

## Racial stereotypes and facial physical attractiveness: exploring their implications in moral assessments in healthcare

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THEMATIC ARTICLE

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**Abstract** *In this study of 333 participants, we investigated how racial stereotypes and facial attractiveness impact moral evaluations in healthcare. We used pictures of faces with different levels of attractiveness in moral dilemma scenarios, performing statistical analyses such as ANOVA and ANCOVA to examine these complex interactions. We found that physical attractiveness positively influences moral evaluations only in low moral conflict scenarios and does not apply to high conflict or impersonal situations. The relationship between self-declared skin color and participants' gender was only confirmed in a specific scenario, highlighting the complexity of these influences. Hypotheses three and four, which suggested that participants' ethnic and moral identity would suppress the effects of racial stereotypes and facial attractiveness, were not confirmed. However, we observed that the ethnic profile of the faces and the participants' motivation to control prejudice positively influenced moral evaluations. These results are interpreted in light of theories on interpersonal attraction, moral judgment, and intergroup relationships, providing essential insights into the complex dynamics that shape moral evaluations in healthcare.*

**Key words** *Facial Physical Attractiveness, Racial Stereotypes, Moral Judgment, Health*

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## Introduction

This article presents the results of a study that aimed to examine in an unprecedented way the mutual influence of facial physical attractiveness and racial stereotypes on moral judgment tasks, particularly regarding individuals from different ethnic groups in the Brazilian context. The study investigated the factors that can determine interpersonal attraction, considering the interaction of these factors with elements that harm the establishment of relationships and contribute to moral judgment vis-à-vis an individual or group, considering different scenarios, such as the example of health contexts<sup>1</sup>.

Interpersonal attraction and physical attractiveness are fundamental concepts in social interaction. They play crucial roles in many aspects of life, including health<sup>2</sup>. Historically, the study of facial physical attractiveness has often been associated with the “halo effect” – the tendency to attribute positive characteristics, such as intelligence and success, to attractive people<sup>3</sup>. However, recent research has revealed distinct and complex results, highlighting influences such as social context<sup>4</sup>, affection, and familiarity<sup>2</sup> in the perception of physical attractiveness.

In addressing the relationship between racial stereotypes and facial physical attractiveness, this research also recognizes that information about a target is often simplified based on physical characteristics alone and how this can impact moral judgment<sup>5</sup>. Based on recent studies, moral cognition involves moral rules, emotional responses, and cost-benefit assessment. Moral judgment is part of this process and occurs when evaluating an individual's actions or decisions<sup>6,7</sup>. This study explores how facial attractiveness and racial stereotypes affect moral responses.

Thus, this article's main aim is to present the results of research that, through an experimental approach, sheds light on the relationship between facial physical attractiveness, racial stereotypes, and moral judgment in varying scenarios, with a particular focus on moral health dilemmas. As a result, we seek to explore little-investigated territories and provide possible insights to understand the complex human interactions in crucial contexts of moral decision-making.

