



Master's Thesis

Perspective-taking through DialogueTrainer Simulations – A Viable Platform to Address Racial Bias?

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23/06/2022

Word Count: 8741 (incl references)

Manuscript is publicly accessible

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Acknowledgements

I would like to thank my supervisor, Dr. Baptist Liefoghe, for his advice and mentorship during this process. I am also extremely grateful for the support I received at DialogueTrainer, specifically Michiel Hulsbergen. I would also like to express my deep appreciation for my friends and family – their support and motivation has made this possible.

This Master's thesis for Utrecht University's Social, Health, and Organisational Master's programme was funded by DialogueTrainer.

Abstract

Simulations are growing in popularity -- their interactive nature, immersive characteristics, and ability to stimulate social influence make simulations a potential platform to address social issues, such as racism. DialogueTrainer is a company that creates conversation simulations so players can practice their communication skills. Research has shown that perspective-taking is a valuable method to reduce implicit racial bias, a relationship mediated by empathy. The present study investigated whether DialogueTrainer simulations are a viable platform to reduce implicit racial bias through perspective-taking methods. In an online study, participants (N = 128) were recruited via Prolific to engage in one of two perspective-taking conditions: (1) playing a DialogueTrainer simulation of a racially charged conversation or (2) reading a transcript of the racially charged conversation. Following these perspective-taking interventions, participants (a) completed an explicit bias questionnaire, (b) completed a perspective-taking questionnaire, (c) played the prisoner's dilemma to measure racial-economic trust, and (d) completed the Interpersonal Reactivity Index (IRI) to measure empathy. Data analysis revealed that racial-economic trust did not differ between the two conditions, and IRI empathy scores did not mediate this relationship. However, DialogueTrainer participants more strongly felt that the character experiencing racism was treated unfairly and had higher perspective-taking scores than those in the transcript. Although explicit bias scores did not differ between the DialogueTrainer and transcript conditions, explicit bias scores were negatively correlated with perspective-taking scores. In addition, exploratory analyses revealed that women had higher empathy scores, men more greatly tried to remain detached, and Belgian participants more strongly felt that the racist character was unbiased compared to Dutch participants. The results of this study indicate that DialogueTrainer is a

promising platform to allow players to experience unfair treatment resulting from bias. Future studies and further implications are discussed.

Keywords: DialogueTrainer, simulations, perspective-taking, implicit bias, explicit bias, racism, racial-economic trust, Dutch, Belgian, empathy, women, men

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Introduction

Simulations come in many forms, usually imitating a situation or process. This field is rapidly growing and has become increasingly used in psychology, mainly due to its immersive tendencies and ability to replicate social situations. As such, simulations are a promising tool to address pressing social issues like racism. Racial bias is prevalent in our daily lives, often psychologically impacting victims (Fernando, 1984, Houkamau, Storonge, and Sibley, 2017). Accounting for these negative effects, there is an urgent need for an intervention addressing racial bias that may be implemented quickly and cheaply to ensure its widespread distribution. Perspective-taking methods, following another person's perspective in a situation, have become a more popular tool to reduce participants' implicit bias in both racial and gender contexts (Todd et al., 2011; Davis et al., 2021; Drwecki et al., 2011; Hirsh et al., 2019; Matsuda et al., 2002; Vescio, Seschrist, and Paolucci, 2003). More recently, studies have found that depending on the perspective-taking platform, participants' implicit racial bias is differently impacted (Herrera et al., 2018). As such, the present study compares the use of a DialogueTrainer simulation and a transcript as perspective-taking mediums and examines their impact on participants' implicit racial bias, assessed by behavioural measures.

The theoretical framework behind the study will be addressed by first discussing immersion and social influence within simulations. Next, a summary of studies investigating the use of simulations to address racial bias is given, followed by an overview of DialogueTrainer. Finally, the present study exploring the use of DialogueTrainer to reduce implicit racial bias is explained.

Immersion and Social Influence in Simulations

A central aspect of simulations is immersion. Immersion refers to the degree to which an individual feels absorbed or engrossed in a particular experience (Witmer and Singer 1998).

