

Implicit and Explicit Biases for Gender in Opera Roles

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Recent scholarship by LaBonte and Bryngelsson has illustrated an imbalance of roles composed for men and women within often-performed operas today. This study examines the possible implications of this on audience members, testing participants' explicit and implicit biases for gender after watching scenes from an opera by Mozart, performed as written and also performed with the gender roles reversed. The experimental findings have implications for opera companies and for opera pedagogy, and we ask whether continuing to perform frequently performed operas from this era as written is propagating negative stereotypes against women, in terms of both representation and character portrayals.

INTRODUCTION

A recent survey of the top ten performed operas worldwide from 2004–18 revealed that only 30% of roles are for women.¹ Similarly, Finkelstein, Varga, and LaBonte found that the opportunity gap between low voices and treble voices is wide: only 29% of the roles in the fifty most-performed operas from 2010 to 2019 were for treble voices and the remaining 71% were for low voices.² Bryngelsson's research has illustrated comparable results.³ Not only are there fewer characters written for women, but the roles themselves are also fraught with portrayals of sexist stereotypes and negative outcomes for women who step out of line.⁴ Moreover, Higgins has argued that opera riddles its characters with harmful stereotypes and heightens the importance of its male characters, and writes, "Male characters get to carry the whole weight of the human experience (they can be 'everyman'). Women don't." Higgins describes the tendency for operas to kill their leading ladies and their inability to pass the so-called "Bechdel test" (in which two women have a conversation that is not about men).⁵

This research investigated stereotypical gender roles and gender disparities in opera, in conjunction with their impact on audience members, as earlier research (such as that by Mosharafa) has suggested that portrayals of gender and race in media, specifically television, can affect our morals and beliefs.⁶ Further, a study conducted by Mok shows that media images and stereotypes negatively affect Asian Americans' mental health and propagate further stereotypes of them.⁷ The study herein asks whether representations of gender in operas might further the implicit attitudes of those who attend (and those who participate in) opera performances. While the authors wholeheartedly acknowledge that there is musical and pedagogical value in 18th and 19th-century operas (and Bryngelsson's 2021 survey of the top 50 operas performed worldwide between 2010 and 2019 reveals that 82% are from this period),

research is necessary to determine their potential to also perpetuate harmful gender biases within opera audiences and student performers.⁸

This study investigated the perception of genders in a classic operatic scene and tested whether swapping gender roles in a scene can affect implicit and explicit biases of men and women. To operationalize this, participants in this study were randomly divided into two groups and watched one of two opera scenes. Group 1 watched a scene from Mozart's *Così fan tutte*, as written, sung by a male and female singer for roles composed for a man and a woman, respectively; Group 2 watched the same scene, but the female performer sang the role for a man (and vice versa). Although Higgins claims there are few sexist undertones in Mozart's *Così fan tutte*, Ford illustrates its potential to reinforce harmful gender stereotypes for men and women.⁹ That is, a translation of the opera's title is "all women are like that," and while both men and women are viewed as foolish in the end, the dynamic between the characters Dorabella and Guglielmo in various scenes supports a power differential, as Guglielmo can easily convince Dorabella to bend to his will and cheat on her fiancé Ferrando, and the women do not recognize their own fiancés when they show up in disguise. Regardless, *Così* remains an oft-performed work, and this study asks whether scenes from this opera can affect audiences' implicit biases of gender.¹⁰

After participants watched the recorded excerpt from Mozart's *Così fan tutte*, participants took an implicit bias test, called the "Gender and Leadership Implicit Association Test (IAT)."¹¹ This test was deployed as an implicit measure of "attitudes and beliefs that people may be unwilling or unable to report" surrounding genders in leadership roles.¹² Implicit Association Tests (IATs) have been used to test multiple implicit associations in over twenty million participants and have demonstrated that implicit bias exists as a product of society and everyday experiences; it also affects our behavior.¹³ Still, we note that while scholars have summarized numerous benefits of these implicit association tests, these authors have also described debates surrounding interpretations of these tests, including whether such biases can be changed over a brief period.¹⁴ Given that some researchers assert that implicit biases are less stable over time than explicit biases, we utilized both implicit

and explicit measures in our study.¹⁵ We hypothesized that participants would have more bias towards men in leadership roles after watching the scene as Mozart composed, and and vice versa after watching the scene with reversed roles. Finally, participants used three words to describe the two performers, capturing explicit attitudes from participants, and we hypothesized that participants would utilize differing adjectives for the male and female performers depending on which scene was viewed.

METHOD

The following experiment was approved by the Homewood Institutional Review Board of the Johns Hopkins University (HIRB00014207).

