In the AVIs with video mode, there is no difference between the interview performance scores of Black and Asian applicants.

Overcoming the limitations of AVIs

To reduce the racial bias, AVIs, besides using structured elements, have to limit demographic information available to interviewers and prevent interviewers from skipping submissions inconsistent with their initial impressions formed based on demographic characteristics. Reducing sources that contain information about applicants' demographic characteristics would help interviewers develop accurate impressions of applicants. When forming impressions of others, individuals integrate the full range of information and characteristics collected, including demographic characteristics and individuating information (Fiske & Neuberg, 1990). In the workplace, individuating information refers to job-related knowledge, skills, abilities, personality traits, behaviors, and attributes of a specific individual (Copus, 2005). As the more individuating information becomes available, the less influence demographic characteristics tend to have (Kunda & Thagard, 1996). Then, relying more on individuating information, interviewers are more likely to form accurate impression of applicants and make fair evaluations. Cotter et al. (1982) demonstrated that, in telephone interviews, interviewers' race had little or no effect on applicants' performance on questions that are

unrelated to the race as telephone interviewers show less interviewers' demographic characteristics than face-to-face interviews. Likewise, compared with video, audio-only responses provide fewer demographic characteristics, particular racial cues, about applicants to interviewers (Silvester et al., 2000).

Similarly, in AVIs, one potential solution is to require interviewers to assess applicants based on audio-recorded answers, as demographic characteristics mainly are presented by visual cues (e.g., appearance, skin color, hair color, and room decorated styles). Like telephone interviews, in AVIs interviewers could be only provided access to the audio of applicants' responses without the image and any visual elements of race. As forming initial impressions about others is inherent to human nature, it is impossible to eliminate interviewers' initial impressions of applicants. Further, people tend to form the initial impression too soon and then stop making any adjustment. Empirical findings also support that individuals are less willing to seek out individuating information on their own (Cameron & Trope, 2004) but rather try to form an impression of a target as soon as they feel they collect enough information to form a plausible evaluation (Epley & Gilovich, 2004). In the audio-only AVI version, the lack of obvious visual cues makes it more difficult for interviewers to form applicants' impressions merely based on demographic characteristics, although some cues (e.g., accent) remain. Therefore, interviewers are more likely to form more accurate impressions of minority applicants by forcing them to pay more attention to individuating information (e.g., answers to job-related questions). This potentially reduces the effects of racial bias on interview evaluation and leads to a fairer assessment between majority and minority applicants based on their interview performance.

H2a: In the audio-only AVIs, there is no difference between the interview performance scores of Black and Asian applicants as compared to White applicants.

Although using audio-only to replace the video as interview material helps controlling job-unrelated demographic characteristics, it also limits the individuating information, mainly visual cues, interviewers collect from applicants, thus harming the quality of interviews to some extent. Silvester et al. (2000) and Silvester and Anderson (2003) also demonstrated that, compared with in-person interviews, applicants received lower evaluations in telephone interviews. According to previous literature, the absence of visual cues might cause three primary types of information loss: (a) loss of nonverbal information (e.g., eye contact, facial expression and body language), (b) loss of contextual information (e.g., environment and physical features of applicants), and (c) misunderstanding of responses (Barrick et al., 2009; Blacksmith et al., 2016; Chapple, 2013; Creswell et al., 1998; Sturges & Hanrahan, 2004; Sweet, 2002; Walter, 1979). The absence of contextual information encourages interviewers to form more accurate impressions by helping them focus on individuating information (e.g., response content) and ignore job-unrelated demographic characteristics. However, the other two types of information—nonverbal information and the misunderstanding of responses—can impair interviewers' ability to collect individuating relevant information about applicants, leading to lower evaluation scores because of incompetence. Particularly, the loss of nonverbal information is linked to negative perceptions of intelligence (Borkenau & Bielefeld, 1995; Larsen & Shackelford, 1996); and the misunderstanding of responses could lead to poor perceptions of interpersonal skills (Walter, 1979). Thus, in the AVIs, rating applicants merely based on audio-only answers might cause similar results as telephone interviews, leading to lower evaluations of all applications.

H2b: In the audio-only AVIs, applicants (from all races) will get lower interview performance scores than in the video AVIs.

To reduce the influence of demographic characteristics while still gathering sufficient information from applicants, I propose one possible approach is to use a partially blind mode: present audio-only mode for the first several questions, followed by video mode for the remainder of the interview. The model is supposed to decrease the negative impacts of the anchoring effect caused by various demographic characteristics, encouraging interviewers to make fair evaluations based on applicants' individuating information. The whole interview process, according to Chapman and Johnson (2002), is an anchoring procedure where many cues (e.g., applicant's stigma and skin color) impact interviewers' initial impressions of an applicant prior to final evaluation. Further, in the interview, the anchoring effect refers to an interviewer's final evaluations dominated by a given 'anchor value' (e.g., initial impression) formed at the beginning of the interview (Derous et al., 2016; Eroglu & Croxton, 2010), and largely based on demographic characteristics. This aligns with confirmatory hypothesis testing—one of the currently dominant views of the anchoring paradigm (Chapman & Johnson, 2002; Mussweiler & Strack, 1999): interviewers might focus on evidence that is similar to the anchor value, activating aspects of applicants' interview performances that are consistent with their first impressions. The findings of Mathis et al. (2014) also supported this, finding that some interviewers had decided whether an applicant was suitable or not in the first two to four minutes of the interview. In the rest of the interview, interviewers only focused on evidence that supported their decisions.

However, the experimental studies conducted by Buijsrogge et al. (2020) proposed a solution to effectively control the anchoring effect. In their studies, if the interview is a partially blind interview (using a curtain to separate interviewers and applicants in the initial rapport-building stage), there was no difference in interviewers' initial impression of applicants with a facial stigma and non-stigmatized applicants in the rapport stage. And, the anchoring effect was

decreased for applicants with uncontrolled, visual stigma (i.e., skin disorders like psoriasis, severe acne or abnormal pigmentation; vascular anomalies like extreme facial blushing; burn scars; congenital facial deformations, etc.), leading to a fairer final evaluation than normal face-to-face interviews. Specifically, in the rapport-building stage, using the curtain to separate interviewers and applicants eliminated visual cues, thus preventing interviewers from forming a negative impression of applicants with a facial stigma. Then, in the questioning phase of the interview, even after removing the curtain and presenting facial stigma cues, interviewers still paid more attention to applicants' job-related information, reducing the negative effects of the stigma on the final evaluation. Facial stigma and racial cues both are heavily based on visual information, thus, I assume that the partially blind model in the AVI could work as the curtain in controlling interviewers' bias.

The main goal of this partially blind model in AVIs is to help interviewers form accurate initial impressions based on individuating information. Then, using those accurate impressions to control racial bias that are mainly triggered by demographic characteristics presented via visual cues, leading to more accurate evaluations in the end. For instance, if an AVI contains six questions, interviewers assess an applicant by reviewing the first three questions in audio-only mode and the last three questions in video mode. In the first three questions, interviewers have to evaluate applicants by listening to their responses. Without images and other demographic characteristics, interviewers are forced to collect individuating information from response content, leading to less racial bias in initial impressions of minority applicants. After forming relatively fair impressions of applicants, in the last three questions, interviewers are required to assess applicants in video mode answers as normal AVIs. In the video mode, interviewers have more sources to gain sufficient information about applicants, including demographic

characteristics and individuating information. However, as explained earlier, the impact of demographic characteristics on evaluations would decrease when more individuating information becomes available (Kunda & Thagard, 1996). Further, the anchoring effect would be more limited if interviewers form a relatively fair initial impression at the beginning of an interview (Buijsrogge et al., 2020), leading to a fair final evaluation based on applicant's actual performance.

H3a: In the partially blind mode, there is no significant difference between the interview performance scores of Black and Asian applicants as compared to the White applicants.

Demographic characteristics can potentially impact interviewers' judgment at any interview stage, regardless of how much individuating information has been obtained (Kunda & Spencer, 2003; Kunda & Thagard, 1996; Wessel & Ryan, 2008). Thus, in the last three questions, with demographic characteristics visible, White applicants might still receive higher evaluation scores than minority applicants. Yet, the partially blind AVI mode ensures relatively fair initial impressions of applicants and evaluations of the first three interview responses. Thus, the potential effect of interviewers' racial bias will be limited to the last three questions. Moreover, the relatively fair impressions formed in the first three audio-only questions are supposed to have a lasting impact on controlling the influence of demographic characteristics in the last three questions too. Given that, we should only observe a small increase in the scores for majority applicants and a small decrease in the score of minority applicants in the last three questions.

H3b: In the partially blind mode, there is no difference between the performance scores the first three questions and the last three questions for applicants from all three races.

Besides the three modes discussed above, interviewers' individual racism level could also impact the relationship between applicants' race and evaluations of their interview performance (i.e., act as a potential moderator). Psychological research finds that some people are more biased than others, including when it comes to racial bias. Nosek et al., (2002) found that over 80% of White people showed significant evidence of anti-Black bias at different levels, while the rest were nonbiased individuals. Further, Purkiss et al., (2006) demonstrated that individuals' racism levels are negatively associated with the favourable judgments of the applicants, affecting final hiring decisions. Specifically, White people with racist tendencies will be especially likely to rate minority applicants' performance lower. In accordance with the previous discussion of racial bias, it would be expected that minority applicants would be evaluated lower by White interviewers who hold higher racism views across three AVI modes.

H4: In the three modes of AVIs (i.e., the video, audio-only, and partially blind modes), the relationship between applicant's race and evaluations of their interview performance will be moderated by interviewers' racism level, such that minority applicants will receive especially lower evaluations when interviewers have higher racism scores.

Method

Design

The design of the study is a 3 (applicants' race: White, Black, Asian) × 3 (interview mode: video, audio-only, first audio then video) factorial between-subject design, with participants' level of racism as individual-level moderator. Participants acted as interviewers and were randomly assigned into one of nine conditions to watch the recorded responses from one applicant (from three actors of different races who complete a six-question interview based on the same script), and to rate the applicant's performance.

In summary, *H1ab*, *H2ab*, and *H3ab* examine how the interaction between applicants' race and the interview mode impact evaluation. *H4* looks at the moderating role of interviewers' racism on the relationship between applicants' race and evaluations of their interview performance in the three modes.

Specifically, *H1* tests, in the video mode, (a) whether minority applicants are evaluated more negatively than White applicants and (b) whether there are any difference between Black and Asian applicants.

H2 tests (a) whether the audio mode could eliminate race-based differences in evaluations and (b) whether applicants receive lower scores in the audio mode than in the video mode.

H3 tests (a) whether the partially-blind mode could also effectively eliminate race-based differences in evaluations and (b) whether the introduction of visual cues later in the interview does impact evaluations.

H4 tests whether interviewers' racism level is a significant moderator of the relationship between applicant's race and evaluations of their interview performance across the three modes.

Power Analysis

An a priori power analysis was conducted using G*Power to determine the necessary sample size to achieve a power of .80. A small-effect size of .10 was used as this was the most conservative effect size found in Mccarthy et al., (2010), which examined the degree to which highly structured job interviews are resistant to demographic similarity effects. An effect size of .10 should be sufficient as the interviewer's radical bias is the main part of our research. The analysis revealed that a final sample of 327 participants is necessary. Assuming that ~10 percent of participants will not complete the study or pass the attention check; the plan was to recruit 360 participants.

Participants

Recruitment. Participants were recruited via Prolific (www.Prolific.co), an online platform that provides access to participants willing to complete research studies in exchange for financial compensation (Palan & Schitter, 2018). Every Prolific participant who completed the survey was paid £3.50. Recruiting from Prolific provides a more reliable sample of specific and experienced participants than recruiting directly from organizations or student pools. Thus, this platform allows the acquisition of high-quality data in terms of response rate, internal reliability and naivety for analysis (www.mturk.com; Peer et al., 2017).

Selection and screening. In order to control the impact of other factors (e.g., the interaction between gender and race), all participants were required to be male, White, at least 18-year-old, and from the U.S. with hiring experience. Participants' data was excluded if they didn't complete the survey or failed two or more attention check questions. Among the 354 participants who contributed data to this study, 35 individuals were excluded. Specifically, 27 participants had no or little data, and eight individuals just passed one attention check question.

Demographics. On average, participants were 39.99 years old ($SD=12.20$). Of the 319 participants who were included in the analyses, 76.8% ($n = 245$) were employed full-time, 10.0% ($n = 32$) employed part-time, and 3.4% ($n = 11$) unemployed and actively seeking work, and 9.4% ($n = 30$) unemployed and not actively seeking work. The sample was well-educated as 9.7% ($n = 31$) held a doctoral degree, 34.2% ($n = 109$) held a master's degree, 34.8% ($n = 111$) held a bachelor's degree, 7.8% ($n = 25$) held an associate and professional degree, 13.2% ($n = 42$) completed high school, and 0.3% ($n = 1$) chose other. Participants had a mean of 6.53 years of experience ($SD=7.79$) as an interviewer. The mean number of traditional interviews that

participants had conducted in prior to the study was 51.98 ($SD=266.73$), and the mean number of AVIs they had completed in prior to the study was 4.25 ($SD=8.78$).

Stimulus

Job description. A job description for the role of Project Manager Job was created (see Appendix C) based on the online job analysis resources of similar and related roles (e.g., Project coordinator) from O*NET and NOC. The job description was created in majority by the thesis author, with reviews and edits offered by the thesis advisor.

Interview questions and answers. According to critical competencies required for the Project Manager role, six structured interview questions and corresponding answers (see Appendix D) were created in majority by the thesis author, with changes made based on reviews and edits offered by the thesis advisor and by a group of Subject Matter Experts (SMEs) that consisted of I/O graduate students at Saint Mary's University. Four past-behavioral interview questions and two situational interview questions were finally used in the study. Answer transcript were assessed on a 5-point scale using BARS anchored at 1-, 3-, and 5- point ratings; all six answers were around 3 point at an average level.

Job applicants. In order to guarantee identical content in the interview, a three-step process was used to determine the actor used as the job applicant from each race (White, Black, and Asian). In the first step, I recruited two men for each race, then pilot tested short video recordings for each of them on various aspects (e.g., accent, pace, and perceived age) with a group of Subject Matter Experts (SMEs) that consisted of I/O graduate students at Saint Mary's University. Results indicated that one of Asian job applicants acted a little bit differently from the others (i.e., perceived as having a thicker accent). Then, recruiting another Asian job applicant, the second pilot survey was conducted via Mechanical Turk with 50 participants to

test the perceptions of each actor about critical aspects of appearance (e.g., perceived attractiveness, likeability and health) based on the headshots of seven actors (i.e., three Asian, two Black and two White actors). Results showed that Asian 1 actor received significantly lower scores than the other six actors, leading to excluding him from the following steps. (see Appendix J). Meanwhile, the White 2 actor got generally higher scores than others, which is partly why I finally chose the White 1 actor for the thesis. Lastly, six applicants recorded their responses to a six-question AVI for the job based on the same answers with the thesis author via Zoom meetings. All recorded AVIs were rated by the thesis author and the thesis advisor. According to the results of the above three steps, one job applicant for each of the three races (i.e., the Asian 2, the White 1, and the Black 1 actors) was selected as they got the closest score in the pilot study and evaluations of the final recordings (see Appendix J). Finally, each applicant's interview in three different modes were prepared: video mode (all six questions), audio-only mode (all six questions), and partially blind mode (first three questions in audio-only mode, and the remaining three in video mode).

Procedure

Data for the study were collected through Qualtrics data collection software, linking to a Prolific account. The mean completion time of this survey was 28.78 minutes ($SD = 12.35$ minutes; range: 5.95 to 115.20 minutes). Participants who were over the age of 18, White, male and from the U.S. had access to the survey via Qualtrics. Before starting the survey, participants reviewed an online consent form (See Appendix A) that highlighted the necessary information about our study (e.g., purpose, risks, benefits, and compensation). Those who agreed to the terms were randomly assigned to one of nine conditions in the 3 (applicants' race: White, Black, Asian) \times 3 (interview mode: video, audio-only, partially blind) factorial between-subject design. They

were presented with a job description (see Appendix C) that outlined the responsibilities and desired skills and characteristics for the position they would later evaluate. Then, each participant viewed an AVI recording that included six questions. After reviewing each question, participants were required to rate the applicant's performance on that question. After reviewing all six questions (see Appendix D), participants were also required to rate the applicant's entire performance and how much they possessed the abilities/KSAOs described in the job description (see Appendix E). After completing the interview evaluation, participants indicated their degree of racial bias using a 20-item self-report Color-Blind Racial Attitude Scale (CoBRAS) (Neville et al., 2000) (see Appendix F).

Finally, after two manipulation questions, participants were required to complete a demographics questionnaire that included questions about their highest level of education, employment status, interviewer experience, conventional interview experience, AVI experience. After the demographic questionnaire (See Appendix G), participants presented with the debriefing letter (See Appendix H) and thanked for their participation in the study. Participants were paid via Prolific.