They identified presence, a component of immersion, as the degree to which a player experiences being in a place or environment different from the one they are physically in (Witmer and Singer, 1998). Ermi and Mäyrä (2005) identified three components of immersion: sensory immersion (referring to the visual aspects of the simulation/game), challenge-based immersion (referring to the challenges a player faces and their skills), and imaginative immersion (referring to a player's identification with a character and getting absorbed by the narrative aspects of the game/simulation). Notably, players with greater perceived control over an avatar and environment reported a higher degree of self-rated immersion (Witmer and Singer, 1994).

Accounting for its immersive quality, it is no surprise that virtual contexts elicit social influence, such as in-group preferences, when the audience appears more realistic (Durnez et al., 2020; Slater et al., 2013). Interestingly, the social influence observed in the infamous Milgram (1974) study has been replicated in a Virtual Reality (VR) setting (Slater et al., 2006). This influence is no surprise considering that human-human relationships are translated into human interactions with avatars, a process triggered by avatars' visual characteristics (Reidl et al., 2011; Rickenberg and Reeves, 2000). For example, humans respond to praise and criticism from computers similarly to praise and criticism from humans (Nass, Steuer, and Tauber, 1994; Fogg and Nass, 1997).

Psychologists have found that because of their immersive and interactive nature, simulations are an effective scaffold to help individuals learn and explore how to manage their social anxiety (Ward et al., 2016). Notably, simulations also successfully replicated interactions with psychiatric patients, allowing students to practice interacting with patients and increasing their clinical skills (Lambert and Lenthall, 1988; Nel, 2010; Sheen et al., 2021). Within the context of therapy, simulations introduce trainees to the clients' perspectives, allowing them to

practice and improve their therapy skills (Glanz, Rizzo & Graap, 2003; Lambert, 1989; Walker, 2009).

Accounting for their successful implementation within the field of psychology and immersive quality, and capability to elicit social influence, simulations are a viable platform to address social behaviour, such as racial bias.

Addressing Racism through Simulations

Psychologists and researchers have examined two methods to reduce implicit racial bias: embodiment and perspective-taking. Embodiment refers to one's sense of their own body (Arzy et al., 2006; Ehrsson, Spence, and Passingham, 2004), with one study finding that participants may experience ownership of a rubber hand as they embody it (Longo et al., 2008). White participants who experienced embodied ownership over a dark-skinned rubber hand displayed decreased negative racial attitudes towards dark skin (Maister et al., 2013). More recently, this study was replicated in a virtual reality setting - white participants with a virtual black body displayed decreased implicit racial bias up to a week after the experiment (Banakou, Manumanthu, and Slater, 2016). These findings indicate that debiasing strategies may be applied in simulations to reduce implicit racial bias.

Perspective-taking is classified into two categories: imagining how you would feel in a particular situation (perspective-taking-self) or imagining how another individual feels in a situation (perspective-taking-other) (Todd et al., 2011). While both methods evoke empathy and elicit physiological and psychological individuals perceive the model to be experiencing, perspective-taking-self also evokes personal distress, which can elicit egoistic motivation (Batson, Early, and Salvarani, 1997). In addition, perspective-taking activates brain regions associated with emotional processing and cognitive regions responsible for distinguishing

between the self and other representations (Ruby and Decety, 2004). These findings imply that there is a neural mechanism behind empathy which allows individuals to recognize another person like the self while clearly distinguishing between the self and others.

Perspective-taking facilitates altruism, decreases aggression, and is associated with decreased stereotyping and prejudice (Batson et al., 1997; Batson et al., 2007; Galinsky, 1999; Richardson, Green, and Lago, 1998; Vescio, Sechrist, and Paolucci, 2003). More specifically, perspective-taking methods are associated with lower implicit bias, both in racial and gender-related contexts, an effect mediated by empathy (Davis et al., 2021; Drwecki et al., 2011; Hirsh et al., 2019; Matsuda et al., 2002; Vescio, Seschrist, and Paolucci, 2003). A study by Kaatz et al. (2017) found that an educational video game about racial bias increased players' perspective-taking and promoted bias literacy, a step towards reducing racial bias.

While perspective-taking is effective in both textual and visual aspects (Todd et al., 2011), the degree to which it elicits empathy and influences bias may differ depending on the platform used. For example, participants who experienced homelessness in a VR task experienced greater empathy and longer-lasting positive attitudes towards them than participants who were in a narrative perspective-taking condition (Herrera et al., 2018). The interactive features of VR may explain this - high interactivity is associated with greater empathy (Hand and Varan, 2008). Additionally, participants do not have to imagine another person's perspective in VR – they directly experience it and can focus on their reaction – a beneficial feature considering the cognitive load perspective-taking requires (Davis et al., 1996; Herrera et al., 2018; Oh et al., 2016; Roxβnagel, 2000).