Participants

Participants ($N = 78$) were recruited through the student email listserv at the Peabody Conservatory at the Johns Hopkins University and through the online platform "Prolific." Participants who took part in the experiment on Prolific were prescreened as to whether they shared similarities with students at the Peabody Conservatory. That is, all participants were 18+, English speaking, located in the USA, reported no hearing difficulties, and were current degree-seeking students at an institution of higher education. Importantly, all Prolific participants ($n = 40$, $M_{\text{age}} = 21.70$, $SD = 3.86$) identified with not playing a musical instrument (reporting $M = 0.70$ years of musical study, $SD = 1.84$), whereas all Peabody participants ($n = 38$, $M_{\text{age}} = 23.53$, $SD = 5.06$) were enrolled in a collegiate music program (reporting $M = 12.76$ years of musical study, $SD = 5.37$). Of the 38 Peabody participants, 16 participated in an opera (or opera scenes) in some way (eight in each group) and nine participants were singers; the rest identified themselves as instrumentalists.

Materials

Prior to the experiment, two opera scenes from Mozart's *Così fan tutti* were filmed in the opera studio at the Peabody Conservatory of the Johns Hopkins University (JHU) in the Fall of 2021. Voice students at Peabody were hired to sing the roles. Recordings were imported into "Panopto," a browser-based video editing platform used by JHU, and closed captions with English trans-

lations were added to the videos. Each video was six minutes in length. The scene began with Mozart's aria for baritone "Non siate ritrosi" sung by the male character Guglielmo, followed by the "Locket Duet" sung between Guglielmo and the female character "Dorabella" (Act I, Scene 11, No. 15 "Aria" and Act 2, Scene 2, No. 20 "Duetto"). The scene was then re-recorded, but this time the performers sang reversed gendered roles (i.e., a man singing the part Mozart composed for a woman—Dorabella—and vice versa). Performers were asked to wear all black to remove the possible confound for costuming, and the set and staging also did not differ between the two recordings.

Procedure

The experimental interface was created using the Qualtrics survey website and administered through an internet browser. Participants took the experiment individually, each using their own computer with a keyboard. Using code from the online IAT tool called "iatgen," the survey ensured that participants were using a computer because the IAT requires a computer with a keyboard; (those attempting to take the survey from an incompatible device were not allowed to proceed with the survey questions).¹⁶ There were four sections of the survey:

1. In part one, participants were randomly divided into two groups, in which each participant only watched one of the two opera scenes recorded. Those in Video Group 1 (39 participants: 19 from Peabody and 20 from Prolific) watched the scene as Mozart intended. Video Group 2 (39 additional participants: 19 from Peabody and 20 from Prolific) watched the reversed scene with the male singing the role of Dorabella and female singing the role of Guglielmo. All participants were asked to watch the video attentively and were only told that they were watching a scene from a famous opera.
2. In the second part of the experiment, participants were told that they were taking a speed reaction test. They took the Gender and Leadership IAT, implemented for use within the Qualtrics survey using code from iatgen.¹⁷ The Gender and Leadership IAT is a counterbalanced, seven-block Implicit Association Test.¹⁸ Following the paradigm of IATs, participants typed the "E" and "I" buttons on their keyboard when responding to prompts on the screen. See Figure 1

IAT items

<i>Leader words</i>	<i>Supporter words</i>
Leader	Supporter
Ambitious	Helpful
Determined	Understanding
Dynamic	Sympathetic
Assertive	Compassionate
<i>Male names</i>	<i>Female names</i>
Josh	Emily
Brandon	Donna
Peter	Debbie
Ian	Katherine
Andrew	Jane

Figure 1. Terms used in the Gender and Leadership IAT.²⁷

which illustrates the terms used in the "Gender and Leadership" IAT.¹⁹

3. In the third part of the survey, participants answered explicit questions about what was observed. They responded to four validity questions: one about which lyrics were used frequently in the opera scene, one about the plot, one about the color of the bench in the set, and one about the staging between the two characters. These questions were inserted in order to determine whether participants were watching the opera scene attentively. Participants were also asked to use three words to describe each performer.
4. Finally, participants responded to background questions about age, gender, and musical experiences. For the latter, the survey collected participants' number of years of formal music training, whether they identified as a musician ("yes as instrumentalist," "yes as vocalist," or "no"), whether they had participated in an opera scenes production (yes, no), and whether they were currently enrolled in a collegiate music program (yes, no). The entire experiment lasted 15–30 minutes, depending on the speed of participants.