## Methods

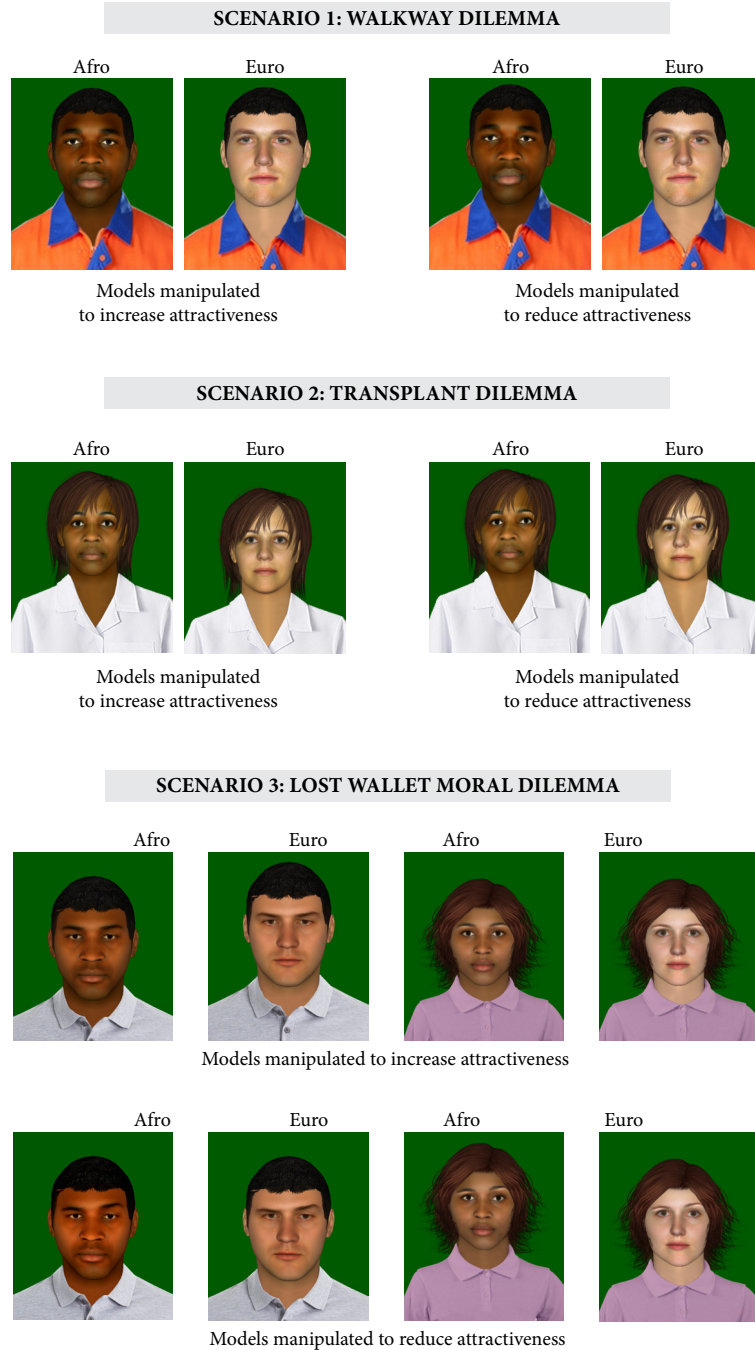
This experimental study investigates the influence of racial stereotypes and the level of facial physical attractiveness on moral judgment. The research aims to identify whether these factors influence the assessment of the moral conduct of targets with different ethnic profiles and physical attractiveness levels. Furthermore, we seek to (a) verify the mutual influence of racial stereotypes and facial physical attractiveness in attributing moral conduct to targets; (b) identify the psychosocial contexts in which the association between racial stereotypes and facial physical attractiveness occurs in assessing moral conduct; (c) determine in which psychosocial contexts this association results in higher levels of assessment of moral conduct; and (d) evaluate an explanatory model that considers racial prejudice, physical attractiveness, and psychosocial context as predictors of the assessment of the moral conduct of targets with different ethnic backgrounds and physical attractiveness levels within the health context.

### Participants

The survey enrolled 333 participants residing in Brazil, whose results were validated, against 454 people who accessed the survey website, representing an effective participation rate of 73.35% of validated participants.

### Instruments and materials

An online questionnaire was created on the Ef-survey platform to collect the data. Three pictures previously assessed as moderately attractive or very attractive were selected to compose the three Moral Dilemma Scenarios, with skin color validated as brown. The pictures were digitally manipulated using the Facegen Modeller v.3.0 software, generating eight pictures with variations in ethnic profile (Africanized or Europeanized) and physical attractiveness level. A 4.0 parameter was employed to adjust the Africanized or Europeanized pictures, and 3.0 to increase or reduce physical attractiveness. Thus, eight pictures were generated, including male and female faces in both ethnic profiles. These pictures formed 16 compositions illustrating the three Moral Dilemma Scenarios (Walkway, Transplant, and Lost Wallet) and are displayed in Figure 1. Photoshop CC software was used to add scene-specific features and clothing to the char-



**Figure 1.** Models with African and European ethnic characteristics adjusted in regarding their facial attractiveness and personalization per the dilemmatic context.

Source: Authors.

acters. Male and female characters were only included in the Lost Wallet scenario to control the gender effect. This process created appropriate visual contexts for each moral dilemma scenario,

considering health and beauty issues, especially in the Transplant scenario.