Unfortunately, VR is not easily accessible to the masses due to its high price (Avila and Bailey, 2014), meaning it is not the most viable perspective-taking platform. DialogueTrainer

has the characteristics that make VR an ideal platform: it is interactive and allows players to directly experience another person's perspective (Hand and Varan, 2008). Because of its affordable price and compatibility on laptops and mobile devices, DialogueTrainer simulations can be readily available to the masses.

DialogueTrainer

DialogueTrainer is a growing company based in the Netherlands which provides professionals with the opportunity to practice communication in various contexts through online simulations (DialogueTrainer, 2022). The conversation frameworks are based on scientific research, and the simulations they create are regularly improved through data analysis. In a simulation, players interact with an avatar, which speaks and expresses various emotions. Players respond to the avatar from three or more answer options, and the avatar will respond accordingly. At the end of the simulation, players are evaluated on different conversation parameters based on their answer choices (Figure 1).

Using response options in DialogueTrainer simulations can enhance feelings of autonomy (Ryan, Rigby, and Przybylski, 2006; Bao and Lam, 2008). In the context of video games, players who experience more autonomy experience more presence, a core component of immersion (Ryan, Rigby, and Przybylski, 2006). Consequently, a DialogueTrainer simulation can create an enjoyable experience for players. The availability of choices, human-like avatars, first-person perspective, and audio-visual components heightens players' sense of autonomy, physiological and emotional arousal, may elicit social influence (Banks and Bowman, 2016; Durnez et al., 2020; Papale, 2014; Ryan, Rigby, and Przybylski, 2006; Slater et al., 2013). Such characteristics, alongside its scientific foundation and availability, make DialogueTrainer a viable platform to address implicit racial bias in participants using perspective-taking methods.

Figure 1.

An overview of a DialogueTrainer simulation (Dutch).



Note. Feedback on the player's answer selection is given on the top left. Below that, the avatar's response is said. Then, the player's scores are presented on the top right, followed by a summary of the player's choices and subsequent feedback.

The Present Study

As discussed, perspective-taking has been found to induce empathy in individuals and lower their implicit racial bias (Todd et al., 2011). However, VR has been shown to maximise the effects of perspective-taking due to its interactivity and lower cognitive-load requirements (Herrera et al., 2018). Unfortunately, it may be inaccessible due to its high price (Avila and Bailey, 2014). In contrast, DialogueTrainer provides interactivity aspects that make VR an ideal platform and is more readily available to the masses at an affordable price (Hand and Varan, 2008).

Therefore, this study aims to investigate the effectiveness of DialogueTrainer simulations as a perspective-taking platform to reduce implicit racial bias by comparing its effects to

perspective-taking when reading a transcript of the simulation conversation. More specifically, participants were asked to take up the perspective of a Moroccan man, Mr Al-Karim, experiencing racial bias. They either played the simulation as Mr Al-Karim or read a transcript of the simulation and were asked to follow his perspective. Participants then completed an explicit bias and perspective-taking questionnaire, before playing the prisoner's dilemma to measure racial-economic trust. Finally, they completed the Interpersonal Reactivity Index (IRI).

The study investigated the following hypotheses:

H₁: Participants who play the DialogueTrainer simulation will exhibit higher perspective-taking scores than participants in the transcript condition. VR environments require less cognitive load to engage in perspective-taking (Davis et al., 1996; Herrera et al., 2018; Oh et al., 2016; Roxβnagel, 2000), making it easier for participants to focus on their reaction to the experience. Additionally, the interactive nature of DialogueTrainer can induce participants' sense of control, which helps immerse them in the scenario (Hand and Varan, 2008; Witmer and Singer, 1994).

H_{2A}: Participants in the DialogueTrainer condition will display higher rates of racial-economic trust and lower rates of explicit racial bias than participants in the transcript condition. Previous studies found that perspective-taking methods are associated with decreased prejudice and stereotyping and reduced implicit racial bias (Batson et al., 1997; Galinsky, 1999; Todd et al., 2011; Vescio, Sechrist, and Paolucci, 2003). In addition, Herrera et al.'s (2018) study found that perspective-taking platforms may differently influence intergroup attitudes.

