

Dangerous Decisions: Influence of Juror Attitudes and Defendant Appearance on Legal Decision-Making

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According to the dangerous decisions theory (Porter, S., & ten Brinke, L. (2009). Dangerous decisions: A theoretical framework for understanding how judges assess credibility in the courtroom. *Legal and Criminological Psychology*, 14(1), 119–134), intuitive evaluations of facial trustworthiness influence the interpretation of evidence presented in courtroom settings. This study examined the role of individual differences in this process. Participants were presented with crime narratives, accompanied by a photograph of the supposed defendant that was previously rated as highly trustworthy or untrustworthy. Following presentation of the evidence in each case, participants rated the defendant's culpability and then completed questionnaires assessing potential biases. Participants endorsing justice–fairness were more likely to exonerate an untrustworthy-looking defendant, but less likely to exonerate a trustworthy-looking one. Individuals who held a strong racial bias, by contrast, were less likely to be influenced by exonerating evidence, specifically for untrustworthy-looking defendants. These results suggest that faces varying in trustworthiness activate particular biases, and a tunnel vision approach to decision-making that may lead to wrongful convictions in a legal setting.

Key words: attitudes; bias; dangerous decisions; legal decisions; trustworthiness.

Based on another's facial appearance, observers rapidly make inferences about his/her character prior to any interpersonal interaction (Bull, 2006; Bull & Vine, 2003; Martelli, Majib, & Pelli, 2005; Willis & Todorov, 2006). One of the first inferences made upon viewing a stranger's face is an assessment of his/her trait trustworthiness; observers come to instantaneous (less than 1/10th of a second) and confident decisions about whether a face can be trusted (Bar et al., 2006; Willis & Todorov, 2006), based on cues gleaned from facial structure.

Evaluations of the trustworthiness of both male and female faces are based on a three-dimensional model relating to the face's structure: perceived dispositional valence (i.e., the trait-face structure suggests anger, happiness, etc.), dominance and attractiveness (Oosterhof & Todorov, 2008; Porter, ten Brinke, & Mathesius, unpublished). For example, facial characteristics such as large round eyes, high eyebrows and a small chin are considered baby-faced qualities, and are typically associated with kindness, warmth and honesty (Berry &

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McArthur, 1986; Berry & Zebrowitz-McArthur, 1988; Zebrowitz, Voinescu, & Collins, 1996).

These evaluations play a major role in subsequent decisions about others in various interpersonal contexts (Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006; Olivola & Todorov, 2010) and can contribute to prejudice and/or discrimination (e.g., Porter & ten Brinke, 2009). In legal settings, such evaluations can hold tremendous consequences. For example, individuals with perceived baby-faced qualities receive relatively lenient sentences (Berry & Zebrowitz-McArthur, 1988), while attractive defendants are perceived as more honest (Zebrowitz et al., 1996) and are less likely to be deemed guilty than their unattractive counterparts (Kulka & Kessler, 1978). Studies of racial bias in the USA have shown that males rated as more stereotypically Black are more likely to be sentenced to death, compared with their less stereotypical counterparts (Eberhardt et al., 2006). Further, certain faces are considered congruent with specific types of crimes (Bull & McAlpine, 1998; Dumas & Testé, 2006), and have perceived stereotypical features of rapists, armed robbers or murderers. Defendants whose faces are congruent with facial characteristics commonly associated with these crimes are more likely to be found guilty in legal settings, regardless of weak evidence (Dumas & Testé, 2006). And defendants with an “untrustworthy”-looking face are convicted of murder (by mock jurors) based on less incriminating evidence than trustworthy-looking defendants (Porter, ten Brinke, & Gustaw, 2010).

Dangerous Decisions Theory

Although interpersonal evaluations based on appearance can be consequential, evidence suggests that split-second evaluations of trustworthiness are often inaccurate, providing only a slight advantage over

guessing (ten Brinke & Porter, 2011). Porter, England, Juodis, and ten Brinke (2008) asked participants to rate the trustworthiness of violent America’s Most Wanted criminals and comparatively trustworthy philanthropists. Participants were able to discriminate group membership only slightly above the level of chance. Similarly, Bond, Berry, and Omar (1994) found that appearance-based impressions of honesty accounted for only a “kernel of truth” (4% of the variance) in the target’s actual willingness to engage in deceptive behavior (see also Zebrowitz et al., 1996).

Although trustworthiness assessments are of questionable validity, it has been proposed that they set in motion a powerful decision-making process, characterized by natural human biases, tunnel vision and overconfidence. The dangerous decisions theory (DDT; Porter & ten Brinke, 2009) predicts that interpersonal judgments of trustworthiness occur instantaneously upon seeing a face (Willis & Todorov, 2006), which subjectively may be experienced as “intuition”. While it is possible that these intuitive judgments are correct, incorrect impressions can lead to biased (or “dangerous”) decisions concerning the target. This rapid process of trustworthiness assessment likely served the function of reducing danger to our human ancestors. While the initial assessment is implicit, the high-stakes involved with trustworthiness decisions in a court setting are likely to generate an increasingly conscious engagement of the defendant’s characteristics. However, the initial impression of a defendant’s trustworthiness is likely to have an enduring influence on the manner in which new information concerning the target is interpreted and assimilated by judges and jurors. Specifically, the initial evaluation can influence subsequent inferences concerning the defendant (or other witness) by making decision-making about him/her increasingly irrational (Kahneman & Tversky, 1982). This can then generate a

non-critical, “tunnel vision” assimilation of potentially ambiguous or contradictory evidence concerning the defendant. This is akin to setting a “confirmation bias” into effect, wherein jurors seek to confirm their initial evaluation of trustworthiness (or untrustworthiness) by attending only to information that supports this notion (e.g., Pyszczynski & Greenberg, 1987; Snyder & Stukas, 1999).