This study used eight adapted moral dilemma stories from Greene *et al.*<sup>8</sup>, classified into two

main categories: utilitarian and non-utilitarian, with subsets of high- and low-conflict personal and impersonal moral dilemmas. Three dilemmas were chosen: *Walkway*: W. found an out-of-control wagon about to hit five workers. He pushed a burly stranger off the walkway to save their lives, aware that the stranger would die, to save the workers, with a utilitarian judgment rate of 12%; *Transplant*: L., doctor. Upon finding five patients on the verge of death, she opted to save their lives with organ transplants. To do so, she sacrificed a healthy donor, with 21% of utilitarian judgments; *Lost Wallet*: C. found a wallet with money belonging to a rich person. Tempted by financial difficulties, he considered returning the wallet without the money to pay off his debts, with 16% utilitarian judgments. Besides the stories of the dilemmas, the participants were also invited to respond to the Brazilian version of three psychosocial scales. The first scale was the Moral Identity Scale, validated for the Brazilian context<sup>9</sup>, which assesses moral identity-related characteristics. The second scale was the Racial Identification Scale, adapted and validated for the Brazilian context, which assesses the level of racial identification and attitude towards the self-declared ethnic group<sup>10</sup>. The third scale was the Internal and External Motivation Scale for Prejudice Control, which assesses internal and external motivation to control prejudice<sup>11</sup>, translated and modified into Portuguese<sup>12</sup>.

Furthermore, sociodemographic data such as gender, age, schooling, skin color, city of residence, sexual orientation, marital status, religion, and religiosity level were collected from the participants to characterize better the group participating in the study.

#### Data collection and analysis procedures

Data were collected from May to July 2020 by disseminating the research link on social media and the first author's email. Participants evaluated pictures in three moral dilemma scenarios and answered questions about these situations. Data were analyzed to understand relationships between ethnicity, attractiveness, moral judgment, and psychological factors using statistical analyses, including ANOVA and ANCOVA. SPSS and JASP software packages were used for the analyses. The results are detailed in the following sections.

## Results and discussion

The study sample effectively consisted of 333 people living in Brazil; 73.04% were women, and 26.96% were men. Regarding ethnicity, 35.11% identified themselves as white, 25.07% as Black, and 39.81% as mixed race. Regarding sexual orientation, 78.61% were heterosexual, 2.11% lesbian, 8.43% bisexual, and 6.93% gay. Regarding religion, 62.09% said they followed some religious beliefs, while 37.61% said they had no religion. Age ranged from 18 to 80 years, with a mean of 36 years and seven months and SD=12.3 years. The random distribution of participants was as follows: (a) 165 participants with pictures of men with a Europeanized profile; (b) 167 with pictures of men with an Africanized profile in the Walkway scenario (low-conflict); (c) 185 with pictures of women with a Europeanized profile; (d) 147 with pictures of women with an Africanized profile in the Transplant scenario (high-conflict); (e) 177 with pictures of faces with a Europeanized profile; and (f) 155 with pictures of faces with an Africanized profile in the Lost Wallet scenario.

This section presents the results obtained while analyzing the data generated by the "Impression Formation" research, in which four hypotheses were tested. These results are presented in the following sessions, following the order in which we tested the study's hypotheses mentioned above.

#### Hypothesis testing results and discussion (H1)

Here, we will present the results obtained by testing the hypothesis that the answers will follow the following order regarding moral decision-making judgment:

Faces with a Europeanized ethnic profile and increased physical attractiveness level will have a more significant agreement in the assessment of moral decision-making than faces with a Europeanized ethnic profile and reduced physical attractiveness level, just as faces with an Africanized ethnic profile and increased physical attractiveness level will have a more significant agreement in the assessment of moral decision-making than faces with an Africanized ethnic profile and a reduced physical attractiveness level.

In the statistical analysis of this study, repeated measures of ANOVA were performed to investigate the impact of the presentation of faces on responses evaluating moral decision-making. The results revealed a statistically significant ef-

fect of the presentation of the faces on the participants' responses ( $F(1,321)=29.450$ ;  $p<.001$ ;  $\eta^2=0.084$ ), which indicates that the way the faces were presented had a measurable impact on participants' moral evaluations.

Furthermore, the analysis identified a main effect of the interaction between the ethnic profile of the face and the manipulated physical attractiveness level ( $F(1,321)=4.799$ ;  $p<.029$ ;  $\eta^2=0.013$ ), suggesting that these two factors interact in ways that affect moral evaluations.

The specific results showed that the mean assessment of moral decision-making was higher when the participants were exposed to the face of a man with a Europeanized ethnic profile and a reduced physical attractiveness level compared to the faces of a man with a Europeanized ethnic profile and an increased physical attractiveness level. These differences are illustrated in the graph presented in Figure 2.