H_{2B}: Replicating previous research, participants' racial-economic trust is mediated by IRI empathy scores. This hypothesis is based on previous studies identifying empathy as a mediator

of the relationship between perspective-taking and implicit bias (Davis et al., 2021; Drwecki et al., 2011; Hirsh et al., 2019; Matsuda et al., 2002; Vescio, Seschrist, and Paolucci, 2003).

Methods

Design and Procedure

Participants were recruited through Prolific and redirected to a Qualtrics survey. The study was funded by DialogueTrainer, allowing participants to be financially compensated for filling in the survey.

The experiment followed a yoked design. (N=64) participants were first recruited to participate in the DialogueTrainer simulation. Although individual playthroughs could not be viewed in this study, the number of times an answer option was selected was available. Based on this frequency, six transcripts of potential playthroughs were created and randomly presented to participants (N=64) in the text condition.

To avoid response bias, participants were informed that this was an interpersonal communication study. They then consented to participate in the study and answered a short demographic questionnaire before experiencing the intervention - either playing the DialogueTrainer simulation or reading a transcript. Next, participants' explicit bias scores and perspective-taking scores were recorded. Afterwards, participants were asked to play the prisoner's dilemma, which was labelled as a "communication game"— this assessed racial-economic trust using monetary incentives. Finally, participants completed the Interpersonal Reactivity Index (IRI) to measure their empathy and were presented with a study debrief and subsequent consent form.

Perspective-Taking Task

Both the DialogueTrainer and text transcript conditions followed the story of Mr Al-Karim, a Moroccan father. He is meeting with the school's disciplinary advisor, Eva Hendriks, to discuss the behaviour of his son Ahmed. During this interaction, Mr Al-Karim faces implicitly and explicitly racist comments from the disciplinary advisor about himself and Ahmed. Participants in the DialogueTrainer condition interacted with Eva Hendriks as Mr Al-Karim and experienced direct discrimination (see Appendix A for a screenshot of the DialogueTrainer simulation and Appendix B for instructions). However, participants in the text condition read a transcript of the simulation conversation and were asked to imagine how they would feel if they were Mr Al-Karim (see Appendix D – I for transcripts and Appendix C for instructions).

A Moroccan character was chosen because of the systemic discrimination they face in the Netherlands (Unnever, 2019) and Belgium (Alanya et al., 2017).

Respondents

Controlling for race, 128 White participants were recruited through Prolific. 64 participants identified as male, 63 as female, and 1 as non-binary. 66 (51.6%) of the participants were Dutch, and 62 (48.4%) were Belgian. Both Dutch and Belgian nationalities were recruited to increase the pooled sample. These two nationalities were selected because of their comparable patterns of discrimination toward Moroccans (Costa and De Valk, 2018; Hermans, 2006; Kesteloot and Cortie, 1998).

Participants in the DialogueTrainer condition were given (£2.70), while participants in the textual condition were given (£2.25). The monetary compensation between both conditions differed according to the time necessary to complete it. In addition, all participants were randomly entered into a raffle to win a €20.00 Bol.com gift voucher.

Instruments

Interpersonal Reactivity Index (IRI)

The IRI, developed by Davis (1980), was selected to measure participants' empathy. 28 items assess four components of empathy: perspective-taking scale (PT), fantasy scale (FS), empathic concern scale (EC), and personal distress scale (PD) (Davis, 1980). It has adequate construct validity, with good internal reliability for each dimension, a finding replicated across cultures (De Corte et al., 2007; Gilet et al., 2013; Hawk et al., 2013; Kang et al., 2009; Zhang, Dong, and Wang, 2010).

Economic Prisoner's Dilemma

The present study utilises the prisoner's dilemma to assess participants' racial-economic trust as a behavioural measure of implicit bias. The prisoner's dilemma was framed as a "communication game" for participants. They were told they would play against three players who had already participated in the study: a Dutch player (Max Hofmann), an Arab player (Saleem Haddad), and an ethnically ambiguous name (Tarik Bayan). Following loss aversion bias, the notion that the impact of losses outweighs the impact of gains (Kahneman, Knetsch, and Thaler, 1991), participants were told their number of raffle entries for a Bol.com voucher may decrease or remain the same, at the expense of their partner's entries. They could either "betray" their partner and decrease their raffle entries or "stay silent" and risk losing more of their own raffle entries (see Appendix J for instructions).