In a study of criminal investigators, Ask and Granhag (2007) found strong support for this “asymmetrical skepticism”, the tendency to be more skeptical about evidence that runs counter to one’s prior belief than evidence consistent with the belief. While most judges and jurors probably are circumspect in their efforts to make the correct decisions concerning credibility, it may be possible to work too hard in this context; high motivation can exacerbate the level of bias in decisions about credibility. Porter, McCabe, Woodworth, and Peace (2007) identified a motivational impairment effect such that a high level of motivation in a deception detection task was negatively associated with accuracy (also see Ask & Granhag, 2007). A high level of motivation such as that felt by a judge or juror, coupled with the complexity of credibility assessment, may serve to increase the power of the initial perception of trustworthiness and create tunnel vision decision-making. DDT is related to several other theoretical frameworks, including the “blame-validation” process suggested in Alicke’s (2000) culpable control theory and the motivationally driven inferences proposed in Tetlock and colleagues’ conception of the “intuitive prosecutor” (Tetlock et al., 2007). The fundamental assumption of the culpable control theory is that evidence concerning negative events is scrutinized for its contribution to personal control (culpability) and is spontaneously evaluated for its favorableness (Alicke, 2000; Alicke, Buckingham, Zell, & Davis, 2008).

These spontaneous evaluations then incite a blame-validation process, wherein evidence concerning the event is reviewed in a manner that favors ascribing blame to the defendant who evokes the most negative affect. This is similar to the assumption underlying the tunnel vision induced by initial impressions of trustworthiness in the DDT model. Another theory based on a framework of attributions of responsibility, the “intuitive prosecutor” (Tetlock et al., 2007), explores how individuals come to make character attributions for norm violators. According to this framework, we have evolved to be social watchdogs that punish norm violators and have developed a “fair-but-biased-yet-correctible” (FBC; Tetlock, 2002) method of dealing with them. The FBC method suggests that we see ourselves as fair individuals, yet we are often biased decision-makers, and when we notice our own biases we attempt to self-correct our cognitions. The self-correction piece of this framework has not been adequately explored in a legal decision-making context. Research to date has not found a spontaneous end to the tunnel vision that ensues in many legal proceedings. Unlike DDT, these frameworks are based on the notion that we have a desire to infer personal control and responsibility to others’ behavior (similar to the “just world” framework; e.g., Hafer & Bègue, 2005). DDT simply suggests that, based on evolutionary mechanisms, we make intuitive judgments of “friend or foe” based on appearance that lead to biased decision-making. Although they differ in a variety of ways, all of these theories suggest that implicit cognitions and values influence the interpretation of defendant information and lead to generally adverse attributions of blame. DDT is favorable over competing theories for explaining bias in legal decision-making for this study because it explains the isolated effects of appearance on judicial biases.

While DDT predicts only adverse consequences of incorrect implicit evaluations, previous research has also suggested that implicit judgments can be accurate. Work by Ambady and colleagues on “thin slices” of human behavior has demonstrated that people are able to form accurate impressions that predict certain ecologically valid outcomes from brief observations (Ambady, 2010), including sexual orientation (Ambady, Hallahan, & Conner, 1999) teaching performance (Ambady & Rosenthal, 1993) and deception (e.g., Ambady & Rosenthal, 1992). This effect is generally small but significant (average $d = 0.39$), and is impeded by tasks that interfere with intuition, such as deliberation or active judgments of character (Ambady, 2010; Hartwig & Bond, 2011). While these findings are important, literature to date that has examined the accuracy and implications of trustworthiness judgments of faces per se has found detrimental effects of these (often incorrect) judgments in forensic settings.

Research addressing the assessment of factors underlying these initial assessments of trustworthiness and specific consequences for legal decision-making is critical. In the first study of DDT (Porter et al., 2010), pilot participants rating photos of Caucasian male faces on several features including trustworthiness, attractiveness, baby-facedness, facial symmetry and kindness. Faces deemed to be the most and least trustworthy were then used for the main study. Participants were presented with a case description of a crime, along with a photo of a trustworthy- or untrustworthy-looking male face. Finally, participants were provided with 10 increasingly incriminating pieces of evidence and asked to endorse either a guilty or not guilty verdict (based on a reasonable doubt criterion) following the presentation of each. Participants required less evidence to reach a guilty verdict for defendants with untrustworthy-looking faces than those with

trustworthy-looking faces. This experimental format provides the template for the present study.

The present study examined the effects of participant biases and attitudes towards the legal system, and how they relate to the DDT and legal decision-making. Findings to date suggest that untrustworthy-looking faces put into motion a form of tunnel vision decision-making that exaggerates the importance of incriminating evidence and undervalues that of exculpating information (Porter & ten Brinke, 2009). However, we think that it is likely that an individual juror’s beliefs and biases also may contribute to this process. To test this hypothesis, we included two measures that assess attitudes and biases towards the legal system: the Pretrial Juror Attitude Questionnaire (PJAQ; Lecci & Myers, 2008) and the Justice–Vengeance Scale (JVS; Ho, ForsterLee, ForsterLee, & Crofts, 2002). The PJAQ and JVS were selected over other instruments because they comprehensively assess factors of direct relevance to legal decision-making, and fit within the time constraints of this study. Both questionnaires measure attitudes related to the justice system, which can affect both the initial assessments of trustworthiness (e.g., racial bias) and the manner in which evidence is interpreted. In line with the DDT pattern found by Porter et al. (2010), it was expected that jurors who endorsed intuition and “facial profiling” (e.g., high scorers on subscales of the PJAQ and JVS assessing interpersonal biases and subjective reasoning) would remain confident in the defendant’s guilt even in the presence of exonerating evidence. Further, it was expected that participants who recognized the detrimental effects of legal decision-making (e.g., wrongful convictions), and scored high on measures of justice–fairness (and other scales evaluating unbiased legal attitudes) are more likely to strive for objectiveness in their decisions.

Pilot Study

A pilot study was conducted to obtain ratings on several facial characteristics of a set of photographs of female faces, after which the most and least trustworthy-looking faces were used as defendants in the main study. Ratings were compared with those of male faces used in Porter et al. (2010) to examine the similarity of facial characteristics across gender.

Method

Participants

Participants in the pilot study were 20 individuals from a convenience sample (10 females, 10 males), with an average age of 22.9 years ($SD = 3.56$).