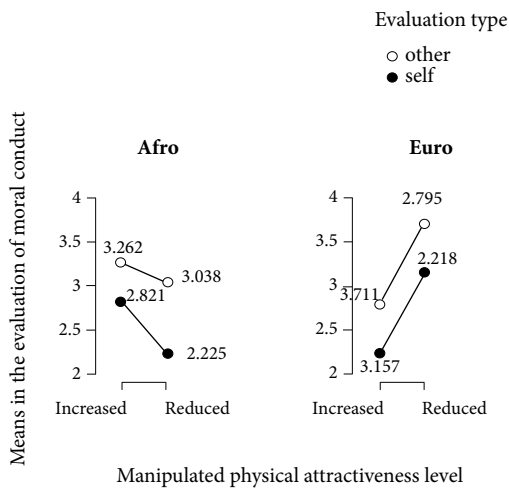
These findings suggest that participants were more tolerant when morally judging positively the action of taking a life when the target who made the moral decision was not physically attractive or did not have the same ethnicity as them. This finding is consistent with the literature on the Walkway moral dilemma. One would expect to observe a strong tendency for partic-

ipants to judge the action for rewards as morally correct, which is known as the "satisficing effect" and is the idea that sacrificing one life to save others is morally acceptable in extreme situations<sup>13,14</sup>. Additionally, studies have shown that the physical characteristics of the victim and rescuer can influence the moral decision-making of the participants. For example, a study<sup>15</sup> showed that activation of the dorsolateral prefrontal region of the brain, associated with logical thinking, was more significant when participants viewed pictures of attractive victims compared to less attractive victims.

We should underscore that the literature on moral dilemmas has shown the influence of factors such as emotion, intuition, and cognitive and cultural aspects on moral judgment<sup>16</sup>. Studies also indicate that physical appearance plays a vital role in how people evaluate the morality of actions<sup>17</sup>.

However, the results of the ANOVA repeated measures in the Transplant moral dilemma scenario did not show significant differences between the percentage of moral judgment of the image presented and the percentage of the respondent's moral judgment. This fact suggests that, in this specific scenario, variations in face presentation did not significantly affect participants' moral evaluations. The results of this study did not show a significant tendency of the respondents' moral judgment towards themselves or the target in a moral dilemma scenario ( $F(1,321)=1.955$ ;  $p=.163$ ;  $\eta^2=7.316 \times 10^{-4}$ ). However, the means indicated a possible tendency towards a less moral judgment of the situation as a whole. This lack of effect can be impacted by several factors, including the type of dilemma and the situation's complexity. Regarding the dilemma in question (Transplant), previous research suggests that different dilemmas can generate different responses and moral judgments, depending on whether they involve conflicts between personal and social values or between equality and tutelage. The complexity and ambiguity of dilemmas can also affect people's information processing and moral decisions<sup>7</sup>. Additionally, emotion, intuition, and cultural factors play a role in assessing moral dilemmas<sup>18,19</sup>.

Concerning the impersonal Lost Wallet dilemma, the results also did not indicate significant effects of the manipulated variables (facial physical attractiveness, ethnic profile, and face gender) in assessing moral decision-making. Although previous studies have suggested the influence of these factors on social and moral assess-



**Figure 2.** Graph containing means for evaluating moral decision-making attributed to characters with an Africanized and Europeanized ethnic profile, with a reduced and increased level of facial physical attractiveness, as response to the target (other) and the participant, in the Walkway moral dilemma scenario.

Source: Authors.

ment<sup>20,21</sup>, no statistically significant differences were observed in this specific scenario.

### Hypothesis testing results and discussion (H2)

In this section, we present the data and discuss the results of testing the hypothesis that participants would tend to attribute greater positivity to the moral conduct of faces of the same gender and ethnic profile as theirs. An ANOVA was performed to assess whether factors of gender (man x woman) and the participant's self-declared skin color (Black x brown x white) would impact the judgment of the moral conduct of the targets in the Walkway moral dilemma scenario, and it was not significant [ $F(1,308)=.881$ ;  $p<.415$ ;  $\eta^2=0.006$ ]. The results of this ANOVA indicate no significant difference in the judgment of the moral conduct of the targets in the Walkway moral dilemma scenario regarding the participants' gender and self-declared skin color.

This may suggest that moral judgment is not influenced by participants' self-reported gender or skin color. However, we should remember that these results are specific to the Walkway moral dilemma scenario and do not necessarily apply to other situations or contexts. Moreover, other factors not considered in this analysis, such as the participants' age or political orientation, may have influenced the targets' moral estimates.