Measures

Interview Rating Scales (Gorman et al., 2018). A revised version of the “Rating Scales Used to Code AWBVs” was used by participants to rate applicants' performance in the interview (see Appendix E). The revised scale included three parts: the first part required participants to assess an applicant's performance based on six interview questions, and the second part required participants to assess an applicant's specific KSAOs as mentioned in the job description, the final part required participants to assess the overall impression of an applicant. The first part contained one item: "Please give your evaluation of the quality of the applicant's

performance on this question using the following rating scale" (asked after each question). The second part includes all related KSAOs with a brief explanation. A sample item is "Based on the applicant's performance in the interview, please use the following rating scale to make an inference regarding the applicant's true level in each of the following work-related attributes" for "Teamwork / Collaboration". In both parts, responses were provided on a 5-point Likert scale (1 = poor to 5 = excellent). The third part included two items: "According to your overall impression of the applicant, please answer the following questions, the applicant possesses the necessary knowledge, skills, and abilities to perform the duties of the position they interviewed for, and the applicant is a good match or fit with the organization". Responses were given on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Color-Blind Racial Attitude Scale (CoBRAS) (Neville et al., 2000). The 20-item CoBRAS measure based on the work of Neville et al. (2000) was used to assess individual-level racial attitudes (see Appendix F). The CoBRAS consists of three sub-scales, specifically, racial privilege, institutional discrimination, and blatant racial issues. Racial privilege is referred to the blindness of the existence of White people' privilege. Institutional discrimination concerns a limited awareness of the implications of institutional forms of racial discrimination and exclusion. Blatant racial issues indicate unawareness to general, pervasive racial discrimination. Sample CoBRAS items include "White people in the U.S. have certain advantages because of the color of their skin" (White privilege), "Social policies, such as affirmative action, discriminate unfairly? against White people" (institutional discrimination), and "Racial problems in the U.S. are rare, isolated situations" (blatant racial issues). Responses were given on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree). The alpha coefficients for each of the three

sub-scales (i.e., racial privilege, institutional discrimination, and blatant racial issues) and the total score were .83, .88, .85, and .93, respectively.

Attention Check. In order to filter out participants who were not fully attentive, three attention check items were dispersed throughout the post- interview portion of the study. These items were “Select “strongly agree” for this item.”, “I have never used a computer.”, and “I have been to Mars.”

Manipulation Check. Two manipulation check items were also included in the survey to determine whether participants were attentive to the manipulation. At the end of the survey, participants were asked about the interview mode they were presented and the race of the job applicants they reviewed to check their level of awareness when they answered the survey questionnaire.

Results

Data-cleaning and preparation

Descriptive statistics and inter-correlations of key study variables are presented in Table 1. There were less than 1% missing data for all variables, therefore missing data were not removed. The values of asymmetry (skewness) and kurtosis for all variables were between ± 2 , which is acceptable to prove normal univariate distribution. Correlations among the main variables were then assessed (Table 1). The statistically significant correlations indicate linear associations in the data; however, the correlations between variables are not above .90, which suggests no multicollinearity in the data.

In preparation for analysis, a "race" variable was created such that 1 = the Asian job applicant, 2 = the Black job applicant, and 3 = the White job applicant. Similarly, a "Mode"

variable was created such that 1 = the video mode, 2 = the audio mode, and 3 = the partial blind mode.

There were no univariate or multivariate outliers. For univariate outliers, upon looking at the frequency of z-scores, only a couple of data points were above $\pm 3SDs$. Since these could be realistic data points, I did not filter them out. Cook's distance (a measure of leverage) was lower than 1 which implies that the distance is small, indicating lower chances of being a multivariate outlier. The P-P Plot histogram did not show a gross departure from normality, it was "normal-like" suggesting normality in the data. Further, no obvious pattern was found in the scatterplot histogram, indicating homoscedasticity and linearity in the data. Equality of cell sizes was approximately achieved (range: 33 to 39 participants per cell). Lastly, the linearity of regression assumption for dependent variables was met based on scatterplots of covariates and dependent variables. Thus, I proceeded to covariance analysis.

Manipulation Check

After removing participants who didn't complete most questions and failed more than two attention check questions, 319 participants remained. Manipulation check analysis was conducted for these 319 participants, with five participants failing manipulation question 1 (e.g., participant who was assign into the audio condition, but they chose the partially blind condition) and 27 failing manipulation question 2 (i.e., 6 participants in Video-Asian, 7 Partially blind -Asian, and 1 Partially blind -Black) (See Table 2). However, in the audio condition, participants had no obvious racial cue. It is reasonable for them to fail this question. Meanwhile, the option "I didn't know/ I am not sure" is also acceptable in the video and audio modes as some participants might be cautious of ethnicity-related questions. Finally, 0 participants were excluded as there was no difference of results after removing them, 319 participants remained.

Table 1.

Descriptive Statistics, Correlations, and Scale Reliabilities of Main Study Variables (N = 319)

Variables	N	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1 Interview Questions	319	3.73	.69	-											
2 Interview KSAOs	319	3.84	.70	.87**	-										
3 Interview Final Score	319	4.09	.90	.77**	.82**	-									
4 CoBRAS (Overall)	319	3.32	.83	.03	-.04	.07	(.93)								
5 CoBRAS (RP)	319	3.09	1.01	.03	.03	.02	.88**	(.88)							
6 CoBRAS (ID)	319	3.12	.90	-.01	.01	.08	.87**	.60**	(.83)						
7 CoBRAS (BRI)	319	3.82	.90	.06	.09	.09	.89**	.68**	.72**	(.85)					
8 Age	319	39.99	12.20	.09	.11	.05	.08	.08	.04	.10	-				
9 Education	319	2.23	.78	.09	.05	.05	-.11	-.08	-.03	.20**	-	-			
10 Employment Status	318	.87	.34	-.10	-	-	-.07	-.07	-.02	-.11*	-.04	.22**	-		
11 Interview Experience (Year)	309	6.53	7.79	-.07	-.05	-.11	-.03	-.04	-.03	.00	-.04	.05	-	-	
12 Traditional Interview Experience	314	51.98	266.73	-.01	.05	.01	-.06	-.03	-.05	-.09	-.01	-.11*	-.26**	.38**	-
13 AVIs Interview Experience	318	4.25	8.78	.13*	.13*	.11	.12*	-.12*	-.08	.13*	-.07	.23**	.13*	.00	-.01

Note. Scale are presented in parentheses along the diagonal. Interview questions is the mean number of six evaluations after each interview question. Interview KSAOs is the mean of six code abilities and KSAOs which are corresponding to six interview questions. Interview final rate is the overall impression of the job applicant. CoBARS = Color-Blind Racial Attitude Scale. RP = Racial privilege. ID = Institutional discrimination. BRI = Blatant racial issues. For Education: 1 = Associate degree or less, 2= bachelor's degree, 3= Master or Doctoral degree. For Employment Status: 0 = Unemployed, 1 = Employed. AVI = asynchronous video interview. * $p < .05$, ** $p < .01$.

Table 2.

Manipulation check analysis (N= 319)

Mode-Race	Passed Manipulation Check <i>n</i> (%)	Failed Manipulation Check <i>n</i> (%)
Video-Asian	33 (31 opted Asian, 2 opted unknow) (84.6%)	6 (6 opted White) (15.4%)
Video-Black	34 (34 opted Black) (100%)	0
Video-White	37 (37 opted White) (100%)	0
Audio-Asian	23 (8 opted Asian, 15 opted unknow) (69.7%)	10 (7 opted White, 3 opted Latino) (30.3%)
Audio-Black	25 (3 opted Black, 22 opted unknow) (71.5%)	10 (4 opted Asian, 6 opted White) (28.5%)
Audio-White	32 (11 opted White, 21 opted unknow) (97%)	1 (1 opted Asian) (3%)
Partially blind -Asian	30 (27 opted Asian, 3 opted unknow) (81.1%)	7 (6 opted White, 1 opted Latino) (18.9%)
Partially blind -Black	35 (35 opted Black) (97.2%)	1 (1 opted Asian) (2.8%)
Partially blind -White	35 (35 opted White) (100%)	0

Note. Video-Asian = Six video interview questions of an Asian job applicant. Video-Black = Six video interview questions of a Black job applicant. Video-White = Six video interview questions of a White job applicant. Audio-Asian = Six audio interview questions of an Asian job applicant. Audio-Black = Six audio interview questions of a Black job applicant. Audio -White = Six audio interview questions of a White job applicant. Partially blind -Asian = Three audio and three video interview questions of an Asian job applicant. Partially blind -Black = Three audio and three video interview questions of a Black job applicant. Partially blind -White = Three audio and three video interview questions of a White job applicant.

CoBARS Check

Before further analyses, I conducted one-way ANOVAs to measure whether there are differences of CoBARS among nine conditions. The results revealed that there was no difference of CoBARS, $F(8,318) = .339, p = .950$, and its three factors—Racial privilege, $F(8,318) = .595, p = .782$, Institutional discrimination, $F(8,318) = .391, p = .925$, and Blatant racial issues, $F(8,318) = .650, p = .736$, —

across nine conditions. Those findings suggest interviewers in nine conditions hold a similar level of racial bias.

Hypotheses Testing

This study had two IVs: Applicants' race (Asian, Black, or White), and interview mode (video, audio-only, partially blind); it had three DVs: interview questions, interview KSAOs, and interview final score. Color-Blind Racial Attitude were included as a covariate. Thus, a 3 x 3 factorial analysis of covariance (two-way ANCOVA) was conducted. Table 3 shows all results.

Table 3.

Univariate Results (N=319)

Independent Variable	Dependent Variable	<i>df</i>	<i>F</i>	<i>Sig.</i>	Partial Eta Squared
Applicants' Race	Interview Questions	2	5.510	.004**	.034
	Interview KSAOs	2	4.213	.016*	.027
	Interview Final Rate	2	4.735	.009**	.030
Interview Mode	Interview Questions	2	.298	.742	.002
	Interview KSAOs	2	.168	.845	.001
	Interview Final Rate	2	.003	.997	.000
Applicants' Race* Interview Mode	Interview Questions	4	.582	.676	.007
	Interview KSAOs	4	.809	.520	.010
	Interview Final Rate	4	.989	.414	.013

Note. For interview mode: 1 = *video mode*, 2 = *audio mode*, 3 = *partially blind mode*. For Job applicants' Race: 1 = *Asian job applicant*, 2 = *Black job applicant*, 3 = *White job applicant*. Interview questions is the mean number of six evaluations after each interview question. Interview KSAOs is the mean of six code abilities and KSAOs which are corresponding to six interview questions. Interview final rate is the overall impression of the job applicant. * $p < .05$, ** $p < .01$.

There were significant main effects of applicants' race on interview questions, $F(2,309) = 5.510$, $p = .004$, $\eta_p^2 = .034$, interview KSAOs, $F(2,309) = 4.21$, $p = .016$, $\eta_p^2 = .027$, and interview final score $F(2,309) = 4.735$, $p = .009$, $\eta_p^2 = .030$, while controlling for color-blind racial attitude. All pairwise comparisons were run, with 95% confidence intervals reported and p -values being Bonferroni-adjusted. For the

marginal means of interview questions, the White applicant ($M = 3.56$, $SD = .07$) was rated significantly lower than the Black ($M = 3.79$, $SD = .07$) and Asian ($M = 3.85$, $SD = .07$) applicants. For the marginal means of interview KSAOs, the Asian ($M = 3.93$, $SD = .07$) applicant was rated significantly higher than the White applicant ($M = 3.68$, $SD = 0.07$), but had no difference with Black ($M = 3.90$, $SD = .07$). Further, there was no difference between the White and Black applicants. For the marginal means of interview final score, the Asian ($M = 4.22$, $SD = .09$) and Black ($M = 4.18$, $SD = .09$) applicants were rated significantly higher than the White applicant ($M = 3.88$, $SD = 0.09$). There was, however, no significant main effect for interview modality on interview questions, $F(2,309) = .298$, $p = .742$, $\eta_p^2 = .002$, interview KSAOs, $F(2,309) = .168$, $p = .845$, $\eta_p^2 = .001$, and interview final score, $F(2,309) = .003$, $p = .997$, $\eta_p^2 = .000$, while controlling for color-blind racial attitude.

There was no significant two-way interaction between applicants' race and interview mode on interview questions (see Figure 1), $F(4,309) = .582$, $p = .676$, $\eta_p^2 = .007$, interview KSAOs (see Figure 2), $F(4,309) = .809$, $p = .520$, $\eta_p^2 = .010$, and interview final score (see Figure 3), $F(4,309) = .989$, $p = .414$, $\eta_p^2 = .013$, after controlling for color-blind racial attitude.

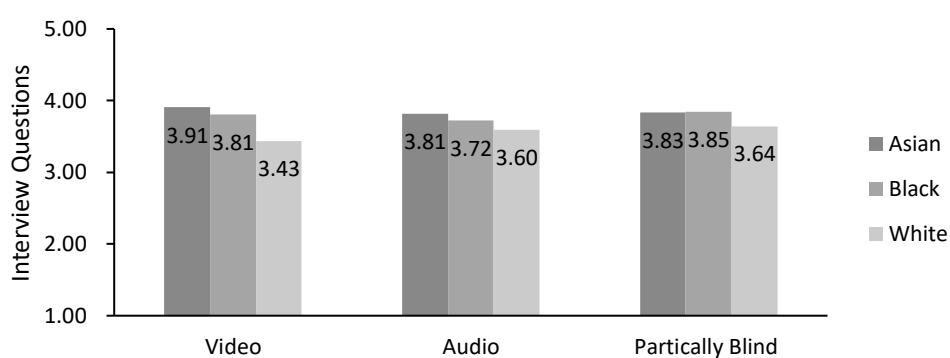


Figure 1. Interaction between interview mode and applicants' race on interview questions.

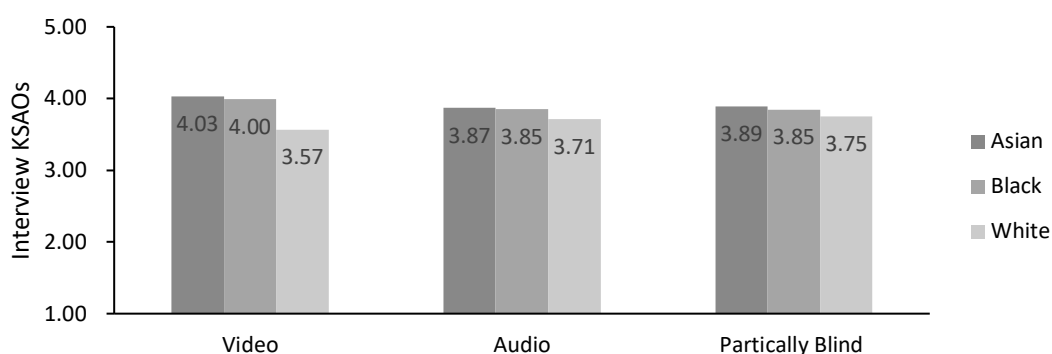


Figure 2. Interaction between interview mode and applicants' race on interview KSAOs.

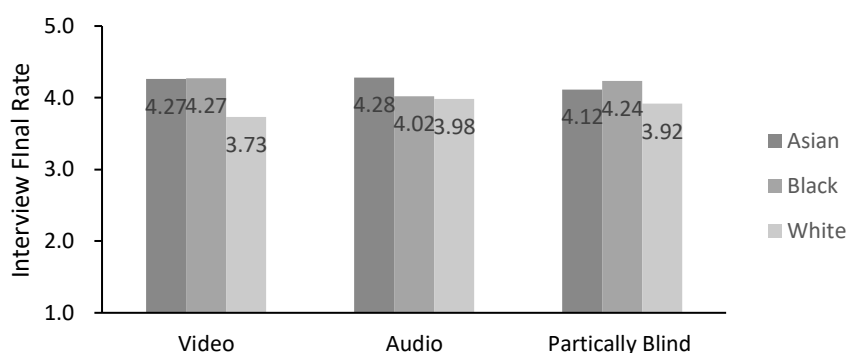


Figure 3. Interaction between interview mode and applicants' race on interview final rate.

To analyze Hypothesis 1a & 1b (in the AVIs, whether majority applicants get higher interview performance scores than minority applicants (H1a) and whether there is no difference between the interview performance scores of Black and Asian applicants (H1b)), I conducted one-way ANCOVAs using three applicants' performance scores rated by participants based on the video interview mode by controlling the color-blind racial attitude. After controlling for color-blind racial attitude, ANCOVAs results showed a significant effect of applicants' race on interview questions ratings, $F(2,106) = 4.503, p = .013, \eta_p^2 = .078$, interview KSAOs, $F(2,106) = 4.502, p = .013, \eta_p^2 = .078$, and interview final score $F(2,106) = 3.823, p = .025, \eta_p^2 = .067$. Tukey's post-hoc tests revealed that, for interview questions, the

score differed from White applicant ($M = 3.44$, $SD = .12$), to Black applicant ($M = 3.80$, $SD = .12$), to Asian ($M = 3.91$, $SD = .11$) applicant. However, only the mean difference between White and Asian applicants was significant ($-.470$, $95\%CI[-.866, -.074]$, $p = .014$), but no other group differences were statistically significant. Similarly, for interview KSAOs, the score differed from White applicant ($M = 3.57$, $SD = .13$), to Black applicant ($M = 3.99$, $SD = .12$), and to Asian applicant ($M = 4.04$, $SD = .12$). The mean difference from the White to Asian applicants was significant ($.462$, $95\%CI[-.870, -.054]$, $p = .021$) with no other significant group differences. Lastly, for the interview final score, the score differed from White applicant ($M = 3.74$, $SD = .16$) to Black ($M = 4.27$, $SD = .16$) and to Asian ($M = 4.27$, $SD = .15$) applicant. The mean difference from White to Asian applicants ($-.535$, $95\%CI[.001, 1.069]$, $p = .049$) were significant, but no other group differences were statistically significant.

Hypothesis 1a is rejected, while Hypothesis 1b is supported. This suggests that, in the video mode, the White applicant received lower evaluations than minority applicants, and the Asian applicant receives equal or higher scores than the Black applicant.