Materials

Twenty photographs of Caucasian females were chosen from the Karolinska set of photographs (Lundqvist, Flykt, & Ohman, 1998) to be rated on various characteristics. The images depict female faces between the ages of 20 and 30 exhibiting neutral expressions. Twenty male images from the same image set were previously rated in a pilot study for Porter et al. (2010). Participants viewed the female faces in an online computer-based experiment.

Procedure

Participants were presented with all 20 faces in a computer-generated randomized manner, and were asked to rate each face on attractiveness and trustworthiness on a seven-point scale (1 = *not at all*, 7 = *very*). Additionally, participants provided an estimate of the age (1 = 20, 7 = 50+), aggressiveness (1 = *not at all*, 7 = *very*) and likelihood of committing a crime (1 = *not at all*, 7 = *very*) for each face. Because only a limited set of images was available in the database used for this study, faces were selected from the larger

database based on the researcher's impressions of trustworthiness. Computer-generated faces examining the specific facial features associated with trustworthiness have already been conducted (e.g., Oosterhof & Todorov, 2008), but lack the realism and generalizability associated with actual photos.

Results

Based on average trait inferences made by the pilot study participants, the most and least trustworthy-looking faces were chosen from the rated images to be used in the main study. The most trustworthy female face ($M = 4.45$, $SD = 1.23$) and the least trustworthy female face ($M = 3.00$, $SD = 1.21$), were significantly different on trustworthiness ratings, $t(19) = 3.51$ ($p < .01$).

Trustworthy-looking faces were considered to be more attractive ($t(19) = 3.75$, $p < .001$), less aggressive ($t(19) = 2.79$, $p < .01$) and less likely to commit crime ($t(19) = 2.84$, $p < .01$) than the perceived untrustworthy faces. The two male faces taken from the Porter et al. (2010) study were also previously reported to also differ significantly. The most trustworthy male face ($M = 4.70$, $SD = 0.99$) and least trustworthy male face ($M = 2.63$, $SD = 1.45$) were rated as significantly different from one another on trustworthiness, ($t(26) = 6.99$, $p < .01$). Other attributions based on the face, including attractiveness, baby-facedness, symmetry and kindness also were rated as significantly different (p values $> .05$). Figure 1 depicts the final faces selected for the main part of this study.

Main Study

Method

Participants

Participants in the main study were 98 adults (79 female), including both

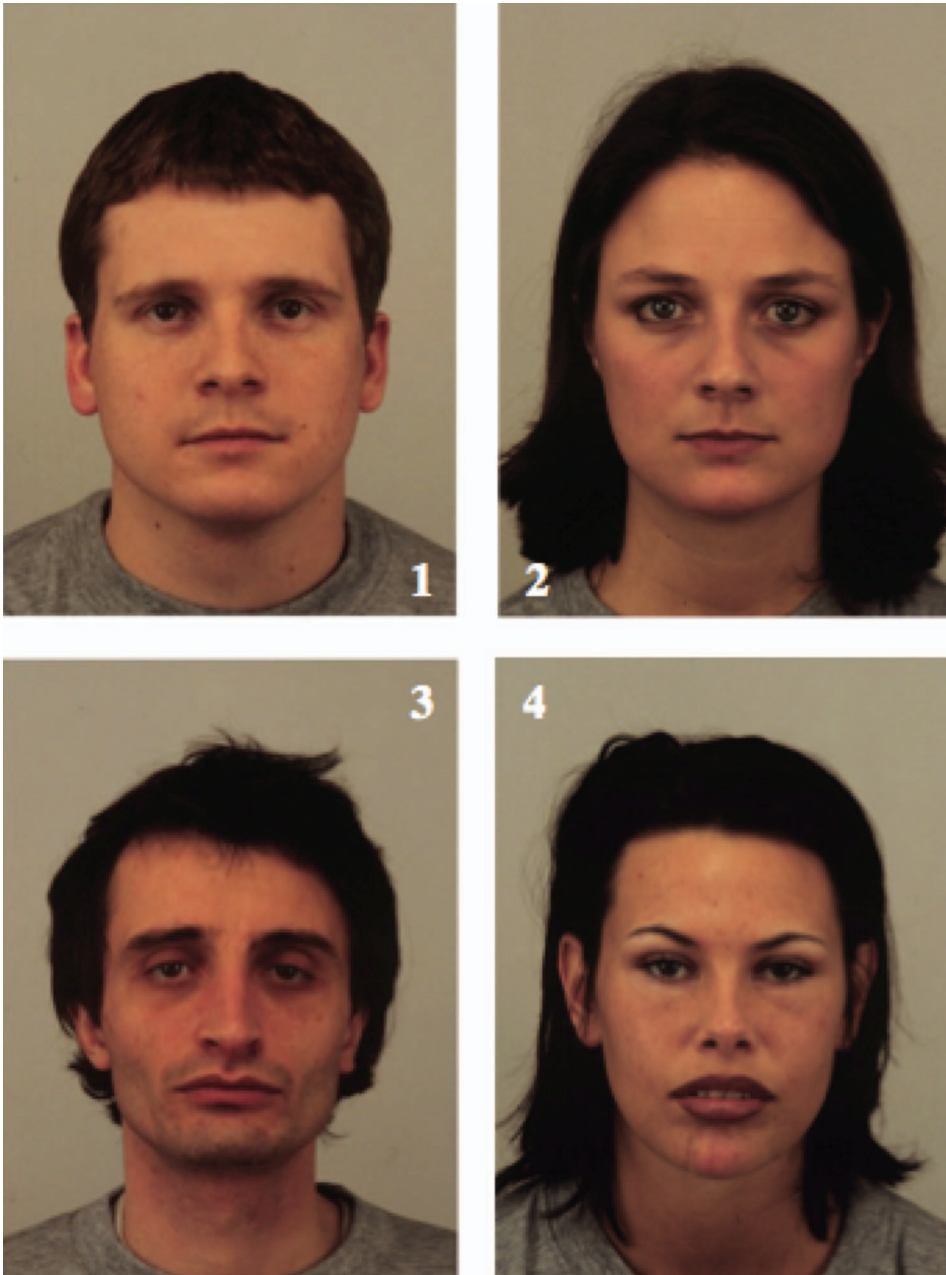


Figure 1. Depiction of face stimuli used in main study. Images 1 and 2 depict the trustworthy male and female faces. Images 3 and 4 depict the untrustworthy male and female faces.

university students and other individuals from western Canada, with an average age of 21.27 years ($SD = 4.64$). Participants

were offered a choice of one class credit or \$10 as compensation for participating.