Despite the results found in this study, we should underscore that other studies have shown that gender and skin color may influence moral decision-making in other contexts<sup>22,23</sup>. Skin color can also influence the perception of guilt in court proceedings, leading to more diverse decisions for people with colored skin. We have some significant studies on the impact of gender and ethnicity on moral decision-making<sup>24,25</sup>.

Then, we analyzed the same factors in the Transplant moral dilemma scenario, checking whether there were significant differences in moral judgment between men and women of different racial belongings. ANOVA showed significant differences, but Turkey's test has not consistently confirmed these differences.

ANOVA was implemented to gauge whether gender (man x woman) and self-declared skin color (Black x brown x white) would impact the judgment of the moral conduct of the targets in the Transplant moral dilemma scenario, and it was significant [ $F(1,308)=3.007$ ;  $p<.051$ ;  $\eta^2=0.019$ ]. There were significant differences between men and women of different racial belongings in the percentage of the evaluation

of the characters' moral decision-making, observing a higher mean in the condition where white self-declared participants evaluated the moral decision-making of the target ( $M=2.563$ ;  $SD=2.863$ ) compared to white self-declared participants ( $M=1.563$ ;  $SD=2.047$ ).

The result of this ANOVA indicates a significant tendency for the participant's self-declared skin color and gender to affect the judgment of the moral conduct of targets in the Transplant moral dilemma scenario. In particular, the results suggest that white self-declared women tend to make more positive estimates of the target's moral decision than white self-declared men.

The results of this research suggest that there is an influence of gender and self-declared skin identity of participants in the moral judgment in the Transplant dilemma scenario (Figure 3). Previous studies have also found similar effects. For example, research on racial stereotypes has indicated that white people tend to make more negative estimates of individuals from minority ethnic groups compared to white individuals<sup>26,27</sup>. Moreover, studies have shown that white individuals tend to perceive the faces of Black individuals as more threatening and dangerous than the faces of white individuals, even if neutral pictures<sup>28</sup> are presented.

Regarding gender identity, studies suggest that women have greater sensitivity to realizing the emotions of others, which can lead to more benevolent judgments<sup>29,30</sup>. Men tend to be more likely to adopt a utilitarian perspective in their moral evaluations based on their decisions on cost-effectiveness<sup>31</sup>.

Moreover, studies on physical facial attractiveness have shown that people tend to make more favorable assessments of allegedly more attractive individuals<sup>32</sup>. However, the effects of facial attractiveness on moral assessment could be more precise and may depend on context and culture<sup>18</sup>.

Thus, the results of this research can be explained by a combination of these factors, including racial stereotypes, emotional sensitivity, and utilitarian perspectives. Nevertheless, we should emphasize that these conclusions are only provisional and depend on the dilemmatic context of our participants (in our case, the Transplant dilemma). Future studies are necessary to confirm these hypotheses. In this interim, we followed the analyses in another scenario, in the impersonal dilemma.

The ANOVA implemented to evaluate whether the assessment of moral decision attributed to the target suffered influences of self-declared

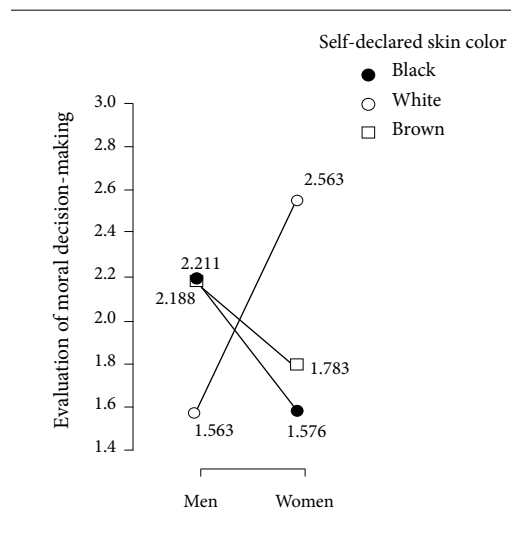
skin color (if white x brown x Black) and gender of the participant (man x woman) in the Lost Wallet moral dilemma scenario and it was not significant. This analysis resulted in a marginal effect due to the interaction between gender and self-declared skin color by participants [ $F(1.308)=2.634$ ;  $p=.073$ ;  $\eta^2=0.017$ ], observing a higher mean trend among the group of self-declared Black participants ( $M=3.550$ ;  $p=.88$ ) compared to the group of self-declared brown women participants ( $M=1.880$ ). The remaining comparisons did not produce significant differences. To better understand these results, we performed the post-hoc test, and the tendency for interaction between the participants' skin color and gender appeared again (Figure 4).