To analyze Hypothesis 2a (whether there is no significant difference between the majority and minority applicants in audio-only mode), one-way ANCOVAs was conducted to test if there are significant differences in interview performances scores across applicants from the three races in the audio-only mode by controlling the color-blind racial attitude. After controlling for color-blind racial attitude, the ANCOVAs results showed no significant effect of applicants' race on interview questions ratings, $F(2,97) = 1.052$, $p = .353$, $\eta_p^2 = .021$, interview KSAOs, $F(2,106) = .613$, $p = .544$, $\eta_p^2 = .012$, and interview final score $F(2,97) = 1.373$, $p = .258$, $\eta_p^2 = .028$. Hypothesis 2a is supported and suggest that there is no racial bias when examining applicants' performance in the audio interview mode only.

To analyze Hypothesis 2b (whether all applicants will get lower interview performance scores in the audio-only interview than in the video interview), independent t-tests was run to determine if there were differences of evaluations on interview questions, interview KSAOs, and interview final scores between video and audio interview modes. Results indicated there was no difference between video and audio modes on interview questions, $t(209) = .068, p = .946, d = .009$, interview KSAOs, $t(209) = .579, p = .563, d = .080$, and interview final scores, $t(209) = -.025, p = .980, d = .003$, rejecting Hypothesis 2b.

To analyze Hypothesis 3a (whether there is no significant difference between the general interview performance scores of Black and Asian applicants as compared to the White applicants in the partially blind mode), I conducted one-way ANCOVAs using three applicants' performance scores rated by participants in the partially blind interview mode, and by controlling the color-blind racial attitude. ANCOVAs results show no significant effect of applicants' race on interview questions, $F(2,104) = .946, p = .392, \eta_p^2 = .018$, interview KSAOs, $F(2,104) = .345, p = .709, \eta_p^2 = .007$, and interview final score $F(2,104) = 1.240, p = .294, \eta_p^2 = .023$, after controlling for color-blind racial attitude. The results support Hypothesis 3a and suggest there is no evidence of racial bias in the partially-blind mode.

To analyze Hypothesis 3b (whether the differences in performance scores between the first three questions and the last three questions were not statistically significant among all three races applicants in partially blind mode), I conducted three paired t-tests to test the difference of the means between first three audio and last three video questions in three races. Results showed that there was only a significant difference for the Black applicant $t(35) = -2.764, p = .009, d = .461$, but not for the Asian, $t(36) = -1.722, p = .094, d = .283$, and White applicants $t(34) = -0.626, p =$

.536, $d = .106$. Specifically, the Black applicants got significant higher evaluations in the last three video ($M = 3.97$, $SD = .77$) than the first three audio questions ($M = 3.72$, $SD = .72$), partially supporting the Hypothesis 3b.

I conducted three moderator regression analyses using the PROCESS macro to test Hypothesis 4 (In the three modes of AVIs (i.e., video, audio-only, the partially blind modes), the relationship between applicant's race and evaluations of their interview performance will be moderated by interviewers' color-blind racial attitude, such that minority applicants will receive especially lower evaluations when interviewers hold higher scores of racism level) with three dependent variables (i.e., interview questions, interview KSAOs, and interview final score). The audio-only and partially blind modes were compared to the video modes, and the White applicant was compared to the Black and Asian applicants. Table 4 shows all the results.

Table 4 presents that only the Partially blind mode by Black by COBRA interactions were significant for all three dependent variables: interview questions ($b = -.589$, $t = -2.198$, $p = .028$), interview KSAOs ($b = -.763$, $t = -2.785$, $p = .006$), and interview final score ($b = -.934$, $t = -2.650$, $p = .009$). Specifically, the Black applicant received lower evaluations in the partially blind mode, as compared to the video mode, when interviewers hold higher scores of racism level for all three dependent variables (see Figure 4-6), thus only partially supporting the Hypothesis 4.

Further, in the partially blind mode, the six interview questions consist of the first three audio questions and the last three video questions. Two moderator regression analyses using the PROCESS macro were used to test whether the moderating effect of COBRA for the Black applicants in the partially blind mode was significant for both types of questions.

Results show that Partially blind mode by Black by COBRA interactions were only significant in the last three video interview questions ($b = -.742, t = -2.478, p = .014$), but not in the first three audio interview questions ($b = -.436, t = -1.525, p = .128$).

In general, there were no main effect of interview modality and significant main effect of applicants' race. Regarding seven hypotheses (see Table 5), in the video mode, results rejected H1a (in the AVIs, whether majority applicants get higher interview performance scores than minority applicants) while supported H1b (whether there is no difference between the interview performance scores of Black and Asian applicants). In the audio mode, results supported H2a (whether there is no significant difference between the majority and minority applicants in audio-only mode) while rejected H2b (whether all applicants will get lower interview performance scores in the audio-only interview than in the video interview). In the partially blind mode, results supported H3a (whether there is no significant difference between the general interview performance scores of Black and Asian applicants as compared to the White applicants in the partially blind mode) and partially supported H3b (whether the differences in performance scores between the first three questions and the last three questions were not statistically significant among all three races applicants in partially blind mode). Lastly, the results partially supported H4 (In the three modes of AVIs (i.e., video, audio-only, the partially blind modes), the relationship between applicant's race and evaluations of their interview performance will be moderated by interviewers' color-blind racial attitude, such that minority applicants will receive especially lower evaluations when interviewers hold higher scores of racism level).

Table 4.

Regressions of tests of moderation for extent of color-blind racial attitude hypotheses (N=319)

	Interview Questions	Interview KSAOs	Interview Final Score
Constant	3.621** (.487)	4.057** (.498)	4.264 (.641)
Audio-only mode	.610 (.665)	.177 (.680)	.210 (.875)
Partially blind mode	-.084 (.632)	-.446 (.646)	-1.003 (.832)
Black	-.803 (.668)	-1.054 (.683)	-1.105 (.879)
Asian	-.097 (.655)	-.858 (.670)	-.821 (.862)
Audio-only mode* Black	.104 (.935)	.383 (.956)	.531 (1.230)
Audio-only mode* Asian	.141 (.989)	.767 (1.011)	.458 (1.301)
Partially blind mode * Black	-1.813 (.924)	2.227** (.944)	2.908* (1.215)
Partially blind mode * Asian	-.458 (.933)	.555 (.954)	1.135 (1.227)
COBRA	-.057 (.142)	-.146 (.145)	-.160 (.187)
Audio-only mode* COBRA	-.134 (.193)	-.011 (.198)	.013 (.254)
Partially blind mode * COBRA	.089 (.184)	.188 (.189)	.357 (.242)
Black * COBRA	.343 (.191)	.435* (.195)	.484 (.252)
Asian * COBRA	.170 (.190)	.394* (.194)	.405 (.250)
Audio-only mode* Black * COBRA	-.094 (.272)	-.190 (.278)	-.302 (.358)
Audio-only mode* Asian* COBRA	-.116 (.287)	-.316 (.293)	-.206 (.377)
Partially blind mode * Black* COBRA	-.589* (.268)	-.763** (.274)	-.934** (.353)
Partially blind mode * Asian* COBRA	.063 (.275)	-.255 (.281)	-.435 (.362)
R^2	.090*	.089*	.078

Note. Values are unstandardized b-values with standard errors in parentheses. Interview questions is the mean number of six evaluations after each interview question. Interview KSAOs is the mean of six code abilities and KSAOs which are corresponding to six interview questions. Interview final rate is the overall impression of the job applicant. * $p < .05$, ** $p < .01$.

REDUCE RACIAL BIAS ON INTERVIEW

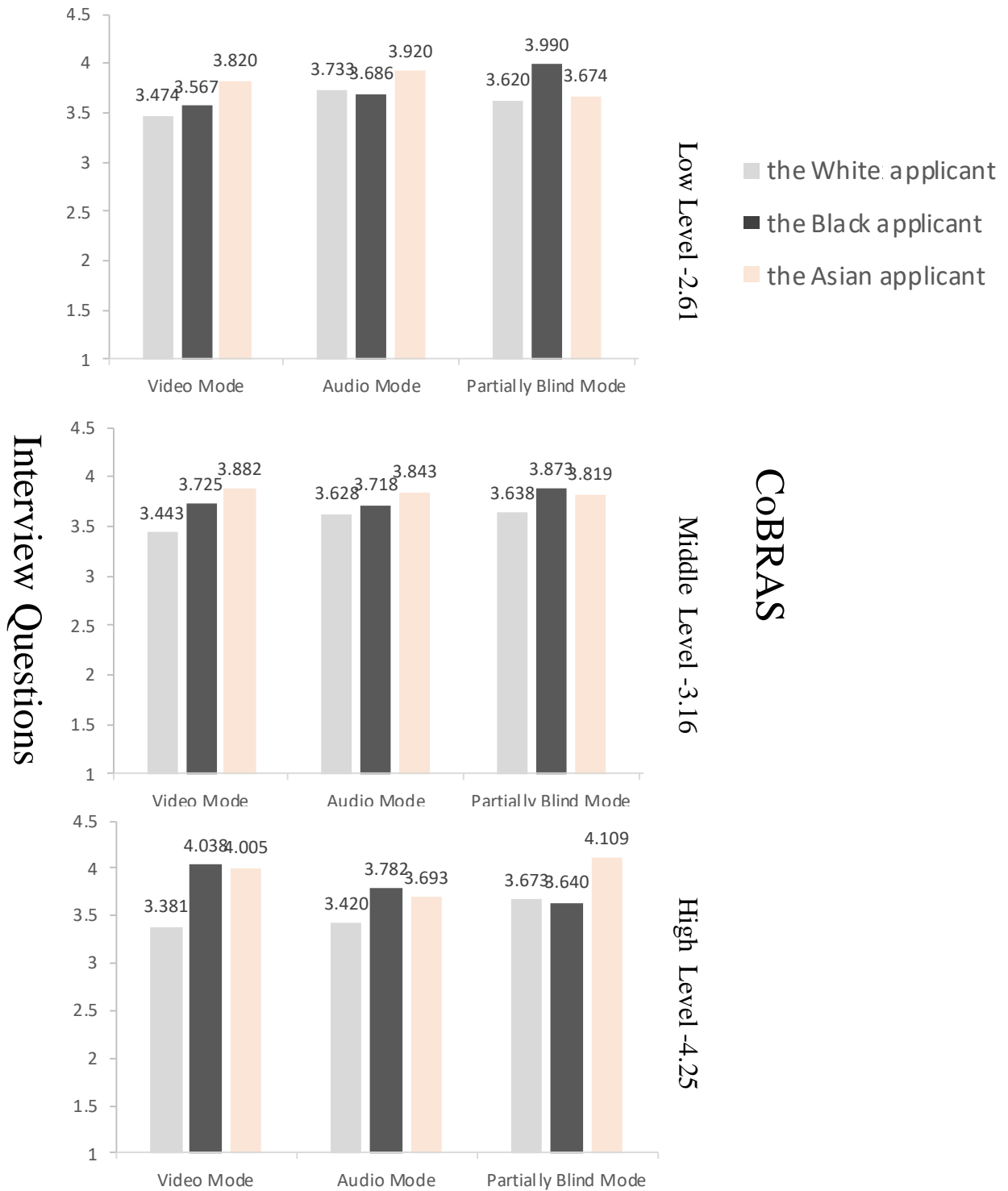


Figure 4. The moderated effect of CoBRAS on the relationship between interview mode and applicants' race on interview questions.

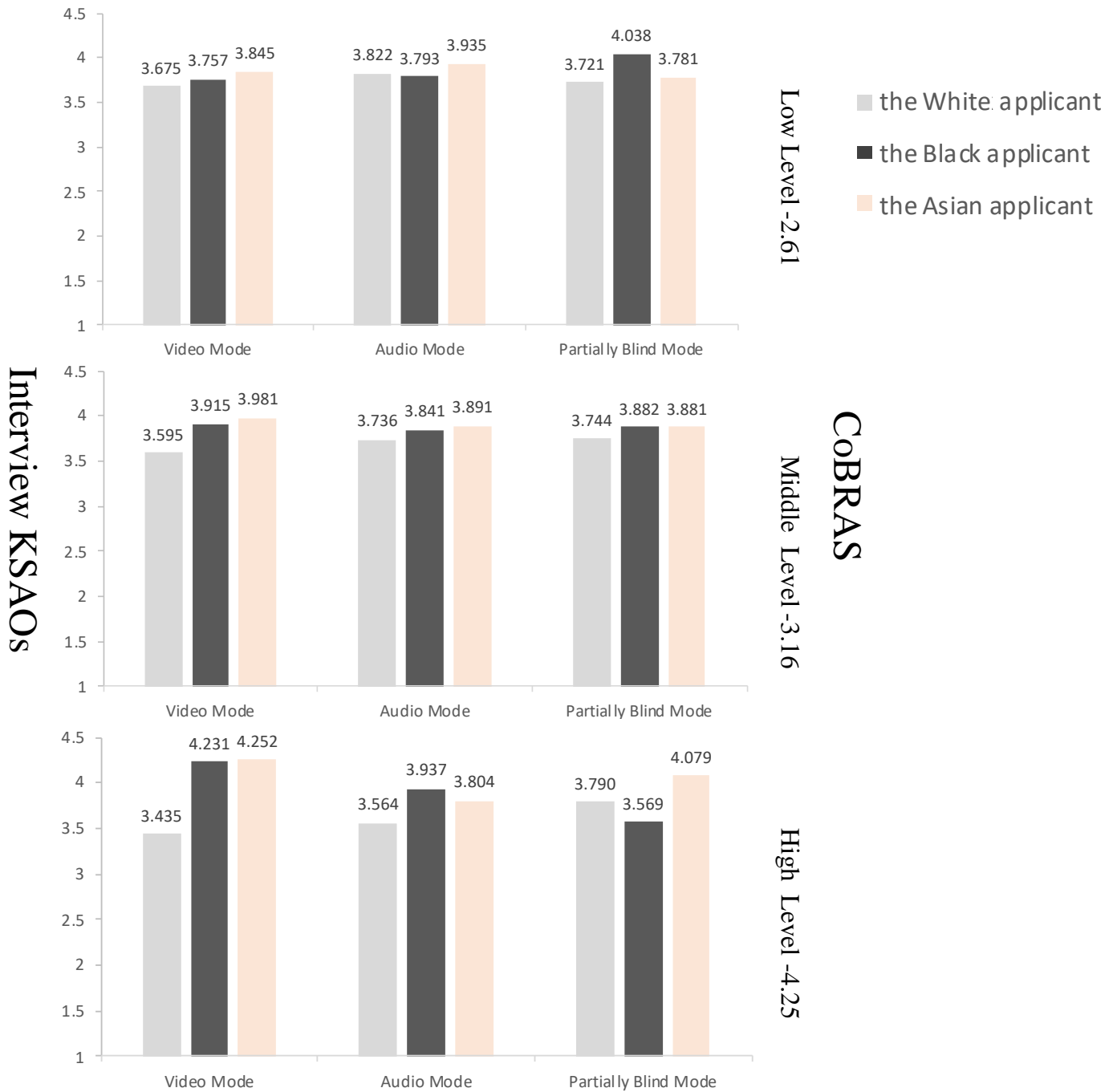


Figure 5. The moderated effect of CoBRAS on the relationship between interview mode and applicants' race on interview KSAOs.

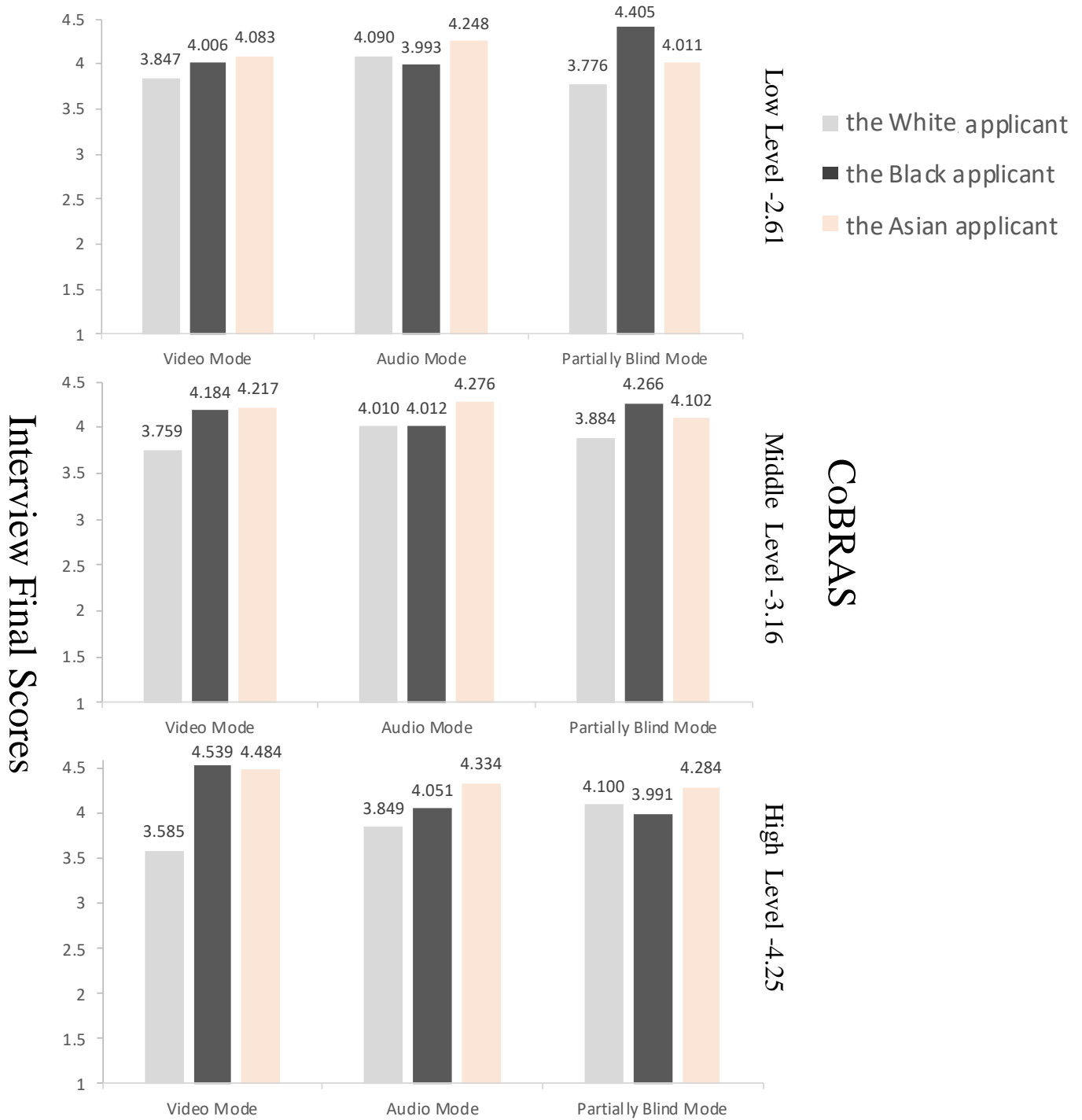


Figure 6. The moderated effect of CoBRAS on the relationship between interview mode and applicants' race on interview final score.