This setup is modelled after Stanley et al. (2011)'s study assessing economic trust. They showed participants a photograph of their 'partner' and asked if they believed their partners made an economically selfish or mutually beneficial economic decision. They found that IAT scores correlated with participants' race disparity in economic decisions.

Explicit Measures Questions and Manipulation Check

Participants were asked to rate the following questions relating to explicit bias:

- (E₁) I believe Mr Al-Karim was treated unfairly.
- (E₂) I believe Eva Hendriks was fair when handling this situation.
- (E₃) I do not believe Ahmed is a victim of this situation.
- (E₄) I believe Eva Hendriks' judgements are unbiased.

These ratings were on a seven-point Likert scale (1 = Very strongly, 7 = Very weakly), chosen because of the demonstrated test-retest reliability and greater choice options (Cox, 1980; Preston and Colman; 2000). These statements served as a more direct assessment of participants' beliefs and offered greater insight into their behavioural measures.

Following this, participants were asked to complete a perspective-taking questionnaire from Todd et al.'s (2011) study. This questionnaire consisted of three statements:

- (P_S) To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr Al-Karim?
- (P_O) To what extent did you try to imagine what Mr Al-Karim might be thinking, feeling, and experiencing?
- (P_D) To what extent did you try to be objective and emotionally detached?

These ratings were also on a seven-point Likert scale (1 = Very strongly, 7 = Very weakly).

Attention and Comprehension Checks

The study included two attention checks and a comprehension check in the transcript condition. Answering surveys can require cognitive effort, possibly leading participants to give suboptimal answers (Krosnick, 1991). Consequently, Instructional Manipulation Checks (IMC), which increase the statistical power and reliability of a dataset (Oppenheimer, Meyvis, and Davidenko, 2009), were implemented to draw participants' attention to the questions and to

exclude participants who failed the checks from data analysis. Following the advice of Oppenheimer, Meyvis, and Davidenko (2009), the first IMC was implemented earlier in the study under the manipulation check. The second IMC was presented under the IRI (see Appendix K for both IMCs).

The two comprehension checks implemented in the transcript condition ensured that participants understood the text. One question asked participants what occurred in the transcript, and another asked what a character's name is (see Appendix L for questions). It is worth noting that participants could reread and access the parts of the transcript to answer these comprehension checks.

Results and Analysis

Mean scale scores for the IRI (IRI_{AVG}) and explicit bias (E_{AVG}) were calculated. Note that for clearer data analysis, the perspective-taking and explicit bias items were recoded so that (1 = Very weakly, 7 = Very strongly). Furthermore, the collected data is available upon request.

The Shapiro-Wilkes test for normality was violated in this study, with $W(128)=.926$, $p<.001$ for explicit bias scores, $W(128)=.967$, $p=.003$ for IRI scores, and $W(128)=.766$, $p<.001$ for Perspective Other (P_O), $W(128)=.728$, $p<.001$ for perspective-taking-self (P_S), and $W(128)=.909$, $p<.001$ for remaining objective and detached (P_D). Consequently, non-parametric tests were carried out to analyse the collected data.

A Kruskal-Wallis-test was conducted to see whether participants in the DialogueTrainer condition engaged in greater perspective-taking than those in the transcript condition (H_1) and to see whether participants in the DialogueTrainer had lower explicit racial bias (H_2A). A mixed linear effect model was carried out to test whether DialogueTrainer participants displayed lower racial-economic trust than those in the transcript condition (H_2A) and whether the relationship

perspective-taking condition and racial-economic trust is mediated by IRI empathy scores (H₂B). Exploratory analyses to gain further insight into the collected data were also conducted.

Descriptive Data

The means and standard deviations for the continuous variables (i.e., explicit measures of bias, perspective-taking ratings, and IRI scores) by study condition are summarised in Table 1.

Perspective-taking scores – H₁

A Kruskal-Wallis test (Table 2) revealed that P_s scores, $\chi^2(1) = 10.8$ $p = .001$, and P_o scores, $\chi^2(1) = 6.85$ $p = .009$, were significantly different between both study conditions.