Some previous studies have found correlations between skin color and moral judgment, disagreeing with the results of the present study. For example, Fiske *et al.*<sup>33</sup> found that the faces of Black individuals were more often associated with immoral characteristics, affecting their treatment in everyday situations. Similarly, they found that people tend to judge Black individuals more severely than white individuals in moral judgment situations. In short, the results of the three moral dilemma scenarios (Walkway, Transplant, and Lost Wallet) suggest that the influence

of racial stereotypes on the evaluation of moral conduct may vary depending on the context.

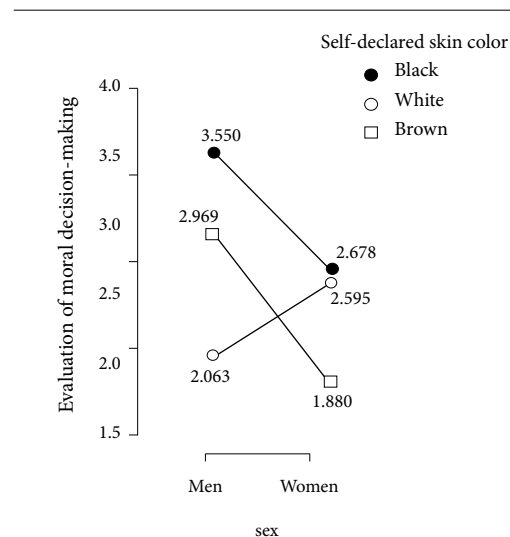
In the Walkway scenario, there was no significant difference in moral assessment based on the skin color and gender of the participants, indicating that racial stereotypes may not influence this context. However, significant differences were found in the Transplant scenario, with white women more positively evaluating the moral conduct of targets than white men, possibly due to racial stereotypes associating "white" with positive characteristics. There were no significant differences in the Lost Wallet scenario, suggesting that the influence of racial stereotypes on moral assessment may be more complex and dependent on the specific context.

Furthermore, an event related to identity and endogroup favoritism emerged, where Black participants attributed the highest means in moral assessment to a Black-faced character with high physical attractiveness in the impersonal moral dilemma scenario, which may be related to identification, attraction, or revulsion vis-à-vis the character or sympathy for specific physical characteristics (race x gender x attractiveness). However, we should emphasize that physical appearance does not always correlate positively with positive evaluations, and effects can vary per the



**Figure 3.** Graph containing mean evaluations of moral conduct by male and female participants, self-declared white, Black, and mixed race to the characters present in the low-conflict personal dilemma scenario (Transplant Dilemma).

Source: Authors.



**Figure 4.** Graph containing mean evaluations of moral conduct by male and female participants, self-declared white, Black and mixed race to the characters present in the impersonal dilemma scenario (Lost Wallet Dilemma).

Source: Authors.

cultural, social, and dilemmatic context. These results and other research suggest that physical appearance can affect people's perception of personality, moral behavior, and honesty. However, it is necessary to observe that the effects of physical appearance on perceptions may vary depending on the context.

### Results of the (H3) and (H4) hypotheses test

In this topic, we present the results obtained from the H3 hypothesis test, which is that participants with higher scores on the racial identity scale will tend to consider the actions of the characters with ethnic profiles similar to theirs as having greater moral conduct, regardless of whether the face in question has decreased or increased physical attractiveness. Next, we presented the hypothesis H4 test, in which we foresaw that participants with higher scores on the moral identity scale would suppress the effects of the constructs mentioned in hypotheses 1, 2, and 3.

A covariance analysis (ANCOVA) was performed to test the hypothesis that participants with higher scores on the racial identity scale would realize the actions of the characters with an ethnic profile similar to theirs as having greater moral conduct, regardless of variations in physical attractiveness.

ANCOVA was chosen as a statistical method to allow variable manipulation control, in this case, the physical attractiveness of the characters. Thus, it was possible to examine the relationship between racial identity and moral perception of characters' actions, considering the potential influence of physical attractiveness on participants' perception of this study, as shown in Table 1.