REDUCE RACIAL BIAS ON INTERVIEW

Table 5.

The summary of seven hypotheses

Hypotheses	Statements	Results	Details
H1a:	In the AVIs with video mode, majority applicants will get higher interview performance scores than minority applicants.	Reject	The Asian applicant received higher scores than the White applicant in all three evaluations.
H1b:	In the AVIs with video mode, there is no difference between the interview performance scores of Black and Asian applicants.	Support	The Asian and the Black applicants received similar scores of all three evaluations.
H2a:	In the audio-only AVIs, there is no difference between the interview performance scores of Black and Asian applicants as compared to White applicants.	Support	Three applicants received similar evaluations of all three evaluations.
H2b:	In the audio-only AVIs, applicants (from all races) will get lower interview performance scores than in the video AVIs.	Reject	Three applicants received similar evaluations between audio and video modes.
H3a:	In the partially blind mode, there is no significant difference between the interview performance scores of Black and Asian applicants as compared to the White applicants.	Support	Three applicants received similar evaluations of all three evaluations.
H3b:	In the partially blind mode, there is no difference between the performance scores the first three questions and the last three questions for applicants from all three races.	Partially support	Only the Black applicant received lower evaluation scores in first three audio questions than in last three video questions.
H4:	In the three modes of AVIs (i.e., the video, audio-only, and partially blind modes), the relationship between applicant's race and evaluations of their interview performance will be moderated by interviewers' racism level, such that minority applicants will receive especially lower evaluations when interviewers have higher racism scores.	Partially support	The Black applicant received lower evaluations in the partially blind mode, as compared to the video mode, when interviewers hold higher scores of racism level for all three dependent variables.

REDUCE RACIAL BIAS ON INTERVIEW

Additional Analyses

As mentioned above, six interview questions were created based on six critical KSAOs, relying on the initial job analysis and job descriptions. Further, in the survey, both interview questions and interview KSAOs were included, and the six interview questions matched the six interview KSAOs respectively. Consequently, those two series of questions assessed the same six skills or abilities, which were supposed to be at a similar level with no difference (since they should be based on the same interview performance). If there were differences between the interview questions and the interview KSAO ratings, it would indicate that the timing (i.e., after each question vs. in the end of the interview) impacts final evaluations, possibly leading to unfair results.

I examined whether there was difference between interview questions and interview KSAOs by conducting paired *t*-tests. In general, job applicants received significantly lower scores in interview questions ($M = 3.73, SD = .69$) than interview KSAOs ($M = 3.836, SD = .702$), $t(318) = -5.099, p < .001, d = .285$. Table 5 presents all specific results. Only in video mode, Asian ($t(38) = -2.214, p < .05, d = .355$) and Black ($t(33) = -3.837, p < .001, d = .658$) job applicants received significant lower scores for the interview questions than for the post-interview KSAOs. The White applicant received significant higher scores of interview KSAOs than interview questions in the audio ($t(33) = -2.138, p < .05, d = .372$) and partially blind ($t(35) = -2.138, p < .05, d = .403$) modes. The above results suggest that in general, interviewers provided higher scores for the interview KSAOs than the interview questions. However, minority applicants received higher evaluation at the end-of-interview only in the video mode, while the White applicant did in the audio and partially modes.

Table 6.

Paired t- tests of interview questions and interview KSAOs

Interview Mode	Applicants' Race	Interview Question		Interview KSAOs		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Video Mode	Asian	3.906	.692	4.034	.707	-2.214	.033	.355
	Black	3.809	.718	4.000	.721	-3.837	.001	.658
	White	3.432	.734	3.568	.784	-1.739	.091	.286
Audio Mode	Asian	3.813	.637	3.873	.647	-.966	.341	.168
	Black	3.721	.494	3.846	.555	-1.616	.115	.273
	White	3.596	.721	3.709	.725	-2.138	.040	.372
Partially Blind Mode	Asian	3.829	.689	3.887	.736	-1.045	.303	.172
	Black	3.847	.694	3.847	.721	.000	1.000	
	White	3.643	.694	3.751	.649	-2.383	.023	.403

Note. The range of the sample size is from 33 to 38.

Due to the correlations between education and discrimination levels, one-way ANOVAs were conducted to test if there are significant differences of racial discrimination levels across different education level. As the Color-Blind Racial Attitude Scale had three factors with different definitions, I tested all three factors respectively. The ANOVAs revealed that there was a significant effect of education on CoBRAS, Welch's $F(2, 154.969) = 3.607, p = .029$. For three factors, education had a significant effect on Racial privilege, Welch's $F(2, 162.041) = 3.090, p = .048$, and Blatant racial issues Welch's $F(2, 164.036) = 7.599, p = .001$, while there was no effect of education for Institutional discrimination Welch's $F(2, 154.638) = .705, p = .496$.

Games-Howell post hoc analysis revealed that, in general, the CoBRAS score was lower for those with the Master or Doctoral degree ($M = 3.19, SD = .66$) compared to the Associate degree or less ($M = 3.37, SD = .96$), and Bachelor's degree ($M = 3.45, SD = .89$). However, only the mean difference from Master or Doctoral degree to the bachelor's degree was significant (.261, 95%CI[-.502, -.020], $p = .030$), but no other group differences were statistically significant. For racial privilege factor, score was lower for those with the Master or Doctoral degree ($M = 2.95,$

$SD = .91$), compared to the Associate degree or less ($M = 3.08, SD = .16$), and bachelor's degree ($M = 3.26, SD = 1.03$). Only the mean difference from Master or Doctoral degree to the bachelor's degree was significant ($.31, 95\%CI[-.602,-.016], p = .036$), but no other group differences were statistically significant. For the Blatant racial issues factor, the score was lower for those with the Master's or Doctoral degree ($M = 3.61, SD = .79$), compared to the bachelor's degree ($M = 3.96, SD = .94$) and to the Associate degree or less ($M = 4.02, SD = .95$). Further, the mean difference from Master or Doctoral degree to the bachelor's degree ($.358, 95\%CI[-.620,-.095], p = .004$) and from Master or Doctoral degree to Associate degree or less were significant ($.410, 95\%CI[-.726,-.094], p = .007$), but no other group differences were statistically significant. All results indicate interviewers who hold the Master's or Doctoral degree show less racial discrimination, while interviewers who gain the bachelor's degree present the highest racial bias with no difference with interviewers who have the Associate degree or less.

Interview experience might be a factor that impact interviewers' evaluation. Thus, a 3 x 3 factorial analyses of covariance (two-way ANCOVA) was conducted. Interview Experience (in years), Traditional Interview Experience, and AVIs Interview Experience were included as a covariate, respectively. The two-way ANCOVAs revealed that all results were consistent with initial two-way ANCOVAs (no effect of interview modality and a main effect of applicant races), except that the effect of applicant race on interview KSAOs disappeared when controlling for AVIs Interview Experience $F(2,309) = 2.564, p = .079, \eta_p^2 = .017$. These results indicate that only AVIs interview experience impacts interviewers' evaluations, and just for interview KSAOs that are assessed after completing the whole interview.

Discussion

The purpose of this thesis was to examine the effect of applicant race and interview modality on interviewers' evaluations in AVIs. In detail, it examined the differences of interviewers' evaluations for three different races of job applicants (i.e., White, Black, Asian) across three interview modes (i.e., video, audio-only, partially blind modes). Overall, results suggested no effect of interview modality, and no differences between the three job applicants for all evaluations in the audio-only and partially blind modes. Moreover, the interviewers' racial bias moderated interview evaluations of the Black applicant: interviewers who hold a higher level of racial bias rated the Black applicant lower in the partially blind mode than in the video mode.

Firstly, there were no differences in the three evaluation scores between the three job applicants when comparing three interview modes, suggesting no effect of interview modality. However, in general the two minority applicants received equal or higher evaluations than the White applicant, suggesting a effect of applicant race. Those findings indicate that there is no evidence of racial bias in AVIs across the board. Two design elements (i.e., the high-structured interview and the high-complexity job) of AVIs in this thesis might contribute to the similar scores of three applicants across three modes. The structured interview is a more valid and reliable approach compared with the unstructured interview. Indeed, the validity and reliability increase by increasing the level of interview structure (Campion et al., 1994; Conway & Peneno, 1999; Kausel et al., 2016; McDaniel et al., 1994; Pursell et al., 1980; Schmidt & Hunter, 1998; Schmidt & Zimmerman, 2004; Wiesner & Cronshaw, 1988). As I discussed above, the interview procedure of AVIs strictly followed the key design elements of structured interviews, except for using the interview committee and providing anchored rating scales for interviewers, minimizing the differences of interviewer evaluations to some extent. These findings align with the findings

of Huffcutt and Roth (1998), which found the difference in interview evaluations between White and Black applicants decreased by the increasing the level of interview structure.

Further, the level of job complexity has an impact on interviewers' evaluations as well. With the increase of job complexity, interviewers need to collect more job-related information to assess applicants' quality. With more job-related information, the effect of demographic information that is the main source of interviewers' racial bias is more limited, leading to relatively fair decisions. The position—Project Manager—that applicants applied for in this thesis is not a low-complexity job. In detail, its core requirements are to analyze and coordinate the schedule, timeline, procurement, staffing, and budget of a product or service on a per-project basis. Moreover, six interview questions and KSOAs were used to examine applicants' higher-level abilities and skills (i.e., teamwork, minimizing risks, conflict management, persuasion, planning and organization, and problem-solving). Thus, in this thesis, participants as interviewers had to focus more on job-related information and may have paid less attention to demographic information (e.g., the applicant races) due to the high complexity of the position, effectively limiting the effect of applicant races. As a result, it is reasonable to find that the White applicants received equal or lower evaluations than two minorities in this thesis. These findings support existing research. Huffcutt and Roth (1998) highlighted that White applicants received slightly lower evaluations than the minority applicants in high-complexity jobs (e.g., manager), while White applicants got higher evaluations both in low- (e.g., truck driver) and medium- (e.g., skilled crafts) complexity jobs.

Secondly, although I found a main effect of applicant race, it differed in the three modes. In the audio-only mode, there was no differences in the three evaluation scores among the three job applicants, which is consistent with the initial expectation as the three applicants followed the

same transcript in their interviews, suggesting no effect of applicant race. In detail, based on audio answers, interviewers assessed the three applicants at a similar level, which accurately reflects their interview performances because they provided the same answers. Those results match those empirical findings in earlier studies. Specifically, the lack of obvious visual cues leads to relatively fair evaluations by forcing interviewers to pay more attention to the content instead of assessing applicants based on impressions that consist of demographic characteristics (Cameron & Trope, 2004; Epley & Gilovich, 2004). The findings are valuable because they demonstrate that the effect of the lack of obvious visual cues is not limited to traditional audio-only interviews (e.g., telephone interviews) but also in asynchronous audio-only interviews.

Moreover, it was found that applicants got similar evaluations in the video and audio-only modes. It indicates that in the audio mode of AVIs, interviewers do not underestimate applicants' interview performance. Those findings are encouraging as they are inconsistent with previous studies conducted by Silvester et al. (2000) and Silvester and Anderson (2003) which found that applicants received lower evaluations in telephone interviews than in-person interviews. This improvement could be attributed to the difference in the nature between telephone interviews and AVIs. As mentioned above, the two main reasons for the lower evaluations in telephone interviews are the loss of nonverbal information (Borkenau & Bielefeld, 1995; Larsen & Shackelford, 1996) and (Walter, 1979). Similarly, the audio-only mode in this thesis didn't provide nonverbal information. However, it provided the question in the text version for both applicants and interviewers. Both applicants and interviewers have more time to read and understand the content of questions, reducing misunderstanding. Moreover, AVIs provide the function for the interviewers to review the audio recordings repeatedly when they miss or confuse any parts of the answers. Additionally, interviewers and applicants have no direct

communication with each other as AVIs is a one-direction interview. With fewer communication opportunities, the possibility of misunderstanding decreases as well. Consequently, applicants' evaluations in the audio-only mode were similar to those in the video mode.

Thirdly, although I found an effect of applicant race in the video mode, the differences between the three races were opposite to my hypothesis. Specifically, the White job applicant didn't receive higher evaluations than minority applicants. Indeed, the White applicants received significantly lower scores than the Asian applicant in all three evaluations. Meanwhile, there was no difference between the White and the Black applicants on all three evaluations. Additionally, when comparing the two minorities groups, the Asian applicant received equal or (slightly) higher scores than the Black applicant. Those findings are inconsistent with past studies: White interviewers tend to evaluate White applicants higher than minorities (Agerström & Rooth, 2011; Dipboye & Colella, 2013; Dovidio et al., 1998; Kaiser & Pratt-Hyatt, 2009; Rakić et al., 2011), which must be interpreted cautiously due to other results in this thesis. There are several potential reasons. First of all, the inconsistent results in this thesis might be caused by the three individual characteristics of the applicants. It was found that the evaluations of the two minority applicants were slightly higher in the video mode than in the audio mode (ranging from .087 to .265). In comparison, the evaluations of the White applicant were slightly lower in the video mode than in the audio mode (ranging from .142 to .255), although the three applicants' evaluations were not different in the audio-only mode. It suggests that despite the quality and content of the three applicants' interview responses being the same, visual cues present in the video mode positively impacted the two minority applicants but negatively impacted the White applicant. The three job applicants' individual factors (e.g., appearance, acting skills, non-verbal behaviours, pitch, and speaking style) might have impacted interviewers' evaluations. In this

thesis, in general, the two minorities applicants might have been seen as more attractive for our participants than the White applicant. To control the differences between three actors from three races, a three-step process was used in this thesis. In the first step, two men for each race were recruited, then pilot tested short video recordings for each of them on various aspects (e.g., accent, pace, and perceived age) with a group of Subject Matter Experts (SMEs) that consisted of I/O graduate students at Saint Mary's University. Then, the second pilot survey was conducted via Mechanical Turk with 50 participants to test the perceptions of each actor about critical aspects of appearance (e.g., perceived attractiveness, likeability and health) based on their headshots. Lastly, applicants recorded their responses to a six-questions AVI for the job based on the same answers with the thesis author via Zoom meetings. All recorded AVIs were rated by the thesis author and the thesis advisor. Although those steps in this thesis were used to control differences between three applicants, it is impossible to eliminate all differences. Meanwhile, the perceptions of those differences might differ across various samples. Thus, the results of this thesis might be caused by individual characteristics of the three applicants instead of race.

Another potential reason is that the higher evaluations of two minorities applicants in the video mode might be caused by social desirability. There are various definitions of social desirability (An, 2015). For racial bias in interviews, social desirability refers to interviewers trying to prove that they have no racial bias by rating minorities applicants higher and White applicants lower. In this thesis, each participant only rated one job applicant in one mode; however, they still had opportunities to detect the applicant's race, leading to social desirability. Especially in the video mode, if interviewers were assigned the minority applicants, they might have rated minorities higher to prove that they were not racists. In the partially blind mode, it was found that all three applicants got higher scores in the last three video questions than in the

first three audio questions, however, only the Black applicant had significantly higher evaluations in the video questions. It suggests that, with visual cues, interviewers increased their evaluations only when realizing that the applicant they rated in the audio questions was the Black. It indicates those higher evaluations of the Black applicant might have been caused by participants detecting the racial issues being examined in this study (instead of the quality of responses in the video questions). Since racial issues are a sensitive topic, they might have chosen to provide higher scores to the Black applicant due to social desirability. Compared to other minorities, people in the US are more sensitive to racial bias against African Americans. Indeed, the main body of past studies about racial bias in the interview focuses on African Americans vs White. Given that, in the video mode, it could be that interviewers realized the racial issues through visual cues when reviewing the videos, and they might have tried to prove that they had no racial bias by rating minority applicants higher.