DialogueTrainer participants in greater perspective-taking-self, P_s, ($M = 6.42$, $SD = .730$) and perspective-taking-other, P_o, ($M = 6.34$, $SD = .821$) than participants in the transcript condition ($M = 6.03$, $SD = .796$) ($M = 6.02$, $SD = .864$).

Explicit Bias scores – H₂A

Although participants in the DialogueTrainer had lower average explicit bias scores (E_{AVG}) ($M = 1.99$, $SD = .708$) than those in the transcript condition ($M = 2.09$, $SD = .919$), the Kruskal-Wallis test (Table 2) showed no significant difference, $\chi^2(1) = .020$ $p = .888$. However, the test revealed a significant difference in E₁, $\chi^2(1) = 6.47$, $p = .011$. This means that participants in the DialogueTrainer more strongly agreed that Mr. Al-Karim was unfairly treated ($M = 6.50$, $SD = .735$) than participants in the transcript condition ($M = 6.19$, $SD = .852$).

Racial Economic-Trust and IRI empathy – H₂A and H₂B

A logistic mixed linear effect model was conducted to examine whether DialogueTrainer participants displayed lower racial-economic trust than those in the transcript condition (H₂A), and to examine whether the relationship perspective-taking condition and racial-economic trust is mediated by IRI empathy scores (H₂B). The test found no significant interaction effect

between study condition and racial-economic trust $\chi^2(1, N = 128) = .518, p = .472$. The test also found no significant interaction effect between average IRI scores (IRI_{AVG}), study condition, and racial-economic trust $\chi^2(1, N = 128) = .029, p = .864$.

However, the test revealed a marginal statistical significance in racial-economic trust among participants, regardless of condition. Participants were less likely to cooperate with Saleem Haddad, the Arab player, than the other players $\chi^2(1, N = 128) = .371, p = .054$.

Exploratory Analysis

Gender and Nationality differences

A Kruskal-Wallis test was carried out to compare gender and nationality differences in scores of the continuous variables. A summary of the analyses for study gender and nationality can be found in Tables 3 and 4, respectively.

Gender. The non-binary participant was excluded from this part of the data analysis, due to an insufficient sample size. However, the Kruskal-Wallis test found a significant effect of gender on IRI_{AVG} $\chi^2(1) = 8.13 p = .017$, with females scoring higher ($M = 3.64, SD = .351$) than males ($M = 3.45, SD = .429$). Gender differences were found in P_D $\chi^2(1) = 6.84 p = .033$, meaning that males were more likely to remain objective and emotionally detached ($M = 4.94, SD = 1.22$) than females ($M = 4.14, SD = 1.52$).

Nationality. The Kruskal-Wallis test revealed a significant effect of nationality on E_4 $\chi^2(1) = 6.83, p = .009$. This means that Belgian participants more strongly believed Eva Hendrik's judgements were unbiased ($M = 2.00, SD = 1.57$) than Dutch participants ($M = 1.61, SD = 1.45$).

Explicit bias, IRI empathy, and perspective-taking scores

A Spearman's rank-order correlation was conducted to assess the relationship between participants' IRI empathy scores, explicit bias scores, and perspective-taking scores (Table 5). No significant relationship was found between average explicit bias (E_{AVG}) and IRI scores (IRI_{AVG}), $r_s = -.083$, $N = 128$, $p = .349$. However, a significant weak negative correlation was found between IRI_{AVG} and how strongly participants believed Ahmed was a victim of this situation (E_3), $r_s = -.189$, $N = 128$, $p = .032$.

Perspective-taking-self (P_s) was found to significantly correlated with how unfairly participants felt Mr Al-Karim was treated (E_1) ($r_s = .490$, $N = 128$, $p < .001$), how fair Eva Hendriks was (E_2) ($r_s = -.284$, $N = 128$, $p = .001$), the extent to which Ahmed was a victim (E_3) ($r_s = -.264$, $N = 128$, $p = .003$), E_{AVG} ($r_s = -.274$, $N = 128$, $p = .002$), and IRI_{AVG} ($r_s = .206$, $N = 128$, $p = .020$).