RESULTS

We first determined that participants were attentively watching the opera scene video. To assess this, we studied responses to the four multiple-choice validity questions listed above in our procedure. Each group

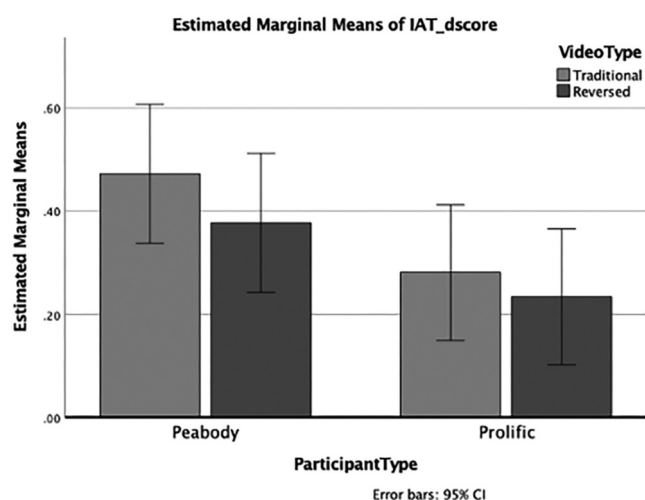


Figure 2. Average IAT *d*-scores (larger scores represent more bias for Leader words associated with male names).

averaged at least 68% correct on these validity questions. We then submitted responses for analysis.

To investigate whether participants had implicit biases for gender, participants' *d*-scores on the IAT were determined using *iatgen*, which also checked for internal consistency and error rate, and removed participants due to excessive speed; it also determined a *d*-score for each participant. Participants' individual *d*-scores were compared against 0; both Peabody and Prolific groups demonstrated a bias for male names associated with leadership terms, as all IAT *d*-score means were significantly higher than 0 (Peabody Video Group 1: $M = 0.47$, $SD = 0.29$, $p < .001$; Peabody Video Group 2: $M = 0.38$, $SD = 0.26$, $p < .001$; Prolific Video Group 1: $M = 0.28$, $SD = 0.29$, $p < .001$; Prolific Video Group 2: $M = 0.23$, $SD = 0.33$, $p < .001$). Participants' individual IAT *d*-scores were then submitted to an independent-samples ANOVA with one between-subjects factor for video type (2: traditional video versus reversed video) and one between-subjects factor: Participant Type (Prolific participants versus Peabody participants), to test whether IAT scores had any differences based on which video was watched, or for each participant group. There was no interaction between these factors ($F(1, 74) = 0.01$, $p = .72$), and while there was no significant effect for video type ($F(1, 74) = 1.13$, $p = .29$), there was a significant effect for Participant Type ($F(1, 74) = 6.27$, $p = .014$, $\eta_p^2 = 0.078$), suggesting a small effect that musicians are more biased than the general population. While no significant effect was found

A. Traditional roles video, male performer:



B. Traditional roles video, female performer:



C. Reversed roles video, male performer:



D. Reversed roles video, female performer:



Figure 3. Participant descriptions of the four characters observed in the experiment. Descriptions of the Guglielmo character are illustrated in A and C; Dorabella in B and D.

for video type, Figure 2 illustrates that implicit bias for gender was slightly less for the participants who watched the reversed roles video.

Recall that participants were also asked to describe the performers using three words. So as to not give away any hypothesis regarding gender and roles, we asked participants to describe the shorter character and the taller character, corresponding with the female and male performers, respectively. Findings were visualized in a word cloud, in which words used by participants were logged, and those used most frequently by participants were indicated by larger font sizes. See Figure 3 and note that descriptions of the Guglielmo character are illustrated in 3A and 3C, and descriptions of the Dorabella character are illustrated in 3B and 3D.

DISCUSSION

While results suggest that implicit biases for genders associated with leadership roles were not significantly moderated by a six-minute viewing experience, we note that this bias was indeed less after viewing the reversed roles video in comparison to those watching

the traditional roles video (Figure 2). It may be that the traditional video primed implicit bias in the participants developed over their lifetimes, and it remains untested whether participants watching a reversed scene over a longer exposure period would reduce this bias further.²⁰