Materials

All participants viewed and rated the entire set of 20 female images used in the pilot study on trustworthiness, attractiveness, etc. Because of the number of evaluations, participants were asked to provide for each image, and the number of images, it is unlikely that this process made our hypotheses transparent or adversely affected the validity of our results. This is substantiated by results found by Porter et al. (2010), who assigned only half of their participants to provide similar pre-ratings and found no effect of this prior exposure on subsequent legal decision-making. This re-evaluation of images by all participants served to confirm that the images we selected were consistently rated as very trustworthy and very untrustworthy.

The female photographs that had been rated as being the lowest and highest in trustworthiness from the pilot study were selected for use in the main study, along with the most and least trustworthy male photographs from Porter et al.'s (2010) initial study. Two serious crime vignettes (robbery and murder; violent attack resulting in murder), and two less serious crime vignettes (car theft; fraud), as well as 11 pieces of evidence for each crime, selected for Porter et al.'s (2010) study were utilized.

Two questionnaires were used in our main study to assess participant attitudes and biases towards the legal system. These questionnaires were presented upon completion of all other study components so as to not bias participants and to keep the premise of our experiment from being too transparent. While it is possible that evaluating evidence in a case prior to completing these questionnaires may have some effect on scores, the researchers believe this is still an important construct to examine. The PJAQ (Lecci & Myers, 2008) identifies individual differences in legal attitudes that assess how trial information is processed in legal decision-

making. Lecci and Myers (2008) suggest that there are certain biases and beliefs that influence how final legal judgments are reached, and the PJAQ targets these specific attitudes to investigate the effects they have on legal decisions. This 29-item questionnaire includes the following subscales: conviction proneness, system confidence, cynicism toward the defense, racial bias, social justice and innate criminality. The presence of these six subscales has been established by means of cross-validation (i.e., all fit indices are above .90) on samples summing 600 participants (Lecci & Myers, 2008). The JVS (Ho et al., 2002) assesses two predominant motives (justice and vengeance) that may be aroused by the legal system. Ho et al. (2002) suggest that it is difficult to establish whether decisions are guided by justice or vengeance motives. Thus, the subscales are designed to investigate the two motives separately and distinguish between their influences on legal decisions. The JVS is a 16-item questionnaire and includes four subscales: vengeance-sentence, vengeance-emotion, justice-fairness and justice-legal. These four subscales have shown to be reliable (i.e., Cronbach's alpha for each subscale is at least .70), and have been cross-validated (i.e., all fit indices are close to or above .9) in two samples totaling over 500 participants.

Procedure

Before commencing with the experiment, all participants were asked to rate the pilot study images on various attributes, including trustworthiness and attractiveness.

Participants were randomly assigned to one of two crime seriousness conditions: Serious (murder) or Less Serious (fraud, theft), a between-subjects variable. In addition, participants were randomly assigned into one of two defendant gender conditions (male, female), also a between-subjects variable. Defendant trustworthiness

was a within-subjects variable, such that each participant viewed one trustworthy and untrustworthy-looking face. After participants were randomly assigned into these conditions, they were presented with one of two counterbalanced crime scenarios (according to their condition) in which one of the photographed defendants (randomly assigned) had been tried for the crime (construed as being real) in a foreign jurisdiction.

Before presentation of the evidence, the legal concept of reasonable doubt was displayed on the computer screen to the participants who were to act as jurors, and they were asked to apply it in their decision-making. Participants then were presented with the pre-arranged evidence set corresponding to their case file. Each case included 11 pieces of evidence; the first five were ambiguous (e.g., “John was in the same city as the crime on the day of the murder”); the next five were increasingly incriminating (e.g., “The accused had scratches on his hands and arms”); and the final piece of evidence offered was thoroughly exonerating (e.g., “DNA evidence from underneath one of the victim’s fingernails did not match the accused”). After each piece of evidence was presented, the participant was instructed to select a verdict of not guilty or guilty beyond a reasonable doubt. They also were asked to rate their confidence in the verdict. Next, the second case and photograph were presented in the same manner.

Participants then were asked to fill out the two questionnaires that examine their attitudes and biases towards the legal system.

Results

A manipulation check was conducted to confirm that the selected photographs were rated similarly on trustworthiness in the main and pilot studies. Paired samples *t*-tests were conducted to ensure that

trustworthy and untrustworthy-looking faces were rated significantly differently. There were significant differences between the trustworthy and untrustworthy female faces, $t(97) = 3.20$, $p < .01$, and between the trustworthy and untrustworthy male faces, $t(97) = 3.53$, $p < .01$. Further, as desired, there was no overall significant difference in the trustworthiness ratings of male and female faces (for the two most and least trustworthy photos). We also examined whether there was an interaction between trustworthiness and sex in the prediction of trustworthiness ratings. An analysis of variance involving one within-subjects factor (high vs. low trust) and one between-subjects factor (sex) revealed no significant interaction effect, $F(1,45) = 0.78$, $p = .781$.

Independent samples *t*-tests were then conducted to determine whether the findings from the main study and the pilot study converged. There were no significant differences between the main study and pilot study in the trustworthiness ratings of trustworthy and untrustworthy male faces, or in the ratings of trustworthy female faces. However, untrustworthy female faces were rated less trustworthy in the main study than in the pilot study, $t(97) = 2.61$, $p < .05$. All of these were desirable findings that indicate strong manipulation of the variables of interest. Crime seriousness had no effect on verdicts for trustworthy or untrustworthy defendants and so these conditions (severe and less severe crimes) were collapsed.

Pearson correlations were computed to explore the relationships between questionnaire subscales and decision-making when presented with exonerating evidence for trustworthy and untrustworthy-looking defendants (see Table 1).¹ When participants were presented with an untrustworthy-looking defendant, PJAQ system confidence, racial bias and JVS vengeance–emotion scores were positively correlated with guilty verdicts, regardless of

Table 1. Correlations (*r*) between PJAQ and JVS subscales and verdict decisions (0=*not guilty/exonerate*, 1=*guilty*) after presentation of exonerating evidence.