Perspective-taking-other (P_o) displayed similar correlations with E_1 ($r_s = .407$, $N = 128$, $p < .001$), E_2 ($r_s = -.229$, $N = 128$, $p = .009$) E_3 ($r_s = -.263$, $N = 128$, $p = .003$) E_{AVG} ($r_s = -.242$, $N = 128$, $p = .006$), and IRI_{AVG} ($r_s = .225$, $N = 128$, $p = .011$). Further correlations were observed among the explicit bias measures, as seen in Table 5.

Discussion

This study aimed to examine whether perspective-taking platforms influence implicit racial bias differently. Although analysis revealed that participants in the DialogueTrainer condition had greater perspective-taking than those in the transcript condition (H_1), no significant difference between conditions was found in explicit bias or racial-economic trust (H_2A). Furthermore, empathy was not found to mediate the relationship between study condition and racial-economic trust (H_2B).

The data revealed four key results. First, H_1 is not rejected, meaning that players in the DialogueTrainer experienced greater perspective-taking than those who read a transcript of the simulation. Second, when experiencing bias through the DialogueTrainer simulation, participants more strongly felt that Mr Al-Karim was treated unfairly (E_1). Third, perspective-taking scores negatively correlated with explicit bias scores, meaning participants more engaged in perspective-taking were likely to display lower explicit bias scores. Finally, the perspective-taking platform does not significantly influence participants' racial-economic trust. However, a similar decreasing pattern cooperation was observed across conditions. Participants were most likely to betray Saleem Haddad, the Arab player, less likely to betray Tarik Bayan, the ethnically ambiguous player, and least likely to betray Max Hofmann, the Dutch player.

Exploratory analysis of the data collected in this study examined gender and nationality differences in IRI scores, explicit bias ratings, and IRI scores. It was found that women had higher average IRI scores than men, a finding consistent with previous studies (Mestre et al., 2009; Toussaint and Webb, 2005). Furthermore, men tried to remain objective and emotionally detached from the situation more greatly than women. Regarding explicit bias ratings, Belgian participants more strongly believed that Eva Hendriks' judgements were unbiased than Dutch participants. This finding can be better understood when examining national differences - Moroccans are better protected from institutional discrimination in the housing market in the Netherlands than in Belgium, and political racism is less prevalent in the Netherlands than in Belgium. (Kesteloot and Cortie, 1998; De Witte and Klandermans, 2000).

Taken together, this study's findings indicate that DialogueTrainer is a promising platform for perspective-taking. Furthermore, although a statistically significant difference in average explicit bias scores was not observed, participants in the DialogueTrainer condition

more strongly felt that Mr Al-Karim was treated unfairly. This finding suggests that DialogueTrainer is a viable platform to help users understand what it is like to experience racial bias. Such a finding is supported by previous research, which indicates that perspective-taking tasks which digitally create a situation (such as DialogueTrainer) are less cognitively taxing than those requiring participants to imagine being someone else. (Herrera et al., 2018; Oh et al., 2016; Zaki, 2014).

Whereas past researchers found that perspective-taking is associated with reduced implicit racial bias, a relationship mediated by empathy (Davis et al., 2021; Drwecki et al., 2011; Hirsh et al., 2019; Matsuda et al., 2002; Vescio, Seschrist, and Paolucci, 2003), the present study found no such effects. However, the study did find that perspective-taking scores were negatively correlated with explicit bias scores.

There are four potential explanations for these divergent findings. First, racial-economic trust was used as a behavioural measure of implicit racial bias. However, the story of Mr Al-Karim is unrelated to economic trust, so perspective-taking, in this case, may not have influenced participants' economic-behavioural choices. The explicit bias measures related to immediate aspects of the simulation, which is why these may have differed between conditions.

Second, it is possible that perspective-taking does not directly influence implicit bias but rather addresses explicit attitudes, as found in Aberson and Haag's (2007) study. Third, DialogueTrainer participants may have only been influenced by aspects of the simulation that directly affected them. More specifically, they experienced Mr Al-Karim's unfair treatment but were not directly affected by Eva Hendrik's judgements or evaluations of Ahmed.

Fourth, this is the first study to use a direct behavioural measure of implicit bias rather than the IAT. Considering the controversy surrounding the IAT (see Schimmack 2021) it is best

to use behavioural measures to assess implicit racial bias (Jost, 2019). Therefore, the issue with previous studies may lie within the use of the IAT. A reanalysis of IAT studies found no robust relationship between the IAT and discriminatory behaviour (Blanton et al., 2009), meaning that differences in IAT scores observed in previous studies do not necessarily reflect discriminatory behaviour changes.