In the initial assessment, faces with Europeanized ethnic profiles and reduced physical attractiveness levels had, on average, significant values ( $p=.007$ ) only when the physical attractiveness and race factors interacted. Soon after, the result remained significant ( $p=.009$ ) after adjustment by the responses to the Racial Identification Scale, again only when interacting with the ethnic profile of the model and level of manipulated physical attractiveness factors. Even after adjustment by responses to the Moral Identity Scale, this relationship significantly influenced evaluation. In general, faces with Europeanized ethnic profiles and reduced physical attractiveness levels showed, on average, significantly higher values than faces with Africanized ethnic profiles and levels of increased physical at-

tractiveness ( $p=.014$ ). The apparent effect of the ethnic profile variable and physical attractiveness level escalates with the adjustment for the Motivation Scale for Internal and External Control of Prejudice of the participants. It has significantly higher values than Africanized ethnic profile faces and a level of increased physical attractiveness ( $p=.009$ ), according to Table 1.

This assessment is not processed in the same way in the setting of a high-conflict personal dilemma (Transplant dilemma), and there are no statistically significant initial means ( $p=.709$ ). This relationship did not significantly affect evaluation ( $p=.278$ ) even after adjustment by responses to the Moral Identity Scale. Then, after adjusting the responses to the Racial Identification Scale, the result did not show a significant value ( $p=.713$ ). Finally, we adjusted for the responses to the Motivation Scale for Internal and External Control of Prejudice, and the result remained unchanged ( $p=.678$ ). We had only women's pictures in this dilemma, while only men's pictures were used in the first.

However, we observed another flow of results in the impersonal dilemma scenario. In the initial evaluation, the men's faces with an increased physical attractiveness level had, on average, significant values higher than those of men and women with reduced physical attractiveness (AFF) ( $p=.005$ ). This pattern remained even after adjustment by responses to the Moral Identity Scale ( $p=.006$ ). Then, we adjusted for the responses to the Racial Identification Scale, and the result showed the greater statistical significance of the difference in the evaluation of the moral conduct of targets with reduced physical attractiveness, far below the mean responses attributed to the moral conduct of male characters and increased level physical attractiveness ( $p=.003$ ). Finally, we adjusted for responses to the Motivation Scale for Internal and External Control of Prejudice. The result remained unchanged ( $p=.010$ ), and the interaction between gender and the level of manipulated physical attractiveness remained with the same pattern of evaluations. These results can be viewed in Table 1.

We assumed that participants with higher scores on the moral identity scale would ponder on the characters' actions with ethnic profiles similar to theirs as having greater moral conduct, regardless of whether the face presented has reduced or increased physical attractiveness. Finally, considering the previously presented research that uses the concept of moral identity, we foresaw that participants with higher scores on the



**Table 1.** Results of the ANCOVA analysis of the answer to the question regarding oneself and the target, in the three moral dilemma scenarios and with the Moral Identity Scale (IDM), Racial Identification Scale (EIDR) and Motivation Scale for Internal and External Control of Prejudice (ECIP).

| Scenario           | S/Covariance   | (IDM)  | (EIDR)  | (ECIP)   |
|--------------------|--|--|---|--|
| <i>Walkway</i>     | $F_{(1), (319)} = 7.258$ ,<br>$p = .007$ ; $\eta^2 = .022$ | $F_{(1), (317)} = 6.167$ ,<br>$p = .014$ ; $\eta^2 = .019$ | $F_{(1), (319)} = 6.978$ ,<br>$p = .009$ ; $\eta^2 = 0.021$ | $F_{(1), (319)} = 6.873$ ,<br>$p = .009$ ; $\eta^2 = .021$ |
| <i>Transplante</i> | Not significant<br>$p = .709$                              | Not significant<br>$p = .278$                              | Not significant<br>$p = .713$                               | Not significant<br>$p = .678$                              |
| <i>Lost wallet</i> | $F_{(1), (315)} = 8.793$ ,<br>$p = .003$ ; $\eta^2 = .027$ | $F_{(1), (313)} = 7.597$ ,<br>$p = .006$ ; $\eta^2 = .023$ | $F_{(1), (315)} = 8.793$ ,<br>$p = .003$ ; $\eta^2 = .027$  | $F_{(1), (315)} = 6.718$ ,<br>$p = .010$ ; $\eta^2 = .020$ |

Source: Authors.

moral identity scale would suppress the effects of the constructs mentioned in hypotheses 1, 2, and 3. We also sought an explanatory model for evaluating moral conduct attributed to targets of different ethnic groups, and several levels of physical facial attractiveness, racial prejudice, physical attractiveness, and psychosocial context were the predictors.