	Trustworthy defendant	Untrustworthy defendant
PJAQ		
System Confidence	.15	.21*
Conviction Proneness	.15	.16
Cynicism Toward the Defense	.00	.13
Racial Bias	-.10	.25*
Social Justice	.10	-.18
JVS		
Vengeance-Emotion	-.05	.25*
Vengeance-Sentence	-.01	.16
Justice-Fairness	.05	-.29**
Justice-Legal	-.02	-.08

p* < .05; *p* < .01.

exonerating evidence to the contrary, *p* values < .05. By contrast, JVS justice-fairness scores were negatively correlated with guilty verdicts following exonerating evidence for untrustworthy-looking defendants, *p* < .05. The other subscales of the JVS and PJAQ were not significantly correlated with legal decision-making for untrustworthy faces. When participants were presented with a trustworthy-looking defendant, there were no significant relationships between the questionnaire subscales and verdict choice after presentation of exonerating evidence.

The Generalized Estimating Equations (GEE) procedure in STATA 12 (www.stata.com/) was then used to conduct binary logistic regressions predicting verdict (innocent or guilty) after exonerating evidence was presented. Defendant trustworthiness was a within-subjects predictor variable, and scores on the PJAQ and JVS were used as potential moderators of the influence of defendant trustworthiness on verdict. We explored the nature of significant interactions for these variables by

graphing the logistic regression equations for the two levels of trustworthiness in relation to the continuous PJAQ and JVS moderator variables. The margins procedure in STATA 12 was used to assess simple main effects and the points along moderator variable continuums for which there were significant differences between the high and low trustworthiness conditions.

The first GEE binary logistic regression involved defendant trustworthiness, PJAQ racial bias, and their interaction as predictors of verdict. The effect for defendant trustworthiness did not reach significance, *p* > .05, but there was a significant effect for PJAQ racial bias, $\beta = -.18$, $\chi^2(N = 86) = 3.79$, *p* = .05, odds ratio (OR) = .83. Higher scores on the PJAQ racial bias subscale were associated with an increased probability of convicting the defendant.

There also was a significant interaction between racial bias and defendant trustworthiness in the prediction of verdict, $\beta = .29$, $\chi^2(N = 86) = 4.28$, *p* < .05, OR = 1.34. This interaction indicates that the slopes for racial bias in the prediction of verdict were significantly different for the high versus low trustworthiness conditions. A plot of the interaction appears in Figure 2. When defendant trustworthiness was low, the effects for racial bias were dramatic and the simple slope was significant, *z* = 2.25, *p* = .024. Higher scores on racial bias were associated with higher probabilities of a guilty verdict. In fact, the highest probability of a guilty verdict occurred when racially biased participants evaluated a defendant with a low trustworthiness face. By contrast, when defendant trustworthiness was high, the simple slope for racial bias was negative, but not statistically significant, *z* = 1.41, *p* = .16. In other words, for defendants with trustworthy faces, there was a non-significant tendency for higher scores on racial bias to be associated with lower guilty verdict

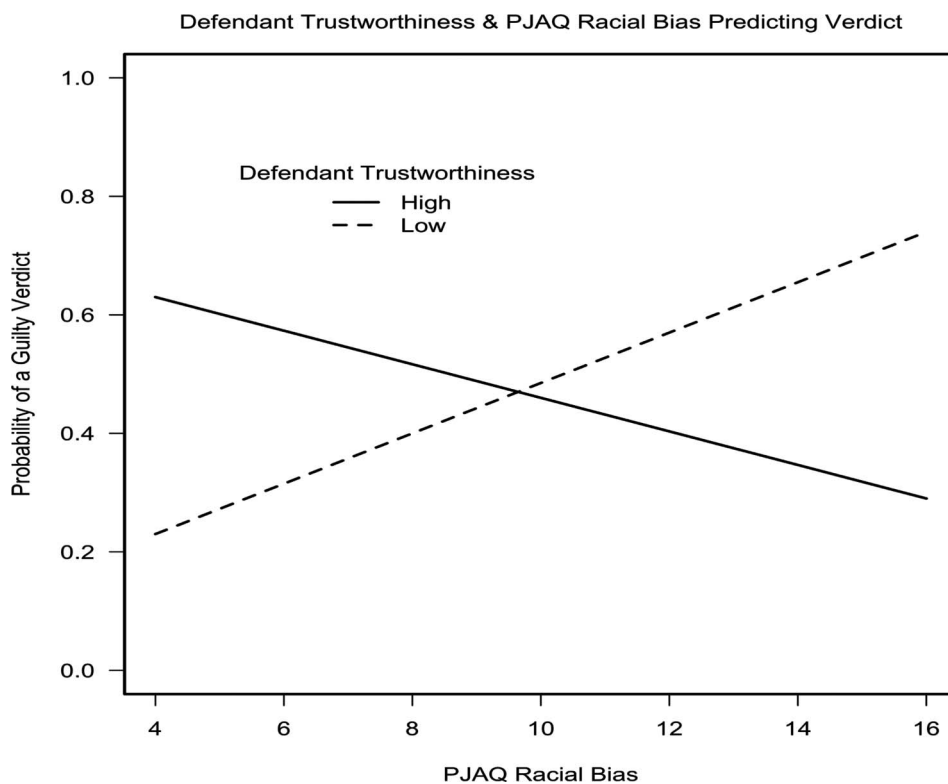


Figure 2. Trust and PJAQ racial bias predicting the probability of a guilty verdict after presentation of exonerating evidence.

probabilities, and for low scores on racial bias to be associated with higher guilty verdict probabilities. The STATA 12 margins procedure revealed that the discrepancies between the two logistic regression lines in Figure 2 were statistically significant at or above PJAQ racial bias scores of 12.7 and at or below PJAQ racial bias scores of 4.15.