Finally, there was no difference in the evaluations of all three applicants in the partially blind mode consisting of the first three audio-only and the last three video questions. Those results indicate that the partially blind mode effectively controls the effect of applicant race. However, in the partially blind mode, it was found that the interviewers' racial bias moderated the effect of race on all three interview evaluations, for the Black applicant only. Specifically, interviewers with a higher level of racial bias/prejudice rated the Black applicant lower (than in the video mode) for all three interview evaluations (i.e., interview questions, interview KSAOs, and interview final scores). This findings support the negative associations between individuals' racism levels and the favourable judgments of the applicants (Purkiss et al., 2006). Thus, the above findings demonstrate that interviewers' racial bias impacts their evaluations for the Black applicant in the partially blind (vs. video) mode. Moreover, it is interesting to note that, in the

partially blind mode, for evaluations of interview questions that were assessed after each question, I only found the moderation effects in the last three video responses but not in the first three audio responses for the Black applicant, supporting that the visual cues are the main sources of interviewers' racial bias (Derous et al., 2016; Huffcutt & Roth, 1998; Levashina et al., 2014; McDaniel et al., 1994) – at least against Black applicants. In contrast, I found no moderation effect of interviewers' racial bias for the Asian applicant across the three modes. Those different results between the Black and Asian applicants suggest that the majority raters might treat them differently. One potential reason is the general image of Asian Americans as a "model minority" compared with other minorities (Kolbrin et al., 2008; Mattern et al., 2008; Roth et al., 2017). Meanwhile, looking at the manipulation checks, several participants who reviewed the Asian applicant reported him as White in the video and partially blind mode, which means the appearance of the Asian applicant might have been perceived as similar to the White (or perhaps not very stereotypically Asian). Therefore, the model minority concept and the appearance of the Asian applicant in this thesis might protect this Asian applicant from more racist interviewers, but there is no similar protection for the Black applicant.

The additional analysis comparing ratings of interview questions after each interview question and ratings of KSAOs at the end of the interview revealed that applicants got higher evaluations for interview KSAOs, indicating that the timing of making evaluations might impact the final results. In detail, assessing the same abilities and skills, interviewers rate applicants (slightly) higher after reviewing all questions than immediately after reviewing each question. Moreover, minority and majority applicants seem to get these benefits in different modes. Specifically, minority applicants only got significant higher post-interview interview KSAO ratings (vs. question ratings) in the video mode, while the White applicant did in the audio as

well as partially blind modes. It seemingly points out a critical but ignored issue that it is unreasonable to compare different interviewers' evaluations that assess different applicants at different times during the interview, no matter in which mode. For example, two interviewers separately assess two applicants—A and B—who apply for the same position. One interviewer rates applicant A after each question, while the other assesses applicant B after completing all questions. Based on what I found in this thesis, if two applicants have similar interview performance, applicant B might get a higher score than applicant A. As a result, the difference between A and B is not caused by their interview performance but by the evaluation time, which is an unfair result. Since this study is the first one to compare interviewers' evaluations that assess at the different time periods during the interview, more research is needed to figure out why those two evaluations are different, how to limit the difference between two evaluations, and even which one is more accurate.

The additional analysis of the association between the educational level and individual racial bias revealed that interviewers show different levels of individual racial bias in the CoBRAS and its two factors—racial privilege (the blindness of the existence of White people' privilege) and blatant racial issues (unawareness to general, pervasive racial discrimination). Specifically, the interviewers who hold a bachelor's degree showed the highest racial bias in all three elements mentioned above, which was higher than interviewers who gained a master's or doctoral degree. In addition, interviewers who hold an associate degree or less showed higher scores than interviewers who gained a master's or doctoral degree only in blatant racial issues. Meanwhile, there was no difference between interviewers who gain a bachelor's degree and interviewers who hold an associate degree or less in all three factors. Those findings indicate that the associations between education and racial bias might not be linear. However, past research found that less-

educated individuals are more likely to present negative attitudes or bias toward minorities (Hello, Scheepers, & Slegers, 2006; Scheepers et al., 2002; Scheve & Slaughter, 2001, Tolsma, Lubbers, and Coenders, 2008). Hello et al. (2006) demonstrated the main reason is that less-educated individuals perceive more threats from direct competition with minorities. However, in this thesis, it seems that undergraduate-educated individuals present the highest racial bias. This might signal that the most direct competition between the majority and minorities might shift to undergraduate-educated individuals. This aligns with the increasing number of minorities who receive undergraduate education, especially Asian Americans. Moreover, another potential reason for this finding is fewer real less-educated participants in the sample of this thesis. Since this thesis combined participants who hold an Associate degree or less as group 1, the lower individuals' racial bias might cause by fewer participants with an Associate degree or less. If including more participants who just completed high school or less, the individuals' racial bias level of group 1 might be the highest. The above findings suggest that the relationship between education and individuals' racial bias level is more complicated, which is needed to discern deeper which factors influence those differences in the future.

Practical Implications

This study may yield several practical implications. Firstly, the finding that both audio-only and partially blind modes effectively controlled the effect of applicant race suggests that raters could more accurately assess the contents of interviewees' responses with these formats. Moreover, the audio-only mode AVIs could overperform traditional audio interviews (e.g., telephone interviews) as they don't underestimate applicants' interview performance. The results of this study also revealed that visual cues are the main source of interviewers' racial bias. Thus, in AVIs, interviewers in the audio-only or partially blind modes are more likely to assess

applicants' interview content accurately because there are more factors that might impact evaluations in the video mode than in the audio-only or partially blind modes. Further, even when applicants complete their AVIs in the video mode, companies or organizations could still get more accurate evaluations of job applicants by requiring interviewers to assess answers in audio-only or partially blind modes (e.g., by transforing video files into audio files before review).

A second practical implication of this study arises from its finding that the general level of White male interviewers' racial discrimination is moderate (as the average of CoBARS was 3.32, and the average of its three factors were 3.09, 3.12, and 3.82 for the racial privilege, institutional discrimination, and blatant racial issues, respectively). It suggests that individual' racial discriminations levels of the White male interviewers in this thesis are around middle and high levels. Thus, organizations and companies might pay more attention to White male interviewers' racial discrimination and try to control their negative effects. Moreover, besides applicants' individual characteristics, according to social desirability, interviewers who want to prove they have no bias might rate minorities higher when realizing the racial issues during the interview. Such reactions of interviewers might lead to another direction: ratings of minority applicants are overestimated. These findings are critical for future studies because emphasizing racial fairness or racial issues may benefit minorities, creating a new type of discrimination in the interviews. Thus, when creating fair interviews, future studies need to consider how to control racial bias as well as social desirability simultaneously.

A third practical implication of this study is that the evaluation time may affect the interviewers' evaluations. The study results revealed that interviewers rate applicants higher after reviewing all questions than after reviewing each question. In the workplace, because of realistic

factors (e.g., time conflicts), in companies or organizations, the final decision might be determined by comparing different applicants evaluated by different interviewers separately, especially about in-person interviews. If the interviews are structured, there is no effect of evaluation times as all interviewers follow the same procedure. However, in the United States, the most common interview form is the unstructured interview (Dipboye, 1997; Wiersma, 2016). For unstructured interviews, based on the results of this thesis, it is seemingly unreasonable to compare interviewers' evaluations directly. Since the interviewer panel will choose the applicant who receives the highest scores, even if applicants are of similar quality, if interviewers in the panel evaluate applicants at different times, evaluation time impacts the evaluation scores. Further, the applicant who has been chosen in the end might benefit from the time period of evaluation instead of the real interview performance, leading to unfair results. Given that, companies and organizations must take into consideration the evaluation time when comparing different interviewers' evaluations for different applicants who apply for the same position in the unstructured interviews.

Finally, this study has practical value because it has demonstrated that interviewers with a master's or doctoral degree show less racial bias, which is significantly lower than interviewers with a bachelor's degree present. However, it is vital to note that this finding is slightly different from past work which has found that less-educated individuals who finish high school and less are more likely to present negative attitudes or bias toward minorities as they perceive more threats from direct competition with minorities (Hello, Scheepers, & Slegers, 2006; Scheepers et al., 2002; Scheve & Slaughter, 2001, Tolsma, Lubbers, and Coenders, 2008). Given that, it is reasonable to assume that more direct competition transfers from the less-educated individuals to undergraduate-educated individuals as more and more minorities have received undergraduate

educations in the past decades. Therefore, for companies and organizations, interviewers with a master's or doctoral degree are more likely to make a fair evaluation. Meanwhile, for interviewers who have a bachelor's degree, to achieve relatively fair final evaluations, companies and organizations might pay more attention to their final evaluation or set some approaches (e.g., audio-only or partially blind modes) to control the effect of their racial bias.

Limitations and Future Research Directions

This thesis had several limitations. Firstly, a limitation of this thesis was that our participants rated a mock interview rather than a real one, limiting the external validity. Although the majority of participants in three modes passing manipulated and attention checks indicated that they took those interview evaluations seriously enough, it still differed from the real interview that can decide the real offer. Moreover, all the information of the job and company was provided to participants in a written description of a hypothetical company and position, and not an actual job opportunity. Given that, participants might react differently in real interviews. Moreover, it could have been unethical and unfair to cooperate with a real organization to examine hiring employees using the three AVIs modalities. Thus, the reliance on mock interviews may be a limitation inherent to this study.

Another limitation related to the mock interview was that it used one actor to represent one race. This thesis followed several steps to ensure those three actors were similar across different indicators (e.g., attractiveness, accent, and interview performance) to control potential individual differences. However, the three actors might be perceived at different levels within their own race. For example, even if the three actors received similar scores, the two minorities actors might have been assessed as particularly attractive within their races (i.e., vs. other Asian or Black men) than the White applicant in his race (vs. other White men). Additionally, in this

thesis, the appearance of the Asian applicant might have been similar to a White individual. Indeed, in the manipulation check questions, several participants who were assigned the Asian applicants thought they assessed a White applicant. Thus, those participants might have treated the Asian applicant as a White applicant, rating him with higher evaluation scores. General, those differences in attractiveness might have impacted participants' final evaluations, leading to higher evaluations of minorities and lower scores of the White applicant. Future studies should consider more factors (e.g., acting skills, non-verbal behaviors, pitch, and speaking style) when selecting actors as job applicants, controlling the differences between actors maximumly.

Another limitation of this thesis was that having three actors who followed the same average-quality answers for six questions might have had limited external validity. To create more room for participants to give higher or lower evaluations, all answers were rated as average quality by Subject Matter Experts (SMEs). For participants, the average of six interview questions was 3.73 (out of 5). Those indicated that three actors' interview performances in this thesis were middle or high levels. In fact, in the workplace, different applicants might perform differently. Their various performance might interact with their races, impacting final evaluations. Future studies are encouraged to explore how applicant response quality interacts with race and/or AVI modality.

Another limitation of this thesis was that each participant only rated one job applicant for one job position, which may limit the external validity. In fact, as an interviewer, they might interview several applicants from different races for different positions with an interview panel. The job complexity, interview order, number of job applicants, other applicants' performance, and the structure of the interview panel might cause different final evaluations for a certain applicant. For example, past research showed that an interview panel that consisted of two Black

and one White interviewers rated White and Black applicants differently from an interview panel that consisted of one Black and two White interviewers (McFarland et al., 2004). Further, as compared to minorities, White applicants received higher evaluations in low- (e.g., truck driver) and medium- (e.g., skilled crafts) complexity jobs but slightly lower evaluations in high-complexity jobs (e.g., manager) (Huffcutt & Roth, 1998). Future research should examine whether the above factors have effects on interviewers' evaluations in AVIs and whether the findings of this thesis could be replicated in different situations.

Another limitation was that although the selected participants had experience hiring employees, this study had no specific working years and AVI experience requirements. As a result, some participants might only have a few years of experience, while others may have rich experience. It might lead to different reactions towards the same job applicants in AVIs. Indeed, I found that the effect of applicant race on interview ratings of KSAOs disappeared when controlling for AVIs interview experience, although the effect of applicant race on the ratings for each interview questions and final scores remained. Moreover, there were no differences in all results after controlling for interview experience (in years) and traditional interview experience. Meanwhile, the correlations between the AVIs interview experience and ratings interview questions/KSAOs, but not interview final scores, were significantly positive but small, which means that interviewers with more AVIs interview experience rated applicants higher in interview questions and KSAOs. The above findings suggest that AVIs interview experience only affected evaluations of KSAOs in AVIs that are assessed after completing the whole interview. Thus, future research needs to pay more attention to the effect of AVIs experience on a final evaluation in AVIs. Moreover, the AVIs experience might differently impact the different

types of evaluations. Future studies need to consider the effect of AVIs experience based on the types of the interviewers' evaluations in AVIs.

Another limitation of this thesis was that it relied on self-report racial bias. The Color-Blind Racial Attitude Scale worked well in this study to measure participants' racial bias based on three factors with high reliabilities. However, racists might still hide their real level of racial bias to some extent when they realize others want to measure their racial bias levels due to the sensitivity of racial bias. Further, those inaccurate levels of racial bias might impact other relationships in this study. Future research should be encouraged to use or create other or multiple approaches to assess participants' racial bias (e.g., implicit association tests), possibly leading to more accurate results.

Another limitation of this thesis was the well-educated sample. In this thesis, 43.9% of participants hold master's or doctoral degrees and 34.8% of participants have bachelor's degrees, while the remaining gained associate degrees or less. Participants who hold master's or doctoral degrees were the biggest part of this study, which is inconsistent with the distribution in the real workplace. Thus, it limits generalizability to some extent. Future research should explore the external validity of the findings in this thesis and if the results are replicable in the general population.

A final limitation of this study was that it only assessed the effect of interviewers' racial bias on evaluation with male interviewers and males job applicants to exclude other potential explanations or confounds. In fact, it is estimated that 76.8% of human resource managers in the USA are female (U.S. Bureau of Labor Statistics, 2020). Thus, there are many potential interactions between applicant and interviewer factors that could be explored. For example, there might be interactions between applicant gender and interviewer gender. Specifically, female

interviewers rating male applicants might differ from male interviewers assessing female applicants. Even interviewers and applicants are in the same gender, interactions between female interviewers and female applicants might be inconsistent with between male interviewers and male applicants. Moreover, different races of interviewers and applicants might impact or moderate these interactions as well. Future studies are needed to invest in those relationships deeply in AVIs, which might provide a more comprehensive understanding of whether AVIs are an effective way to control interviewers' racial bias in different situations.

Conclusion

Although the popularity of AVIs has been steadily increasing over time, especially after the pandemic, the research has been lagging behind a lot. This thesis took a first step to examine the effect of applicant race and interview modality on interviewers' evaluations in AVIs. In detail, it examined the differences of interviewers' evaluations for three different races of job applicants (i.e., White, Black, Asian) across three interview modes (i.e., video, audio-only, partially blind modes). I found no effect of interview modality in AVIs. When the minorities and majority applicants performed at a similar level, there was no effect of applicant race in the audio-only and partially blind modes as the visual cues are the main sources that cause racial bias. The interviewers' racial bias moderates interview evaluations of the Black applicant in the partially blind mode: interviewers who hold a higher level of racial bias rate the Black applicant lower. Additionally, although the Black and the Asian are minorities, they might be treated differently in the AVIs, which will require further investigation and clarification. Overall, this thesis adds a piece to the AVIs literature by creating fair interview evaluations and provides important implications for organizations and employers.