Participants were also asked to describe the characters with three words (see Figure 3). For those who watched the traditional roles video, the most common word to describe the male performer was the word “assertive,” mentioned eleven times (see Figure 3, A). In contrast, the most common word used to describe the male performer in the reversed roles video was “unsure,” mentioned eight times (see Figure 3, C). Regarding the female performer, the most common word to describe the female performer in the traditional roles video was “hesitant” (used eight times, Figure 3, B) whereas in the reversed roles video, the most common word for the female character was “assertive,” a word used by a staggering eighteen of the participants (of the 39 who watched the reversed roles video). While “assertive” was a word from the IAT test, participants again invoked it here for both Guglielmo characters, whether performed by a male or female. We note that other words not in the IAT were used by participants in the word clouds, including “shy,” “unsure,” and “hesitant,” when describing Dorabella. The man playing Guglielmo was described as “compassionate” and “passionate” while the woman playing Guglielmo was described as “aggressive.” The man playing Guglielmo was also described as “ambitious,” which was lacking in the woman’s descriptors. Crucially, Figure 3 illustrates that participants can readily associate different genders with various adjectives ranging from assertive to hesitant, depending on the role. It may be that over time, audiences observing operas with genders performing a wide variety of character types may break down implicit biases for gender.

Limitations and Confounds

We note several confounds in the experiment. First, it may be that singers performing more lyrics, regardless of gender, might affect audience bias; Guglielmo had many more lines than Dorabella. Second, and along similar lines, it may be that the singer singing the role with a wider vocal range may also be perceived differently than a character with a narrower range. Third, to augment the open-ended task of asking participants to

describe the performers with three words, participants could also be asked to rate performers with various adjectives. This confound also suggests an avenue for future research, whereby an experiment might test and include more specific questions about the participant’s explicit views on each character.

A serious limitation of the study was that the six-minute opera scene may have been too short to have impacted gender biases acquired throughout a lifetime, highlighting familiar criticisms of the Implicit Association Test; it may be that this also provides some lines for future research, described below.²¹ Finally, participants were unmonitored, and it may be that they were not fully attentive to the task or completed the experiment in a noisy environment; while we had validity trials, these were related to visual aspects of the video, and we had no catch trials for what was heard.

Implications and Future Directions

While the IAT results shown in Figure 2 were not significant, there appears to be a trend suggesting that viewing swapped operatic roles between men and women can improve upon implicit bias some people might hold towards women and gender roles. This experiment could be replicated with more participants for further insight into societal attitudes to include populations from other generations. Further, a longer exposure to an operatic scene rather than the six-minute scene used in our study (for example, a full-length opera) may yield more concrete results. A field study conducted over a longer span of time comparing a company that employs swapped or fluid genders within roles with a company that performs all operas as written, may also be helpful. The IAT and explicit measures tasks could be taken by audience members and performers alike.

Citing Nosek, Jost argues that when explicit and implicit attitudes correlate, they strongly predict behavior.²² In our study, we observed an implicit bias against women in leadership roles and that when observing Mozart’s scene as written, participants also provided explicit descriptors supporting those attitudes. We suggest that affording singers the opportunity to play roles outside of their assigned at birth gender may help to break down gender stereotypes over time. Recalling the data from LaBonte’s research, that more roles are composed for men than women, this would also offer

opportunities for those not identifying as men and simultaneously offer opportunities for non-women to play roles composed for women as well.²³

Findings herein can add to the important conversation surrounding the perception of gender in the opera world and continue the discussion about the discrepancies between male opportunities and female opportunities. This research may add to discussions surrounding shifts of attitudes in the opera world, and we recognize that some North American contemporary opera companies have incorporated gender-balanced casts and wider views of female identity.²⁴ One possibility includes swapping gender roles, which is not without precedence: the Chicago Opera Theater premiered a performance of *Carmen* by Bizet in September 2021 with Jamie Barton, a mezzo soprano, as Carmen and Stephanie Blythe, another mezzo soprano, as her love interest Don José.²⁵ It may be that normalization of swapping gender roles (a soprano singing a tenor role like Ferrando as a woman or a tenor singing a soprano role like Dorabella as a man) could also help treble voices and women gain access to more opportunities. Recent scholarship by LaBonte outlines some additional examples and future steps both for opera companies and collegiate institutions for greater representation of female roles and portrayals of wider ranges of female identity.²⁶

CONCLUSION

Drawing upon examples from operatic literature that suggest that portrayals of men and women in Classical operas continue gender-based stereotypes, we conducted a formal experiment to test the impact of watching a Mozart opera scene on audiences. Analysis of the data suggests that while implicit biases against women in leadership roles were not significantly different when watching a traditional opera scene verses a scene where the man and woman switch roles, there was a trend that this bias receded when watching the gender roles reversed. Further, participants showed distinct differences in explicit descriptors of the male and female singers between the two scenes, using the same adjective for the male role whether played by a man or woman. These findings have implications for opera programs both at the collegiate levels and in the professional field, and may add to the discussion of opera programming with respect to gender roles and their possible impact.

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NOTES

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