The second GEE binary logistic regression involved defendant trustworthiness, JVS justice–fairness, and their interaction as predictors of verdict. In this case, untrustworthy defendants were more likely to be found guilty after exonerating evidence than were trustworthy defendants, $\beta = 4.98$, $\chi^2(N = 86) = 4.18$, $p < .05$, $OR = 145.68$. High scores on the JVS justice–fairness scale were associated with fewer guilty verdicts than were low scores,

$\beta = .177$, $\chi^2(N = 86) = 6.26$, $p < .05$, $OR = 1.19$. There also was a significant interaction between defendant trustworthiness and JVS in the prediction of verdict, $\beta = -.226$, $\chi^2(N = 86) = 3.94$, $p < .05$, $OR = .80$. A plot of this interaction appears in Figure 3. Once again, the biggest effect (steepest slope) occurred in the low trust condition, $z = 2.61$, $p = .009$. Participants who scored low on justice–fairness were the persons most likely to provide guilty verdicts. Participants who scored high on justice–fairness were much less likely to provide guilty verdicts when evaluating the same faces. The simple slope for JVS justice–fairness and verdict was weak and not significant in the high trust condition, $z = 0.65$, $p = .514$. The discrepancies between the two logistic regression lines in Figure 3 were statistically

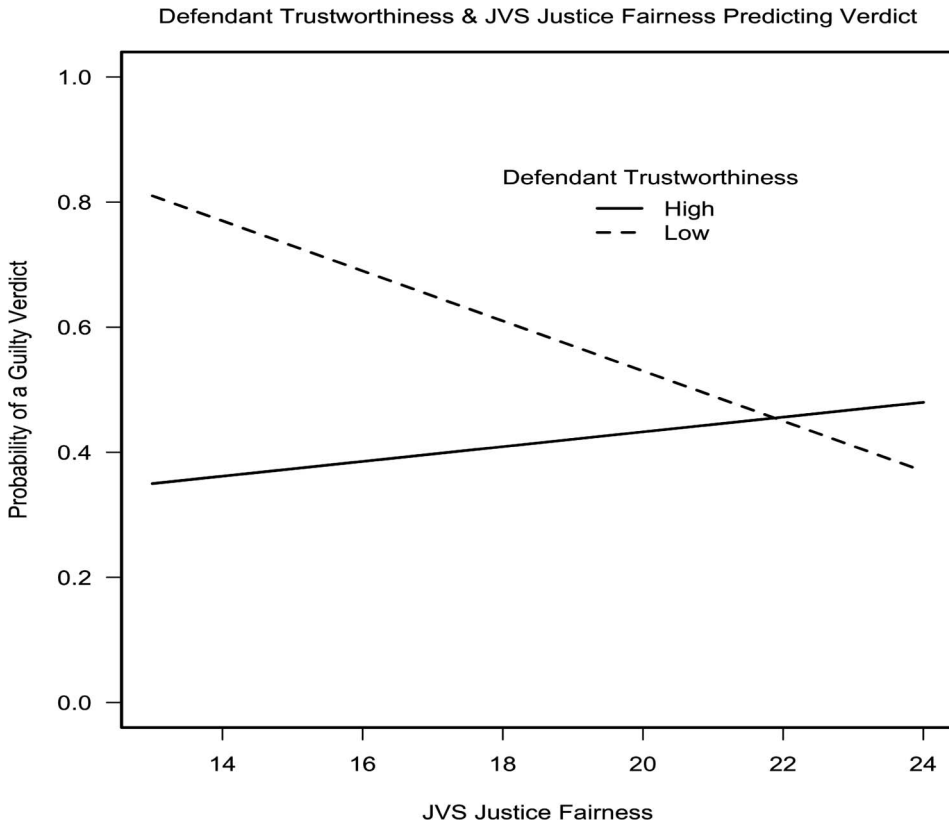


Figure 3. Trust and JVS justice–fairness predicting the probability of a guilty verdict after presentation of exonerating evidence.

significant at or below JVS justice–fairness scores of 17.

The Pearson correlation between PJAQ racial bias and JVS justice–fairness was $-.33, p = .002$, indicating some overlap between the two attitude variables. The above GEE analyses were therefore both run again to determine whether the effects for PJAQ racial bias remained significant after controlling for JVS justice–fairness, and to determine whether the effects for JVS justice–fairness remained significant after controlling for PJAQ racial bias. The answer was “yes” in both cases. The pattern of significant and non-significant effects did not change for these covariate analyses. Finally, GEE binary logistic regression analyses for the JVS system confidence and vengeance–emotion

subscales did not reveal significant interactions with defendant trustworthiness.

Discussion

As predicted by the DDT, participants attributed more positive traits to trustworthy faces relative to untrustworthy faces. Trustworthy faces were considered to be more attractive, kinder, less aggressive, and less likely to commit crimes. In addition, individuals endorsing justice–fairness were more likely to exonerate a perceived untrustworthy defendant. In contrast, more racially biased participants were less likely to be influenced by exonerating evidence for an untrustworthy-looking defendant. It is also important to note that although there was some overlap

between our racial bias and justice–fairness variables, the effects for each variables remained the same when statistically controlling for the other variable. We have thus found two variables with independent effects on legal decision-making, and we suspect that other attitude variables may be discovered in further research.

While the observed effects were statistically significant, they were not large and practical applications of the findings should be approached with caution. Our research indicates a detrimental effect of trustworthiness evaluations on legal decision-making. But our findings regarding when, and for whom, these effects are strongest should be replicated and explored in further research. The results are nevertheless in accordance with previous work on tunnel vision, and they suggest that untrustworthy faces activate personal biases related to the importance of appearance-based assessments in legal decisions. The subsequent tunnel vision reduces the likelihood that exonerating evidence will be considered in evaluations of guilt or innocence (Vrij, 2008), which ultimately may contribute to wrongful convictions. We suspect that the effect sizes that were observed in the present laboratory, on-paper study are likely underestimates of the effect sizes for these same variables that occur for real-world crimes and defendants, where more is on the line and everything is more salient.