References

- Agerström, J., & Rooth, D. O. (2011). The role of automatic obesity stereotypes in real Hiring Discrimination. *Journal of Applied Psychology, 96*(4), 790–805. <https://doi.org/10.1037/a0021594>
- An, B. P. (2015). The role of social desirability bias and racial/ethnic composition on the relation between education and attitude toward immigration restrictionism. *Social Science Journal, 52*(4), 459–467. <https://doi.org/10.1016/j.soscij.2014.09.005>
- Arvey, R. D. (1979). Unfair discrimination in the employment interview: Legal and psychological aspects. *Psychological Bulletin, 86*(4), 736–765. <https://doi.org/10.1037/0033-2909.86.4.736>
- Atkin, A. L., Yoo, H. C., Jager, J., & Yeh, C. J. (2018). Internalization of the model minority myth, school racial composition, and psychological distress among Asian American adolescents. *Asian American Journal of Psychology, 9*(2), 108–116. <https://doi.org/10.1037/aap0000096>
- Azarpazhooh, A., Ryding, W. H., & Leake, J. L. (2008). Structured or unstructured personnel interviews? *Healthcare Management Forum, 21*(4), 33–43. [https://doi.org/10.1016/S0840-4704\(10\)60054-3](https://doi.org/10.1016/S0840-4704(10)60054-3)
- Barrick, M. R., Shaffer, J. A., & DeGrassi, S. W. (2009). What you see may not be what you get: Relationships among self-Presentation tactics and ratings of interview and job performance. *Journal of Applied Psychology, 94*(6), 1394–1411. <https://doi.org/10.1037/a0016532>
- Behrend, T., Toaddy, S., Thompson, L. F., & Sharek, D. J. (2012). The effects of avatar appearance on interviewer ratings in virtual employment interviews. *Computers in Human Behavior, 28*(6), 2128–2133. <https://doi.org/10.1016/j.chb.2012.06.017>
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review, 94*(4), 991–1013. <https://doi.org/10.1257/0002828042002561>
- Blackman, M. C. (2002). Personality judgment and the utility of the unstructured employment interview. *Basic and Applied Social Psychology, 24*(3), 241–250. https://doi.org/10.1207/S15324834BASP2403_6
- Blacksmith, N., Willford, J. C., & Behrend, T. S. (2016). Technology in the employment interview: A meta-analysis and future research agenda. *Personnel Assessment and Decisions, 2*(1), 8–14.
- Booth, A. L., Leigh, A., & Varganova, E. (2012). Does ethnic discrimination vary across minority groups? Evidence from a field experiment. *Oxford Bulletin of Economics and Statistics, 74*(4), 547–573. <https://doi.org/10.1111/j.1468-0084.2011.00664.x>
- Borkenau, P., & Bielefeld, U. (1995). Observable Attributes as Manifestations and Cues of Personality and Intelligence. *Journal of Personality, 63*, 1–25.
- Braddock, J. H., & McPartland, J. M. (1987). How minorities continue to be excluded from equal employment opportunities: research on labor market and institutional barriers. *Journal of Social Issues, 43*(1), 5–39. <https://doi.org/10.1111/j.1540-4560.1987.tb02329.x>
- Brenner, F. S. (2016). In T. Verhoeven (Ed.), *Bridging the scientist/practitioner gap: Influences on applicant reactions in novel technologies through the example of asynchronous video-interviews*. (pp. 71–89). Wiesbaden, Germany: Springer

- Brenner, F. S., Ortner, T. M., & Fay, D. (2016). Asynchronous Video Interviewing as a New Technology in Personnel Selection: The Applicant's Point of View. In *Frontiers in Psychology*, 7, 863. <https://www.frontiersin.org/article/10.3389/fpsyg.2016.00863>
- Buijsrogge, A., Duyck, W., & Derous, E. (2020). Initial impression formation during the job interview: anchors that drive biased decision-making against stigmatized applicants. *European Journal of Work and Organizational Psychology*, 00(00), 1–14. <https://doi.org/10.1080/1359432X.2020.1833980>
- Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships*, 14, 417–431.
- Campion, M. A., Campion, J. E., & Hudson, J. P. (1994). Structured interviewing: A note on incremental validity and alternative question types. *Journal of Applied Psychology*, 79(6), 998–1002. <https://doi.org/10.1037/0021-9010.79.6.998>
- Campion, M. A., Pursell, E. D., & Brown, B. K. (1988). Structured interviewing: Raising the psychometric properties of the employment interview. *Personnel Psychology*, 41(1), 25–42. <https://doi.org/10.1111/j.1744-6570.1988.tb00630.x>
- Cardy, R. L., & Dobbins, G. H. (1986). Affect and appraisal accuracy: Liking as an integral dimension in evaluating performance. *Journal of Applied Psychology*, 71, 672–678.
- Cascio, W. (1991). *Applied psychology in personnel management* (4th ed.). Prentice-Hall.
- Castilla, E. J., & Benard, S. (2010). The paradox of organizations. *Administrative Science Quarterly*, 55(2010), 543–576.
- Chamorro-Premuzic, T., Winsborough, D., Sherman, R. A., & Hogan, R. (2016). New talent signals: Shiny new objects or a brave new world? *Industrial and Organizational Psychology*, 9(3), 621–640. <https://doi.org/DOI: 10.1017/iop.2016.6>
- Chapman, G. B., & Johnson, E. J. (2002). Incorporating the irrelevant: Anchors in judgments of belief and value. In T. Gilovich, D. Griffin & D. Kahneman (Eds.), *The psychology of intuitive judgment: Heuristics and biases* (pp. 120–138). Cambridge, UK: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511808098.008>
- Chapple, A. (2013). The use of telephone interviewing for qualitative research. *Nurse Researcher*, 6(3), 85.
- Chauhan, R. S. (2019). Unstructured interviews: are they really all that bad? *Human Resource Development International*, 00(00), 1–14. <https://doi.org/10.1080/13678868.2019.1603019>
- Cheng, C., & Thatchenkery, T. J. (1997). Why is there a lack of workplace diversity research on Asian Americans? *Journal of Applied Behavioral Science*, 33, 270–276.
- Clark, M., & Fiske, S. (1892). *Affect and cognition: The seventeenth annual Carnegie symposium on cognition*. Erlbaum.
- Cohen, L. E., Broschak, J. P., & Haveman, H. A. (1998). And then there were more? The effect of organizational sex composition on the hiring and promotion of managers. *American Sociological Review*, 63(5), 711–727. <https://doi.org/10.2307/2657335>
- Colella, A., Hebl, M., & King, E. (2017). One hundred years of discrimination research in the journal of applied psychology: A sobering synopsis. *Journal of Applied Psychology*, 102(3), 500–513. <https://doi.org/10.1037/apl0000084>
- ConveyIQ. (2019). *Convey by the Numbers*. Retrieved from <https://www.conveyiq.com/solutions/applicant-communication-studio-software/digital-interviewing/>.

- Copus, D. (2005). A lawyer's view: Avoiding junk science. In F. J. Landy (Ed.), *Employment discrimination litigation: Behavioral, quantitative, and legal perspectives* (pp. 450–462). San Francisco: Jossey-Bass.
- Cotter, P. R., Cohen, J., & Coulter, P. B. (1982). Race-of-interviewer effects in telephone interviews. *The Public Opinion Quarterly*, *46*(2), 278–284.
<https://www.jstor.org/stable/2748851>
- Creswell, M. W., Bolton, G. L., Hodges, J. C., & Meppen, M. (1998). Combinatorial synthesis of dihydropyridone libraries and their derivatives. *Tetrahedron*, *54*(16), 3983–3998.
[https://doi.org/10.1016/S0040-4020\(98\)00130-6](https://doi.org/10.1016/S0040-4020(98)00130-6)
- Derous, E., Buijsrogge, A., Roulin, N., & Duyck, W. (2016). Why your stigma isn't hired: A dual-process framework of interview bias. *Human Resource Management Review*, *26*(2), 90–111. <https://doi.org/10.1016/j.hrmr.2015.09.006>
- Dipboye, L., & Colella, A. (2013). *Discrimination at Work: The Psychological and Organizational Bases*. Psychology Press.
- Dipboye, R. (1997). Structured selection interviews: Why do they work? Why are they underutilized. *International handbook of selection and assessment* (pp. 455–473). Wiley.
- DiTomaso, N., Post, C., & Parks-Yancy, R. (2007). Workforce diversity and inequality: Power, status, and numbers. *Annual Review of Sociology*, *33*, 473–501.
<https://doi.org/10.1146/annurev.soc.33.040406.131805>
- Dobbin, F., Schrage, D., & Kalev, A. (2015). Rage against the Iron Cage: The varied effects of bureaucratic personnel reforms on diversity. *American Sociological Review*, *80*(5), 1014–1044. <https://doi.org/10.1177/0003122415596416>
- Donohue, J., & Heckman, J. (1991). Continuous versus episodic change: The impact of civil rights policy on the economic status of blacks. *Journal of Economic Literature*, *29*(4), 1603–1643.
http://works.bepress.com/cgi/viewcontent.cgi?article=1037&context=john_donohue
- Dovidio, J. F., & Gaertner, S. L. (2004). Aversive racism. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 36, pp. 1–52). Elsevier Academic Press.
[https://doi.org/10.1016/S0065-2601\(04\)36001-6](https://doi.org/10.1016/S0065-2601(04)36001-6)
- Dovidio, J. F., Gaertner, S. L., & Validzic, A. (1998). Phospholipid composition of some amine storage granules. *Journal of Personality and Social Psychology*, *75*(1), 109–120.
[https://doi.org/10.1016/0014-5793\(81\)80190-1](https://doi.org/10.1016/0014-5793(81)80190-1)
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, *82*(1), 62–68.
<https://doi.org/10.1037/0022-3514.82.1.62>
- Dunnette, M. D., & Bass, B. M. (1963). Behavioral scientists and personnel management. *Industrial Relations: A Journal of Economy and Society*, *2*(3), 115–130.
<https://doi.org/10.1111/j.1468-232X.1963.tb00292.x>
- English, D., Lambert, S. F., Tynes, B. M., Bowleg, L., Zea, M. C., & Howard, L. C. (2020). Daily multidimensional racial discrimination among Black U.S. American adolescents. *Journal of Applied Developmental Psychology*, *66*, 101068.
<https://doi.org/10.1016/j.appdev.2019.101068>
- Eroglu, C., & Croxton, K. L. (2010). Biases in judgmental adjustments of statistical forecasts: The role of individual differences. *International Journal of Forecasting*, *26*(1), 116–133.
<https://doi.org/10.1016/j.ijforecast.2009.02.005>

- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69(6), 1013–1027. <https://doi.org/10.1037//0022-3514.69.6.1013>
- Federal Bureau of Investigation. (2018). *2017 hate crime statistics*. <https://ucr.fbi.gov/hate-crime/2017/topic->
- Fernandez, S., & Pougnet, S. (2018). Is there structure in the selection interview? Evidence from hotels in Switzerland. *Journal of Human Resources in Hospitality and Tourism*, 17(1), 80–97. <https://doi.org/10.1080/15332845.2017.1328262>
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 357–411). McGraw-Hill.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: influences of information and motivation on attention and interpretation. *Advances in Experimental Social Psychology*, 23, 1-74. [https://doi.org/https://doi.org/10.1016/S0065-2601\(08\)60317-2](https://doi.org/https://doi.org/10.1016/S0065-2601(08)60317-2)
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). McGraw-Hill Book Company.
- Gaddis, S. (2015). Discrimination in the credential society: An audit study of race and college selectivity in the labor market. *Social Forces*, 93(4), 1451–1459. <https://doi.org/10.1093/sf/sou111>
- Ghosh, I. (2020). *Visualizing the U.S. Population by Race*. VISUAL CAPITALIST.
- Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.
- Gottman, J. M., Coan, J., Carrere, S., Swanson, C., Gottman, J. M., Coan, J., Carrere, S., & Swanson, C. (1998). Predicting marital happiness and stability from newlywed interactions. *Journal of Marriage and Family*, 60(1), 5–22. <https://doi.org/10.1002/job>
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the implicit association test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, 97(1), 17–41. <https://doi.org/10.1037/a0015575>
- Hebl, M. R., Foster, J. B., Mannix, L. M., & Dovidio, J. F. (2002). Formal and interpersonal discrimination: A field study of bias toward homosexual applicants. *Personality and Social Psychology Bulletin*, 28(6), 815–825. <https://doi.org/10.1177/0146167202289010>
- Highhouse, S. (2008). Stubborn reliance on intuition and subjectivity in employee selection. *Industrial and Organizational Psychology*, 1(3), 333–342. <https://doi.org/10.1111/j.1754-9434.2008.00058.x>
- Hirschman C, Wong MG. (1986). The extraordinary educational attainment of Asian-Americans: a search for historical evidence and explanations. *Social Forces*, 65(1), 1-27.
- Hunter, J. E., & Hunter, R. F. (1984). Validity and utility of alternative predictors of job performance. *Psychological Bulletin*, 96(1), 72–98. <https://doi.org/10.1037/0033-2909.96.1.72>
- Huffcutt, A. I., Conway, J. M., Stone, N. J., & Roth, P. L. (2001). Identification and meta-analytic assessment of psychological constructs measured in employment interviews. *Journal of Applied Psychology*, 86(5), 897–913.
- Huffcutt, A. I., & Roth, P. L. (1998). Racial group differences in employment interview evaluations. *Journal of Applied Psychology*, 83(2), 179–189. <https://doi.org/10.1037/0021-9010.83.2.179>
- Juhn, C., & Kim, D. Il. (1999). The effects of rising female labor supply on male wages. *Journal of Labor Economics*, 17(1), 23–48. <https://doi.org/10.1086/209912>

- Kaiser, C. R., & Pratt-Hyatt, J. S. (2009). Distributing prejudice unequally: Do Whites direct their prejudice toward strongly identified minorities? *Journal of Personality and Social Psychology*, *96*(2), 432–445. <https://doi.org/10.1037/a0012877>
- Kalev, A., Dobbin, F., & Kelly, E. (2006). Best practices or best guesses? Assessing the efficacy of corporate affirmative action and diversity policies. *American Sociological Review*, *71*(4), 589–617. <https://doi.org/10.1177/000312240607100404>
- Kang, S. K., DeCelles, K. A., Tilcsik, A., & Jun, S. (2016). Whitened résumés: Race and self-presentation in the labor market. *Administrative Science Quarterly*, *61*(3), 469–502. <https://doi.org/10.1177/0001839216639577>
- Kausel, E. E., Culbertson, S. S., & Madrid, H. P. (2016). Overconfidence in personnel selection: When and why unstructured interview information can hurt hiring decisions. *Organizational Behavior and Human Decision Processes*, *137*, 27–44. <https://doi.org/10.1016/j.obhdp.2016.07.005>
- Kleck, R., Ono, H., & Hastorf, A. H. (1966). The effects of physical deviance upon face-to-face interaction. *Human Relations*, *19*(4), 425–436.
- Kochhar, R. (2020). *Unemployment rose higher in three months of COVID-19 than it did in two years of the Great Recession*. Pew Research Center. <https://pewrsr.ch/2UADTTZ>
- Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). *Validity of the SAT® for predicting first-year college grade point average* (Research Report No. 2008-5). College Entrance Examination Board.
- Kraiger, K., & Ford, J. K. (1985). A meta-analysis of rater race effects in performance ratings. *Journal of Applied Psychology*, *70*(1), 56–65. <https://doi.org/10.1037/0021-9010.70.1.56>
- Krysan, M., & Couper, M. (2017). Race in the Live and the Virtual Interview : Racial Deference , Social Desirability , and Activation Effects in Attitude Surveys. *Social Psychology Quarterly*, *66*(4), 364–383. <https://doi.org/10.2307/1519835>
- Kunda, Z., & Spencer, S. J. (2003). When do stereotypes come to mind and when do they color judgment? A goal-based theoretical framework for stereotype activation and application. *Psychological Bulletin*, *129*(4), 522–544. <https://doi.org/10.1037/0033-2909.129.4.522>
- Kunda, Z., & Thagard, P. (1996). Forming impressions from stereotypes, traits, and behaviors: A parallel-constraint-satisfaction theory. *Psychological Review*, *103*(2), 284–308. <https://doi.org/10.1037/0033-295X.103.2.284>
- Lai, L., & Babcock, L. C. (2013). Asian Americans and workplace discrimination: The interplay between sex of evaluators and the perception of social skills. *Journal of Organizational Behavior*, *34*(3), 310–326. <https://doi.org/https://doi.org/10.1002/job.1799>
- Langer, M., König, C. J., & Papathanasiou, M. (2017). User reactions to novel technologies in selection and training contexts. *Presented at the SIOP 2017 Annual Conference of the Society for Industrial and Organizational Psychology*.
- Langer, Markus, König, C. J., Gebhard, P., & André, E. (2016). Dear computer, teach me manners: Testing virtual employment interview training. *International Journal of Selection and Assessment*, *24*(4), 312–323. <https://doi.org/https://doi.org/10.1111/ijsa.12150>
- Larsen, R. J., & Shackelford, T. K. (1996). Gaze avoidance: Personality and social judgments of people who avoid direct face-to-face contact. *Personality and Individual Differences*, *21*(6), 907–917. [https://doi.org/10.1016/S0191-8869\(96\)00148-1](https://doi.org/10.1016/S0191-8869(96)00148-1)
- Levashina, J., Hartwell, C. J., Morgeson, F. P., & Campion, M. A. (2014). The structured employment interview: Narrative and quantitative review of the research literature. *Personnel Psychology*, *67*(1), 241–293. <https://doi.org/10.1111/peps.12052>

- Lien, P. (2004). *Pilot National Asian American Political Survey (PNAAPS), 2000-2001*. May, 2000–2001.
- Lopez, G., Ruiz, N. G., & Patten, E. (2017). *Key facts about Asian Americans, a diverse and growing population*. Pew Research Center.
- Lukacik, E.-R. R., Bourdage, J. S., & Roulin, N. (2020). Into the void: A conceptual model and research agenda for the design and use of asynchronous video interviews. *Human Resource Management Review*, 100789. <https://doi.org/https://doi.org/10.1016/j.hrmmr.2020.100789>
- Macrae, C. N., Bodenhausen, G. V., Schloerscheidt, A. M., & Milne, A. B. (1999). Tales of the unexpected: Executive function and person perception. *Journal of Personality and Social Psychology*, 76(2), 200–213. <https://doi.org/10.1037/0022-3514.76.2.200>
- Madera, J. M., & Hebl, M. R. (2013). “Don’t stigmatize”: The ironic effects of equal opportunity guidelines in interviews. *Basic and Applied Social Psychology*, 35(1), 123–130. <https://doi.org/10.1080/01973533.2012.746601>
- Mathis, R. L., Jackson, J. H., & Valentine, S. R. (2014). *Human Resource Management* (14th ed). Cengage Learning, Stamford, CT.
- Mattern, K. D., Patterson, B. F., Shaw, E. J., Kobrin, J. L., & Barbuti, S. M. (2008). *Differential validity and prediction of the SAT* (Research Report No. 2008-4). College Board.
- Mayfield, E. C. (1964). The Selection Interview— A re-evaluation of published research. *Personnel Psychology*, 17(3), 239–260. <https://doi.org/10.1111/j.1744-6570.1964.tb00065.x>
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the implicit association test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, 37(5), 435–442. <https://doi.org/10.1006/jesp.2000.1470>
- McDaniel, M. A., Whetzel, D. L., Schmidt, F. L., & Maurer, S. D. (1994). The validity of employment interviews. *Journal of Applied Psychology*, 79(4), 599–616.
- McFarland, L. A., Ryan, A. M., Sacco, J. M., & Kriska, S. D. (2004). Examination of structured interview ratings across time: The effects of applicant race, rater race, and panel composition. *Journal of Management*, 30(4), 435–452. <https://doi.org/10.1016/j.jm.2003.09.004>
- McGinn, K. L., & Milkman, K. L. (2013). Looking up and looking out: Career mobility effects of demographic similarity among professionals. *Organization Science*, 24(4), 1041–1060. <https://doi.org/10.1287/orsc.1120.0778>
- Montoya, R. M., & Horton, R. S. (2013). A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships*, 30(1), 64–94. <https://doi.org/10.1177/0265407512452989>
- Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships*, 25(6), 889-922. <https://doi.org/10.1177/0265407508096700>
- Moscose, S. (2000). Selection interview: A review of validity evidence, adverse impact and applicant reactions. *International Journal of Selection and Assessment*, 8(4), 237–247. <https://doi.org/10.1111/1468-2389.00153>
- Moss, P., & Chris, T. (2003). *Stories Employers Tell: Race, Skill and Hiring in America*. Russell Sage Foundation.
- Mussweiler, T., & Strack, F. (1999). Hypothesis-consistent testing and semantic priming in the anchoring paradigm: A selective accessibility model. *Journal of Experimental Social Psychology*, 35(2), 136–164. <https://doi.org/10.1006/jesp.1998.1364>