Regarding specific results, the findings suggest that in the low-conflict personal moral dilemma scenario (Walkway dilemma), the faces with Europeanized ethnic profile and a reduced physical attractiveness level were assessed as having greater moral conduct than the faces with Africanized ethnic profile and increased physical attractiveness level. These results were found even after adjustment by responses to the Moral Identity Scale and Racial Identification Scale. These findings align with previous studies that have found that people tend to assign positive moral characteristics to attractive individuals with physical characteristics corresponding to dominant societal norms<sup>1,3,34</sup>.

In the high-conflict personal dilemma scenario (Transplant dilemma), the results did not point to any significant difference in the evaluation of the moral conduct of targets, suggesting that physical appearance was irrelevant in this context. In the impersonal dilemma scenario, physical appearance has influenced the assessment of the characters' moral conduct, indicating that physical appearance plays a different role depending on the context in which it occurs. The high-conflict personal dilemma scenario (Transplant dilemma) included other crossings reflected in the evaluation of the characters' moral conduct, which did not necessarily have to do with the mentioned variables manipulated in this study. This result aligns with previous studies that show that people

may be less likely to show prejudice in situations involving personal moral decisions<sup>35</sup>.

The results found in this study converge with the literature that highlights the influence of physical appearance on moral judgment. Previous research shows that physical appearance is an essential factor influencing prejudice and recognition of a particular individual<sup>36</sup>. Physical appearance can be used as an indicator of the race or ethnicity of individuals, which can lead to stereotypes and prejudice<sup>37,38</sup>. Studies also show that people tend to assign positive moral characteristics to allegedly attractive individuals<sup>1,2</sup>.

The study's results suggest that physical appearance, particularly facial attractiveness and ethnic profile, can affect the moral assessment of people in specific situations. Brazilian and international literature has pointed out that stereotypes related to race and physical appearance can affect people's behavior and moral judgment<sup>39,40</sup>.

## Conclusions

This study tested the mutual influence of racial stereotypes and facial physical attractiveness on the assessment of moral conduct. Moral judgment tasks were performed with targets of different ethnic profiles and increased or reduced physical attractiveness levels in different moral dilemmas. The results were different from what literature had already shown about the positive effects of facial physical attractiveness on the judgment of moral conduct.

The study revealed that the Europeanized face with a reduced physical attractiveness level was the most susceptible to a greater assessment of moral conduct, which contradicts the effect of the beauty stereotype on moral judgment, which

can be attributed to the moral flexibility and “whitening” ideology in Brazil, which associates characteristics of nobility and kindness to white skin color. Moreover, the interaction between racial stereotypes and facial physical attractiveness mainly affected the assessment of moral conduct attributed to the target, and it did not have the same effect when participants self-assessed their hypothetical moral conduct.

The results also indicated that the association between racial stereotypes and facial physical attractiveness in evaluating moral conduct occurred mainly in the low-conflict personal moral dilemma and impersonal moral dilemma scenarios but not in the high-conflict moral dilemma scenario, reflected in the Transplant dilemma. Furthermore, the self-declared skin color and participants’ gender also influenced the assessment of moral conduct in different contexts. In the low-conflict and impersonal personal dilemma scenario, participants tended to attribute

greater positivity to the moral conduct of the faces with the same gender and ethnic profile as theirs. In the Lost Wallet scenario, we identified a pattern that associated white with success and Blackness otherwise.

The study results indicate that decisions on moral assessment are not initially rational but are later justified. Racial and beauty stereotypes can be activated before rationalizing moral dilemmas. Moreover, racial identity and motivation to control prejudice influence moral assessment. The findings point to complex social dynamics involving stereotypes, facial attractiveness, and moral judgment, highlighting the need for investigation in several contexts and methodologies. Due to the limitations of software resources during research, virtual models can affect the interpretation of results, especially in the context of physical attractiveness, and this is a constraint on completely representing the actual experience in health and social life contexts.

## Collaborations

EV Santos: responsible for the literature review, elaboration of the methodology, collection and analysis of data, writing of the manuscript and conclusions. ME Pereira: contributed significantly to the design of the research project, guidance on methodology, critical review of the content and guidance in the analysis of results.

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