Previous research has found that defendant race is a strong predictor of legal decision-making (e.g., Sweeney & Haney, 1992). For example, Eberhardt et al. (2006) found that males rated higher in stereotypical blackness were more likely to be sentenced to death for a murder compared with less stereotypically Black defendants. Here, racial bias was a strong negative predictor of exoneration when presented with an untrustworthy-looking defendant. Participants obtaining high scores on racial bias were less likely to

render a verdict of innocence in general after being presented with exonerating evidence, despite the fact that all defendants were Caucasian. Racial bias apparently encouraged tunnel vision decision-making, biasing decisions regarding untrustworthy-looking defendants. This effect is presumed to be associated with a general reliance on “gut instinct”, stereotyping and a tendency to “judge a book by its cover” among racially biased individuals. Lecci and Myers (2008) found that the PJAQ racial bias scale was a consistent predictor even when race or other background was not specified. Therefore, they suggested that the racial bias scale is related to a more general tendency to make (unfounded) inferences about defendants. It is also possible that the untrustworthy faces appeared racially different to racially biased persons, even though the skin color of the faces was white (see the faces in Figure 1). In contrast, individuals who scored higher on the justice–fairness subscale of the JVS were more likely to exonerate perceived untrustworthy-looking defendants. Given that this scale measures objectivity in legal decisions, it was expected that individuals who endorsed these unbiased and objective attitudes would be more likely to exonerate perceived untrustworthy faces. However, people more often exonerated defendants when they were perceived as untrustworthy compared with trustworthy, suggesting that individuals who strive for objectivity may overcompensate in an attempt to make a fair and unbiased decision. These individuals may be overly conscious of the need for objectivity in legal decisions, which may be potentially biasing their verdicts in the opposite direction.

More generally, the DDT model was supported by the main effect of trustworthiness. Trustworthy defendants were far more likely to be exonerated than untrustworthy defendants when variance

associated with personal beliefs (i.e., justice–fairness) had been accounted for. Further, trustworthy-looking defendants also were rated highly on various positive traits (e.g., kind and unlikely to commit crime), while untrustworthy-looking individuals were assigned predominantly negative traits (e.g., unkind and likely to commit crime). In general, the results suggested that character evaluations, based in part on facial appearance, interact with various biases and attitudes to shape the manner in which evidence of an individual is assessed.

Limitations of this study include the use of self-reports. Both the PJAQ and the JVS are self-report questionnaires that could be susceptible to underestimates or overestimates on various items. For example, certain questions pertain to the importance of being objective when making legal decisions or sentencing a guilty defendant. Such questions may be subject to social desirability biases, although this may be mitigated by the anonymity and confidentiality assured to participants. Alternatively, implicit measures of racial bias may measure the construct more accurately, as it is based on reactions of participants that are difficult to control (Klauer & Teige-Mocigemba, 2007). Another potential limitation to this study was the use of still photographs and written descriptions of the evidence. To enhance ecological validity, further research could utilize a videotaped trial to imitate a more realistic legal scenario. Further, the exclusive use of Caucasian defendants in this study should be extended by including variations of defendant race in future studies, especially given that we found that a strong impact of racial bias on legal decision-making.

The research presented here supports the DDT and the notion that legal decision-makers formulate implicit assumptions regarding defendant culpability based on facial appearance. These findings

have important implications for understanding errors that happen in criminal trials and manner in which false convictions might occur.

Note

1. Potential defendant gender differences were also explored; however, no significant relationships emerged.

References

- Alicke, M.D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin, 126*, 556–574, doi:10.1037/0033-2909.126.4.556.
- Alicke, M.D., Buckingham, J., Zell, E., & Davis, T. (2008). Culpable control and counterfactual reasoning in the psychology of blame. *Personality and Social Psychology Bulletin, 34*, 1371–1381, doi: 10.1177/0146167208321594.
- Ambady, N. (2010). The perils of pondering: Intuition and thin slice judgments. *Psychological Inquiry, 21*, 271–278, doi: 10.1080/1047840X.2010.524882.
- Ambady, N., Hallahan, M., & Conner, B. (1999). Accuracy of judgments of sexual orientation from thin slices of behavior. *Journal of Personality and Social Psychology, 77*, 538–547, doi: 10.1037/0022-3514.77.3.538.
- Ambady, N., & Rosenthal, R. (1992). Thin slices of expressive behavior as predictors of interpersonal consequences: A meta-analysis. *Psychological Bulletin, 111*, 256–274, doi:10.1037/0033-2909.111.2.256.
- Ambady, N., & Rosenthal, R. (1993). Half a minute: Predicting teacher evaluations from thin slices of nonverbal behavior and physical attractiveness. *Journal of Personality and Social Psychology, 64*, 431–441, doi: 10.1037/0022-3514.64.3.431.
- Ask, K., & Granhag, P.A. (2007). Motivational bias in criminal investigators' judgments of witness reliability. *Journal of Applied Social Psychology, 37*, 561–591.
- Bar, M., Neta, M., & Linz, H. (2006). Very first impressions. *Emotion, 6*, 269–278, doi: 10.1037/1528-3542.6.2.269
- Berry, D., & McArthur, L. (1986). Perceiving character in faces: The impact of age-related craniofacial changes on social perception. *Psychological Bulletin, 100*, 3–18, doi: 10.1037/0033-2909.100.1.3.