- Neckerman, K. M., & Kirschenman, J. (1991). Hiring strategies, racial bias, and inner-city workers. *Social Problems, 38*(4), 433–447. <https://doi.org/10.2307/800563>
- Nord, C., Roey, S., Perkins, R., Lyons, M., Lemanski, N., Brown, J., & Schuknecht, J. (2011). *The nation's report card: America's high school graduates (NCES 2011–462)*. Retrieved from <https://files.eric.ed.gov/fulltext/ED518324.pdf>
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration web site. *Group Dynamics: Theory, Research, and Practice, 6*(1), 101–115. <https://doi.org/10.1037/1089-2699.6.1.101>
- Oreopoulos, P. (2011). Why do skilled immigrants struggle in the labor market. *American Economic Journal: Economic Policy, 3*(4), 148–171.
- Pager, D., & Quillian, L. (2005). Walking the talk? What employers say versus what they do. *American Sociological Review, 70*, 355–380.
- Pager, Devah, Western, B., & Bonikowski, B. (2009). Discrimination in a low-wage labor market: A field experiment. *American Sociological Review, 74*(5), 777–799. <https://doi.org/10.1177/000312240907400505>
- Parsons, C. K., & Liden, R. C. (1984). Interviewer perceptions of applicant qualifications: A multivariate field study of demographic characteristics and nonverbal cues. *Journal of Applied Psychology, 69*(4), 557–568. <https://doi.org/10.1037/0021-9010.69.4.557>
- Ployhart, R. E., Schmitt, N., & Tippins, N. T. (2017). Solving the supreme problem: 100 years of selection and recruitment at the Journal of Applied Psychology. *Journal of Applied Psychology, 102*(3), 291–304. <https://doi.org/10.1037/apl0000081>
- Pulakos, E. D., & Schmitt, N. (1995). Experience-based and situational interview questions: studies of validity. *Personnel Psychology, 48*, 289–308.
- Pulakos, E. D., White, L. A., Oppler, S. H., & Borman, W. C. (1989). Examination of race and sex effects on performance ratings. *Journal of Applied Psychology, 74*(5), 770–780. <https://doi.org/10.1037/0021-9010.74.5.770>
- Purkiss, S. L., Perrewé, P. L., Gillespie, T. L., Mayes, B. T., & Ferris, G. R. (2006). Implicit sources of bias in employment interview judgments and decisions. *Organizational Behavior and Human Decision Processes, 101*(2), 152–167. <https://doi.org/10.1016/j.obhdp.2006.06.005>
- Pursell, E. D., Champion, M. A., & Gaylord, S. R. (1980). Structured Interviewing: Avoiding selection problems. *Personnel Journal, 59*(11), 907–912.
- Quillian, L., Heath, A., Pager, D., Midtbøen, A. H., Fleischmann, F., & Hexela, O. (2019). Do some countries discriminate more than others? Evidence from 97 field experiments of racial discrimination in hiring. *Sociological Science, 6*, 467–496. <https://doi.org/10.15195/V6.A18>
- Quillian, L., Pager, D., Hexel, O., & Midtbøen, A. H. (2017). Meta-analysis of field experiments shows no change in racial discrimination in hiring over time. *Proceedings of the National Academy of Sciences of the United States of America, 114*(41), 10870–10875. <https://doi.org/10.1073/pnas.1706255114>
- Rakić, T., Steffens, M. C., & Mummendey, A. (2011). Blinded by the accent! The minor role of looks in ethnic categorization. *Journal of Personality and Social Psychology, 100*(1), 16–29. <https://doi.org/10.1037/a0021522>
- Reskin, B. F., McBrier, D. B., & Kmec, J. A. (1999). The determinants and consequences of workplace sex and race composition. *Annual Review of Sociology, 25*(1980), 335–361. <https://doi.org/10.1146/annurev.soc.25.1.335>

- Reynolds, D. H., & Weiner, J. A. (2009). *Online recruiting and selection: innovations in talent acquisition*. Wiley-Black.
- Roth, L. M. (2004). The social psychology of tokenism: Status and homophily processes on wall street. *Sociological Perspectives*, 47(2), 189–214. <https://doi.org/10.1525/sop.2004.47.2.189>
- Roth, P. L., Van Iddekinge, C. H., Deortentiis, P. S., Hackney, K. J., Zhang, L., & Buster, M. A. (2017). Hispanic and Asian performance on selection procedures: A narrative and meta-analytic review of 12 common predictors. *Journal of Applied Psychology*, 102(8), 1178–1202. <https://doi.org/10.1037/apl0000195>
- Roulin, N., & Bangerter, A. (2012). Understanding the academic-practitioner gap for structured interviews: “behavioral” interviews diffuse, “structured” interviews do not. *International Journal of Selection and Assessment*, 20(2), 149–158. <https://doi.org/10.1111/j.1468-2389.2012.00588.x>
- Ryan, A. M., & Ployhart, R. E. (2014). A century of selection. *Annual Review of Psychology*, 65(1), 693–717. <https://doi.org/10.1146/annurev-psych-010213-115134>
- Sackett, P. R., & DuBois, C. L. (1991). Rater race effects on performance evaluation: Challenging meta-analytic conclusions. *Journal of Applied Psychology*, 76(6), 873–877. <https://doi.org/10.1037//0021-9010.76.6.873>
- Sakamoto, A., Goyette, K. A., & Kim, C. (2009). Socioeconomic attainments of Asian Americans. *Annual Review of Sociology*, 35, 255–276. <https://doi.org/10.1146/annurev-soc-070308-115958>
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124(2), 262–274. <https://doi.org/10.1037/0033-2909.124.2.262>
- Schmidt, F. L., & Zimmerman, R. D. (2004). A counterintuitive hypothesis about employment interview validity and some supporting evidence. *Journal of Applied Psychology*, 89(3), 553–561. <https://doi.org/10.1037/0021-9010.89.3.553>
- Shelton, J. N., Dovidio, J. F., Hebl, M., & Richeson, J. A. (2009). Prejudice and intergroup interaction. *Intergroup misunderstandings: Impact of divergent social realities* (pp. 21–38). Psychology Press.
- Silvester, J., & Anderson, N. (2003). Technology and discourse: A comparison of face-to-face and telephone employment interviews. *International Journal of Selection and Assessment*, 11(2–3), 206–214. <https://doi.org/10.1111/1468-2389.00244>
- Silvester, J., Anderson, N., Haddleton, E., Cunningham-Snell, N., & Gibb, A. (2000). A cross-modal comparison of telephone and face-to-face selection interviews in graduate recruitment. *International Journal of Selection and Assessment*, 8(1), 16–21. <https://doi.org/10.1111/1468-2389.00127>
- Sturges, J. E., & Hanrahan, K. J. (2004). Comparing telephone and face-to-face qualitative interviewing: a research note. *Qualitative Research*, 4(1), 107–118. <https://doi.org/10.1177/1468794104041110>
- Sweet, L. (2002). Telephone interviewing: is it compatible with interpretive phenomenological research? *Contemporary Nurse: A Journal for the Australian Nursing Profession*, 12(1), 58–63. <https://doi.org/10.5172/conu.12.1.58>
- Terpstra, H. F., Ferreira Pires, L., Heerink, A. W., & Tretmans, G. J. (1996). *Testing Theory in Practice: a Simple Experiment*. Universiteit Twente.
- Thatchenkery, T. J., & Cheng, C. (1997). Seeing beneath the surface to appreciate what “is.” *The Journal of Applied Behavioral Science*, 33, 397–406.

- Tippins, N. T. (2015). Technology and assessment in selection. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 551–582. <https://doi.org/10.1146/annurev-orgpsych-031413-091317>
- Torres, E. N., & Gregory, A. (2018). Hiring manager's evaluations of asynchronous video interviews: The role of candidate competencies, aesthetics, and resume placement. *International Journal of Hospitality Management*, 75, 86–93. <https://doi.org/10.1016/j.ijhm.2018.03.011>
- Torres, E. N., & Mejia, C. (2017). Asynchronous video interviews in the hospitality industry: Considerations for virtual employee selection. *International Journal of Hospitality Management*, 61, 4–13. <https://doi.org/10.1016/j.ijhm.2016.10.012>
- Tropp, L. R. (2007). Perceived discrimination and interracial contact: Predicting interracial closeness among black and white Americans. *Social Psychology Quarterly*, 70(1), 70–81. <https://doi.org/10.1177/019027250707000108>
- U.S. Bureau of Labor Statistics. (2014). *Labor force characteristics by race and ethnicity, 2013*. Retrieved from https://stats.bls.gov/opub/reports/race-and-ethnicity/archive/race_ethnicity_2013.pdf
- U.S. Bureau of Labor Statistics. (2020). *Labor Force Statistics from the Current Population Survey CPS CPS Program Links*. Retrieved from <https://www.bls.gov/cps/>
- U.S. Equal Employment Opportunity Commission. (2007). *2007 EEO-1 national aggregate report*.
- Ulrich, L., & Trumbo, D. (1965). The selection interview since 1949. *Psychological Bulletin*, 63(2), 100–116. <https://doi.org/10.1037/h0021696>
- Van der Zee, K. I., Bakker, A. B., & Bakker, P. (2002). Why are structured interviews so rarely used in personnel selection? *The Journal of Applied Psychology*, 87(1), 176–184. <https://doi.org/10.1037/0021-9010.87.1.176>
- Wagner, R. (1948). The employment interview: A critical summary. *Personnel Psychology*, 2, 17–46.
- Walter, H. (1979). *Vegetation of the earth and ecological systems of the geo-biosphere* (2nd ed.). Springer-Verlag. <https://doi.org/10.1007/978-1-4684-0468-5>
- Way, S., & Thacker, J. W. (1999). Selection practices: where are Canadian organizations. *HR Professional*, 16(5), 33–37.
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, 101(1), 34–52. <https://doi.org/10.1037//0033-295x.101.1.34>
- Wessel, J. L., & Ryan, A. M. (2008). Past the first encounter: The role of stereotypes. *Industrial and Organizational Psychology*, 1(4), 409–411. <https://doi.org/DOI:10.1111/j.1754-9434.2008.00075.x>
- Wiersma, U. J. (2016). The four stages of the employment interview: Helping interviewers put two and two together. *Evidence-Based HRM*, 4(3), 232–239. <https://doi.org/10.1108/EBHRM-11-2015-0045>
- Wiesner, W. H., & Cronshaw, S. F. (1988). A meta-analytic investigation of the impact of interview format and degree of structure on the validity of the employment interview*. *Journal of Occupational Psychology*, 61(4), 275–290. <https://doi.org/10.1111/j.2044-8325.1988.tb00467.x>
- Wilson, J. (1987). *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. University of Chicago Press.

Appendices

Appendix A

Consent Form

Informed Consent Form

An additional benefit of asynchronous video interviews SMU REB 21-071

Principal Investigator: Jingdi Wu

Email: Jingdi.Wu@smu.ca

Faculty Supervisor: Dr. Nicolas Roulin

Email: Nicolas.Roulin@smu.ca

Psychology Department, Saint Mary's University

923 Robie Street, Halifax, NS B3H 3C3, Canada

INTRODUCTION AND PURPOSE OF RESEARCH

You are being invited to participate in a study that is being conducted in the Psychology Department at Saint Mary's University. The goal of our study is to examine how the effectiveness of the interview evaluations in asynchronous video interviews (AVIs) may be impacted by different modes (video, audio-only, first audio then video).

You will be asked to assess a job applicant's responses in an AVI via one of three modes (video, audio-only, first audio, then video) and complete a series of questions following the interview. Your participation is entirely voluntary: you can leave the study at any time and you have the right to refuse to answer any question without penalty or loss of compensation. The investigators have no financial interest in conducting this study.

WHO IS ELIGIBLE TO PARTICIPATE?

Participants must be white male at least 18 years old, have prior work/hiring experience, and currently reside in the United States.

WHAT WILL PARTICIPATION INVOLVE?

After reading information about the company and the job description for a project manager, you will be asked to watch and assess the video-responses of an applicant who completed a 6-question AVI. You will be asked to rate the applicant's

performance on each question, their entire interview performance, and how much they possess the skills or abilities described in the job description. Finally, you will be asked to answer a few questions about yourself. Altogether, you will be asked to answer about 20 questions, and the study should take about 25 minutes to complete.

WHAT ARE THE POTENTIAL BENEFITS OF THE RESEARCH?

The benefits you may receive from participating in this study include: (a) a greater understanding of psychology research, (b) an opportunity to practice interview evaluation, and (c) an opportunity to contribute to scientific research.

WHAT ARE THE POTENTIAL RISKS FOR PARTICIPANTS?

We do not foresee that you will incur any risk, harm, or inconvenience by participating in the study. Although unlikely, it is possible that some you may experience some psychological or emotional discomfort when answering some of the survey items. In the event that this happens, you are allowed to skip over any such items. You can also contact the researchers using the contact information provide above if you have any questions or concerns about the survey.

WHAT WILL BE DONE WITH MY INFORMATION? (OR WHO WILL HAVE ACCESS TO IT?)

Your participation in this study is strictly confidential and anonymous. No personal information will be collected. The survey will be hosted on Qualtrics (for more information, see Qualtrics.com) and the recruitment is done via Prolific. Data collected via Qualtrics are encrypted and surveys are password protected. Data will be stored on the researchers' password-protected computers. Only we (the researchers listed above) will have access to the information collected. The anonymous data will be retained indefinitely, which is a regulation imposed by the scientific field. Data will be used in academic publications or presentations. With your consent to participate in this study you acknowledge this.

WHAT COMPENSATION IS AVAILABLE FOR PARTICIPATION?

You will receive a compensation of £3.50 directly through Prolific provided that you (a) reached the end of the study and (b) took the study seriously (e.g., responded to most questions, passed attention checks, did not speed through the study). Partial compensation would be offered otherwise.

HOW CAN I WITHDRAW FROM THE STUDY?

Your participation is voluntary, and you have the right to withdraw from the study at any time. If you choose to withdraw, you can do so by simply closing your browser. However, by doing so you will no longer be eligible for full compensation. If you would like to withdraw your data after completing the interview, you can do so within one month upon completing the study by emailing the principal investigator (Jingdi Wu) at jingdi.wu@smu.ca and providing your Prolific ID or by contacting us via the Prolific messaging services directly before May 31, 2021. Please note that that your data will be used unless a data withdrawal request is made

HOW CAN I FIND OUT MORE ABOUT THE STUDY?

If you have any questions about the study, or experience any adverse effects from taking part, please contact the principal investigator (Jingdi Wu) at jingdi.wu@smu.ca. If you are interested in the study's results, a summary of the findings will be available after May 31st at <https://atlanticpersonnelselection.com/feedback-reports>.

CERTIFICATION

The Saint Mary's University Research Ethics Board has reviewed this research. If you have any questions or concerns about ethical matters or would like to discuss your rights as a research participant, you may contact the Chair of the Research Ethics Board at ethics@smu.ca or 902-420-5728.

SIGNATURE OF AGREEMENT:

I understand what this study is about, its potential risks and benefits, and by consenting, agree to take part in it. This in no way constitutes a waiver of my rights to legal recourse in the event of research-related harm. I understand that my participation is voluntary and that I can end my participation at any time without penalty. I have had adequate time to think about the research study and have had the opportunity to ask questions.

Please keep an e-copy of this form for your records.

Appendix B
Screening Elements

Note: Those. Only participants who are male, White, over 18-years-old will be eligible screening elements. This will be done based on the screening criteria that are already incorporated in Prolific.

Appendix C

Project Manager Job Description

Garners & Company is a customer-focused personal and small business banking business. We provide tailored solutions that our customers will have the utmost confidence in. By embracing change and forward-thinking values, we ensure that our customers are always at the center of everything we do. For these reasons, Garners & Company has remained a trusted, household name in North America.

The main requirements of the project manager role are to analyze and coordinate the schedule, timeline, procurement, staffing, and budget of a product or service on a per project basis. Specifically, the project manager is supposed to communicate with key stakeholders to determine project requirements and objectives, assign duties to project personnel, develop or update project plans, confer with project personnel to identify and resolve problems, and monitor all aspects of the project.

Core Responsibilities:

- Assign duties or responsibilities to project personnel
- Communicate with key stakeholders to determine project requirements and objectives
- Analyze marketing strategies, financial and customer information, and costs to inform decision-making and strategy development
- Create project status presentations for delivery to customers or project personnel
- Develop or update project plans including information such as objectives, technologies, schedules, funding, and staffing
- Identify project needs such as resources, staff, or finances by reviewing project objectives and schedules
- Monitor costs incurred by project staff to identify budget issue
- Monitor the performance of project team members to provide performance feedback.