- Berry, D., & Zebrowitz-McArthur, L. (1988). What's in a face? Facial maturity and the attribution of legal responsibility. *Personality and Social Psychology Bulletin*, *14*, 23–33, doi: 10.1177/0146167288141003.
- Bond, C.F., Berry, D.S., & Omar, A. (1994). The kernel of truth in judgments of deceptiveness. *Basic and Applied Social Psychology*, *15*, 523–534, doi:10.1207/s15324834baspl1504_8.
- Bull, R. (2006). Detecting lies and deceit: The psychology of lying and the implications for professional practice. *Journal of Community & Applied Social Psychology*, *16*, 166–167.
- Bull, R., & McAlpine, S. (1998). Facial appearance and criminality. In A. Memon, A. Vrij & R. Bull (Eds.), *Psychology and law. Truthfulness, accuracy and credibility* (pp. 59–76). London: McGraw-Hill.
- Bull, R., & Vine, M. (2003). *Attractive people tell the truth: Can you believe it?* Poster presented at the Annual Conference of the European Association of Psychology and Law, Edinburgh, UK.
- Dumas, R., & Testé, B. (2006). The influence of criminal facial stereotypes on juridic judgments. *Swiss Journal of Psychology*, *65*, 237–244.
- Eberhardt, J.L., Davies, P.G., Purdie-Vaughns, V.J., & Johnson, S. (2006). Looking death-worthy: Perceived stereotypicality of black defendants predicts capital-sentencing outcomes. *Psychological Science*, *17*, 383–386, doi:10.1111/j.1467-9280.2006.01716.x
- Hafer, C.L., & Bègue, L. (2005). Experimental research on just-world theory: problems, developments, and future challenges. *Psychological Bulletin*, *131*, 128–167, doi: 10.1037/0033-2909.131.1.128.
- Hartwig, M., & Bond, C.R. (2011). Why do lie-catchers fail? A lens model meta-analysis of human lie judgments. *Psychological Bulletin*, *137*, 643–659, doi:10.1037/a0023589.
- Ho, R., ForsterLee, L., ForsterLee, R., & Crofts, N. (2002). Justice versus vengeance: Motives underlying punitive judgements. *Personality and Individual Differences*, *33*, 365–378, doi:10.1016/S0191-8869(01)00161-1.
- Kahneman, D., & Tversky, A. (1982). The psychology of preferences. *Scientific American*, *246*, 160–173.
- Klauer, K.C., & Teige-Mocigemba, S. (2007). Controllability and resource dependence in automatic evaluation. *Journal of Experimental Social Psychology*, *43*, 648–655.
- Kulka, R., & Kessler, J. (1978). Is justice really blind? The influence of litigant physical attractiveness on juridical judgment. *Journal of Applied Social Psychology*, *8*, 366–381, doi: 10.1111/j.1559-1816.1978.tb00790.x.
- Lecci, L., & Myers, B. (2008). Individual differences in attitudes relevant to juror decision making: Development and validation of the Pretrial Juror Attitude Questionnaire (PJAQ). *Journal of Applied Social Psychology*, *38*, 2010–2038, doi:10.1111/j.1559-1816.2008.00378.x.
- Lundqvist, D., Flykt, A., & Ohman, A. (1998). *The Karolinska Directed Emotional Faces*. Stockholm: Karolinska Institute, Psychology Section, Department of Clinical Neuroscience.
- Martelli, M., Majib, J.M., & Pelli, D.G. (2005). Are faces processed like words? A diagnostic test for recognition by parts. *Journal of Vision*, *5*, 58–70.
- Olivola, C.Y., & Todorov, A. (2010). Elected in 100 milliseconds: Appearance-based trait inferences and voting. *Journal of Nonverbal Behavior*, *34*(2), 83–110, doi: 10.1007/s10919-009-0082-1.
- Oosterhof, N.N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences of the United States of America*, *105*, 11087–11092, doi: 10.1073/pnas.0805664105.
- Porter, S., England, L., Juodis, M., & ten Brinke, L. (2008). Is the face a window to the soul? Investigation of the validity of intuitive judgments of the trustworthiness of human faces. *Canadian Journal of Behavioural Science*, *40*, 171–177, doi:10.1037/0008-400X.40.3.171.
- Porter, S., McCabe, S., Woodworth, M., & Peace, K.A. (2007). Genius is 1% inspiration and 99% perspiration? Or is it? An investigation of the effects of motivation and feedback on deception detection. *Legal and Criminological Psychology*, *12*, 297–309.
- Porter, S., & ten Brinke, L. (2009). Dangerous decisions: A theoretical framework for understanding how judges assess credibility in the courtroom. *Legal and Criminological Psychology*, *14*, 119–134, doi: 10.1348/135532508X281520.
- Porter, S., ten Brinke, L., & Gustaw, C. (2010). Dangerous decisions: The impact of first impressions of trustworthiness on the evaluation of legal evidence and defendant culpability. *Psychology, Crime & Law*, *16*, 477–491, doi: 10.1080/10683160902926141.

- Pyszczynski, T., & Greenberg, J. (1987). Toward an integration of cognitive and motivational perspectives on social inference: A biased hypothesis-testing model. In L. Berkowitz, (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 297–340). New York: Academic Press.
- Snyder, M., & Stukas, A.A. (1999). Interpersonal processes: The interplay of cognitive, motivational, and behavioral activities in social interaction. *Annual Review of Psychology*, 50, 273–303.
- Sweeney, L.T., & Haney, C. (1992). The influence of race on sentencing: A meta-analytic review of experimental studies. *Behavioral Sciences and the Law*, 10, 179–195.
- ten Brinke, L. & Porter, S. (2011, in press). Friend or foe? The role of intuition in interpersonal trustworthiness and vulnerability assessments. In Columbus, F. (Ed.) *Psychology of Intuition*. New York: Nova Science Publishers.
- Tetlock, P.E. (2002). Social functionalist frameworks for judgment and choice: Intuitive politicians, theologians, and prosecutors. *Psychological Review*, 109, 451–471, doi:10.1037/0033-295X.109.3.451
- Tetlock, P.E., Visser, P.S., Singh, R., Polifroni, M., Scott, A., Elson, S., Mazzocco, P., & Rescober, P. (2007). People as intuitive prosecutors: The impact of social-control goals on attributions of responsibility. *Journal of Experimental Social Psychology*, 43, 195–209, doi:10.1016/j.jesp.2006.02.009.
- Vrij, A. (2008). *Detecting lies and deceit: Pitfalls and opportunities* (2nd edn). New York: Wiley.
- Willis, J., & Todorov, A. (2006). First impressions: Making up your mind after a 100-ms exposure to a face. *Psychological Science*, 17, 592–598. doi:10.1111/j.1467-9280.2006.01750.x.
- Zebrowitz, L.A., Voinescu, L., & Collins, M.A. (1996). ‘Wide-eyed’ and ‘crooked-faced’: Determinants of perceived and real honesty across the life span. *Personality and Social Psychology Bulletin*, 22, 1258–1269, doi: 10.1177/01461672962212006.