- Establish internal and external key performance indicators for the business, and monitor and track the progress of established goals

Required Knowledge, Skills, and Abilities:

- Bachelor of Business Administration, Management, or Finance, or equivalent degree required
- Excellent problem-solving skills
- Ability to develop partnerships, collaborate, and communicate with all levels of the organization (senior management, clients, other stakeholders, and your team)
- Ability to manage budgets, finances, and operations of the company
- Project-management and organization; ability to coordinate multiple projects with different deadlines, deliverables, and key stakeholders to report to
- Excellent verbal and written communication skills
- Leadership, coaching, and mentoring; ability to support staff and foster employee development
- Proficiency in Microsoft Office and the ability to pick up new technology and software easily

Appendix D

Interview Scripts (to use with our actors)

Below are 6 structured interview questions (5 are past-behavioural questions, 1 are situational questions). Each interview question and script will appear in a table like this:

Definition of the competency being assessed by the question.	Indicates whether the question is situational or past-behavioural.
The interview question (how the question will appear to interviewees).	
The answer script (how actor-applicants answer the interview question)	

REDUCE RACIAL BIAS ON INTERVIEW

<p>Teamwork / Collaboration: Working with others to achieve a common objective or complete a shared task.</p>	<p>Past-Behaviour</p>
<p>Describe a time when you were in charge of a group/team and had led them to succeed at a task. What was the task you had to accomplish? What made the team successful? What was your contribution?</p>	
<p>Answer: In one of my previous jobs, one of the employees in the team I directly supervised was never very friendly with others and had terrible communication skills. He was a great worker, but when he had to speak with clients, particularly one with a complaint, he always had a poor attitude. He also didn't have a very good rapport with his fellow employees; therefore, I took it upon myself to try and help him with his customer service. After a particular encounter with a disgruntled customer, where I had to step in, I took him aside. I tried to be pleasant and very straightforward with him. I didn't criticize what he was already doing I simply told him an easier and more efficient way to deal with customers. It was known around the store that he also wasn't the most receptive to criticism, so I worded it in a way that it appeared to benefit him and could shorten his interaction with customers. I simply told him that instead of asking customers "what's the problem" (which instantly insinuates that there is a problem, and essentially creates one) I told him he should try saying "how can I help you today?" and he might find he has a much easier time with the customers. This way, by addressing the customer in a friendly and helpful manner, they usually reciprocate that attitude. Although the employee was quite hesitant at first, I could see that he started to use my suggestion when interacting with customers. I believe he became more effective when try to help others.</p>	

<p>Minimizing Errors/Risks: The considerations that one makes in advance of making a decision or engaging in an action to ensure that the potential for risks, errors, or unfavourable outcomes are minimized.</p>	<p>Past-Behaviour</p>
<p>Describe a situation where you had to evaluate the risks and benefits associated with a decision, for instance buying something important, investing in something, starting a new project, etc. How did you handle it? And what was the outcome?</p>	
<p>Answer: During my last job, I was involved in managing risks related to a software development project. At about half-way point, the project encountered some issues that hadn't been detected in the beginning. More precisely, the development team lacked programmers who were skilled in Java and had collected incomplete systems requirements. Firstly, I managed to identify these issues and contacted concerned stakeholders and was able to get all the requirements we needed for the project. At that point, I started the recruitment of a Java expert. However, after one month, there were still no suitable applicants. Considering the timelines of the project, it is impossible for us to recruit a Java expert just for this project as this project is the only project in our company needed a Java expert. In order to solve this problem, I prepared a proposal to outsource a Java expert, which was accepted. Eventually, the expert was involved during the development phase only. This move</p>	

saved the company the costs of employing a Java expert on a full-time basis. In a way, I got rid of the risks that could have occurred due to the incomplete requirements and missing skills, but it took two extra months to complete the project than initially planned.

<p>Conflict management: Coordinating and managing interpersonal or objective- and tasks-based conflicts among a group of people.</p>	<p>Past-Behaviour</p>
<p>Describe a situation where you had to settle a conflict between two individuals or groups. How did you handle it? And what was the outcome?</p>	
<p>Answer: At a previous job, I was in charge of a team. Resolving a conflict between two team members is a part of my job. Once two team members could no longer work effectively together because of their different preferences in one project. Their relationship began affecting the productivity of other employees, as well as their team. The first thing I did was separate them to calm the situation. Then, I met together with both parties to discuss the problem in a calm and controlled setting. Although I don't really like to deal with such issues, it is part of my role. So, I assumed control of the discussion and made it clear that a compromise must be reached. One of my main objectives during the meeting was to understand the perspectives of both parties without siding with either one. At first, this was difficult since each party presented their arguments without considering the other's perspective. To counter this, I made it clear to each party that changes must be made since the status quo was unworkable. I also explained that if they were unable to find some common ground, I would have to impose something myself. Shortly thereafter, we agreed on a workable solution. Before concluding the meeting, I emphasized that in future disagreements each party must act considerately and professionally and avoid getting emotional. After our meeting, work resumed as normal.</p>	

<p>Persuasion, Motivation: Convincing others to support an opinion that they previously did not hold or behave in ways that they previously did not want to behave.</p>	<p>Past-Behaviour</p>
<p>Describe a time when you successfully persuaded someone to see or do things your way. What was the situation and how did you achieve this?</p>	

Answer: At my last job, once, my team was in charge of building a new production line for at a manufacturing site. There was a big debate about which provider we should use for supplying a central machine for our new production line. The two providers we considered seemed to have similar products for comparable prices, so the majority of my colleagues were interested in working with the more well-known of the providers. I wasn't really convinced they were right, so before casting my vote, I decided to do some research on the two companies and the products and services they offered. I took a closer look at the support services or warranty plans the two providers offered and found out the lesser-known company was actually going to provide us with more useful features and better support. The next day, in our discussion meeting, I proposed that the lesser-known company was a better option. My colleagues initially disagreed with my perspective, and it sparked a vigorous debate. I knew they were wrong, so in order to justify that the lesser-known company was a better option, I had to argue and persuade my colleagues one by one based on the evidence I found. The discussion took almost a day, but in the end, my colleagues realized the lesser-known company was a better option for our budget and needs.

<p>Problem-Solving: Recognizing when a problem has occurred, identifying the problem, and proposing/implementing an appropriate solution.</p>	<p>Situational</p>
<p>It's been a few months since you implemented a new company-wide initiative to report the progress made in long-terms projects. You are realizing that it is not working the way you had anticipated. A lot of money was spent training employees to use the reporting system, but the compliance rate to your new procedures has been very low. Overall, you have seen no gains in project efficiency, and the top management team is becoming increasingly concerned. Additionally, you and the management team have heard a few direct complaints from employees on parts of the new system. What would you do? What would you tell the management team?</p>	
<p>Answer: If I were the leader of this project, first of all, I would apologize to the top managers because of the disappointing initial results. Then, I will try my best to figure out why this project failed and deal with the new system's negative complaints. If possible, I will run a company-wide survey, figuring out if there is one core issue or factor that might have negatively impacted the process. For instance, there might be a way to directly gather complaints about the initiative across the company. Maybe we could provide a channel for collecting employees' opinions and encourage them to point out the new systems' problems. I know people don't like surveys, but if we can get enough people to participate, it will give us enough information about the problem. The survey will also show that our team, and the company in general, values employees' opinions, potentially reducing employees' negative reactions to the new systems. After collecting this information, I would focus on analyzing the main reasons for these disappointing results. For instance, people can be slow to adopt new initiatives and it can take several months to see the true results of new company initiatives. To speed things up, I might hold</p>	

various activities or training to facilitate the transition to the new system or help employees overcome difficulties. Or, if the main issue seems to be the new system, I will just fix and update it with my team.

<p>Planning and Organization: How tasks, resources, and constraints are managed towards fulfilment of a specific objective.</p>	<p>Past-Behaviour</p>
<p>Tell me about a time you needed to adjust your project plans because the client had new requirements, or your team faced unexpected challenges. How did the changes in the situation affect your plan? What approach did you take to complete the project? What was the outcome?</p>	
<p>Answer: In my last job, as a team leader, I often encountered unexcepted issues when implementing various projects. If I have the resources, knowledge and time to solve a problem within my immediate team, then my first course of action is to rely on the team. However, when I feel the issue involves a sensitive matter, requires high-level approval or needs additional input on the decided course of action, I need to work with my direct supervisors on solving the issue. No matter the problem, I feel it is always best for the team and my own professional development to use every resource available to get as far as I can in solving the issue before bringing others in.</p> <p>For example, once, I was working on a project where the sales team promised the client that we could integrate an additional feature in the middle of the project. But I knew our current program could not support it. I tried my best to communicate with the sales team, but they were so focused on securing the contract that they did not want to revise their offer to the client. Ultimately, I had to involve my direct supervisor. She agreed that it was impossible to deliver the feature at this stage. Together, we had a difficult conversation with the client, but we managed to reach a compromise. In this project, we would not provide this feature. But we started a new project to develop a way to support the feature soon after and decided that would offer it to the client free of charge once it is ready.</p>	

REDUCE RACIAL BIAS ON INTERVIEW

Appendix E

Interview Rating Scales

Q1: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Q2: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Q3: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Q4: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Q5: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Q6: Please give your evaluation of the quality of the applicant's performance on this question using the following rating scale				
1	2	3	4	5
Poor		Average		Excellent

Note. Each scale will present after each interview question.

Please give your evaluation of the quality of the applicant's performance based on all six questions using the following rating scale.				
1	2	3	4	5
Poor		Average		Excellent

Based on the applicant's performance in the interview, please use the following rating scale to make an inference regarding the applicant's true level in each of the following work-related attributes				
1	2	3	4	5
Poor		Average		Excellent
Attribute				Rating
Teamwork / Collaboration: Working with others to achieve a common objective or complete a shared task.				
Minimizing Errors/Risks: The considerations that one makes in advance of making a decision or engaging in an action to ensure that the potential for risks, errors, or unfavourable outcomes are minimized.				
Conflicts management: Coordinating and managing the conflicts of tasks or objectives among a group of people.				
Persuasion, Motivation: Convincing others to support an opinion that they previously did not hold or behave in ways that they previously did not want to behave.				
Project Planning: How tasks and resources are managed towards fulfilment of a specific objective.				
Problem-Solving: Recognizing when a problem has occurred, identifying the problem, and proposing/implementing an appropriate solution.				

Please answer the following questions on the scale provided based on your <u>overall</u> impression of the applicant.				
1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
The applicant possesses the necessary knowledge, skills, and abilities to perform the duties of the position they interviewed for				
The applicant is a good match or fit with the organization				

Appendix F
Color-Blind Racial Attitudes Scale

In the next pages, we will ask you to answer a few questions about yourself and your views, preferences, and values.

Please indicate the extent to which you agree or disagree with each statement. Respond to each item using the following scale.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither Disagree Nor Agree	Somewhat Agree	Strongly Agree
Items				Ratings
White people in the U.S. have certain advantages because of the color of their skin.				
Race is very important in determining who is successful and who is not.				
Race plays an important role in who gets sent to prison.				
Race plays a major role in the type of social services (such as type of health care or day) that people receive in the U.S.				
Racial and ethnic minorities do not have the same opportunities as White people in the U.S.				
Everyone who works hard, no matter what race they are, has an equal chance to become rich.				
White people are more to blame for racial discrimination than racial and ethnic minorities.				
Social policies, such as affirmative action, discriminate unfair against White people.				
White people in the U.S. are discriminated against because of the color of their skin.				
English should be the only official language in the U.S.				
Due to racial discrimination, programs such as affirmative action are necessary to help create equality.				
Racial and ethnic minorities in the U.S. have certain advantages because of the color of their skin.				
It is important that people begin to think of themselves as American and not African American, Mexican American or Italian American.				
Immigrants should try to fit into the culture and values of the U.S.				
Racial problems in the U.S. are rare, isolated situations.				
Talking about racial issues cause unnecessary tension.				
Racism is a major problem in the U.S.				

It is important for public schools to teach about the history and contributions of racial and ethnic minorities.	
It is important for political leaders to talk about racism to help work through or solve society's problems.	
Racism may have been a problem in the past, it is not an important problem today	

REDUCE RACIAL BIAS ON INTERVIEW

Appendix G Demographics Questionnaire

1. What is the highest level of education you have completed?

- Less than High School
- High School
- Associate Degree or Professional Degree
- Bachelor's Degree
- Master's Degree
- Doctoral Degree
- Other

2. Please select "agree."

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

3. What is your employment status?

- Employed full-time
- Employed part-time
- Unemployed and actively seeking work
- Unemployed and not actively seeking work

4. How much experience have you had as an interviewer (in years)?

5. Approximately, how many traditional interviews have you completed in your life?

6. Approximately, how many asynchronous video interviews (AVIs) have you completed in your life both as an interviewer and job applicant?

Appendix H

Feedback Letter
An additional benefit of asynchronous video interviews
SMU REB 21-071

Principal Investigator: Jingdi Wu

Email: Jingdi.Wu@smu.ca

Faculty Supervisor: Dr. Nicolas Roulin

Email: Nicolas.Roulin@smu.ca

Psychology Department, Saint Mary's University,
923 Robie Street, Halifax, NS B3H 3C3, Canada

Dear valued participant:

I would like to thank you for your participation in this study.

The purpose of the study was to examine whether asynchronous video interviews (AVIs) are a feasible solution to reduce the effects of the interviewer's racial bias on interview evaluation by separating video and audio. More specifically, we wanted to examine whether the partially blind mode (present audio-only mode for the first several questions, followed by video mode for the remainder of the interview) is an effective way to control and reduce racial bias.

The nature of the phenomenon we are investigating required minor deception on our part. For instance, we relied on a mock company and job description. You were randomly assigned to watch the video-recorded responses of one "applicant" who was either White, Black, or Asian. Moreover, all candidates in the study were actors who read the same script and followed the same procedure; we did this to ensure all candidates were identical in all aspects beside their race. All this information was not disclosed up front because they could have affected your responses in the study. This was done to explore the question of whether the partially blind mode in AVIs could help reduce racial bias.

Any data pertaining to you as an individual participant will be kept anonymous and confidential. Once all the data are collected and analyzed, we plan on sharing this information with the research community through publications, conferences, and presentations. The data will be aggregated, and no individual participants will be identified.

If you are interested in receiving more information about this study, would like to withdraw your data, or if you have any questions or concerns, you may contact the principal investigator (Jingdi Wu) at Jingdi.Wu@smu.ca before May 31st. If you are interested in the study's results, a summary of the findings will be available after June 31st at <https://atlanticpersonnelselection.com/feedback-reports>.

This project was reviewed by the Saint Mary's University Research Ethics Board. Should you have any comments or concerns about ethical matters or would like to discuss your rights as a research participant, please contact the Chair of the Research Ethics Board at +1 902-420-5728 or ethics@smu.ca.

Thank you,
The Research Team

Appendix I

Recruitment Message

All participants will be recruited via Prolific. After reading the following brief description of the study, participants will be able to choose this research study (among many studies available) within the Prolific environment.

Title: An additional benefit of asynchronous video interviews

Description: Complete a about 20-minute online study examining the benefits of asynchronous video interviews (AVIs) in exchange for £3.50. AVIs require job applicants to record their responses to interview questions on a web platform, and their video-recorded responses are later reviewed/rated by hiring managers. In this study, you will be asked to watch the video-recorded responses of applicants for a position, and evaluate them. Then you will be asked to answer a few questions about yourself.

Appendix J

Picture Pilot Test N = 50

Profile	Mean	SD	Lower r CI	Upper r CI	Mean	SD	Lower r CI	Upper r CI	Mean	SD	Lower r CI	Upper r CI
	<i>Attractiveness</i>				<i>Likability</i>				<i>Health</i>			
Asian 1	2.84 ^{b,d,f,h,j,l}	1.43	2.45	3.22	4.12 ^{b,d,f,h}	1.44	3.73	4.51	3.55 ^{b,d,f}	1.46	3.16	4.00
Asian 2	4.47 ^{b,c}	1.26	4.12	4.80	5.31 ^c	1.21	4.94	5.61	5.61 ^c	1.34	5.24	5.96
Asian 3	4.51 ^{b,e}	1.08	4.20	4.80	5.12 ^{b,e}	1.11	4.82	5.41	5.51 ^e	.89	5.27	5.78
White 1	4.69 ^{g,m}	.96	4.43	4.96	5.20 ^j	1.26	4.86	5.57	5.49	1.12	5.18	5.78
White 2	5.20 ^a	1.06	4.88	5.51	5.49 ^a	1.28	5.12	5.84	5.57 ^a	1.12	5.22	5.88
Black 1	4.49 ^{b,i}	1.40	4.10	4.86	4.78 ^{b,d}	1.62	4.31	5.20	5.37	1.17	5.06	5.67
Black 2	4.18 ^{b,k,n}	1.44	4.76	4.55	4.41 ^{b,d,f}	1.54	3.98	4.82	5.14 ^{b,d,f}	1.23	4.82	5.47

Note. 95% Confidence Intervals. Attractiveness/ Likability/ Health were rated on a 7-point scale with lower score indicating higher levels of attractiveness. For each measure, Post-hoc testing revealed that profiles with ^{a,c,e,g,i,k,m} were rated significantly higher than those with ^{b,d,f,h,j,l,n}. Bloded actors were finally selected in this thesis.