Study Limitations, Implications and Future Research

There are three potential limitations to the study. Firstly, the study did not follow a fully yoked design – generating a transcript for individual playthroughs was not possible.

Consequently, only six transcripts of the interaction between the characters were distributed, which meant that only a limited combination of answer responses was distributed. This led to an inconsistency in the content between both study conditions. However, it is worth noting that the ending and Eva Hendriks' bias are consistent regardless of what Mr Al-Karim responds with - only minor changes to the sentencing structure and vocabulary to fit the context were made.

Second, the study did not measure participants' bias before the intervention.

Consequently, no concrete results about participants' change in bias can be made. Although the study did not find statistically significant differences in post-test bias measures, it is possible that the change in pre/post-test bias measures significantly differs between both conditions. Finally, the data collected relied on self-reports for perspective-taking, explicit bias measures, and the IRI, increasing the risk of self-reporting bias. Future studies should look at behavioural measures for perspective-taking and explicit bias, as was done in this study for implicit bias.

On a theoretical level, the study's results set the foundation for future research on the use of simulations to tackle bias. Presently, participants in both conditions had comparable explicit bias scores; however, it might be worth repeating the study to see the longevity of these results.

It is probable that DialogueTrainer participants sustain lower bias scores than transcript participants, as Herrera et al. (2018) found in a study comparing VR perspective-taking and traditional perspective-taking. Such research will give greater insight into the impacts of DialogueTrainer simulations and provide additional context for their potential use.

Furthermore, future research should explore whether different perspective-taking interventions influence participants' change in implicit bias. As discussed in the limitations, the present study accounted for post-intervention bias measures. Although there was no significant difference between the two study conditions, it is likely that the bias change significantly differs between them. Examining this limitation of the present study will also provide necessary insight into the potential uses of the DialogueTrainer simulations and their efficacy.

Despite these limitations, the results of this study suggest that DialogueTrainer is a promising platform for perspective-taking methods. These perspective-taking simulations allow players to understand what it feels like to experience bias - an essential step in debiasing strategies. For DialogueTrainer, the results of this study are promising. Moreover, they set the foundation to further develop debiasing simulations, which may be implemented at a larger scale.

Specifically, the simulation following Mr Al-Karim may be implemented among teachers to call attention to bias in educational settings. In addition to raising awareness, teachers will become more aware of what it is like to experience bias. Additional debiasing workshops should also accompany these simulations to address their implicit biases.

On a more general level, perspective-taking simulations can be implemented in various settings, including organisations seeking to improve their diversity and inclusion strategies. In

addition, making these simulations accessible may raise employee awareness about workplace bias.

Conclusion

The present study found that participants using the DialogueTrainer platform reported greater perspective-taking than participants reading a transcript of the simulation. Compared to participants in the transcript condition, DialogueTrainer participants more strongly felt that Mr Al-Karim, the character they were asked to take the perspective of, was treated unfairly. Although the perspective-taking platform did not significantly affect participants' racial-economic trust, self-rated perspective-taking was correlated with explicit bias measures. Exploratory data analysis found that women had greater IRI scores than men, while men more strongly tried to remain objective in the situation. The analysis also revealed that Belgian participants more strongly believed that Eva Hendriks was unbiased when handling the situation. Despite its limitations, the results of this study provide evidence that DialogueTrainer is a promising platform for perspective-taking and may be a valuable tool to help individuals understand what it feels like to experience bias.

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Tables**Table 1**

Means and Standard Deviations of Explicit Bias measures, Interpersonal Reactivity Index (IRI) scores, and Perspective-Taking Manipulation measures

Variable Item	Condition				Total	
	DialogueTrainer		Transcript		M	SD
	M	SD	M	SD	M	SD
I believe Mr Al-Karim was treated unfairly. (E ₁)	6.50	.735	6.19	.852	6.34	.808
I believe Eva Hendriks was fair when handling the situation. (E ₂)	1.69	.814	1.83	1.71	1.00	.911
I do not believe Ahmed is a victim in the situation. (E ₃)	2.92	1.90	2.95	1.00	2.94	1.80
I believe Eva Hendriks' judgements are unbiased. (E ₄)	1.84	1.75	1.75	1.38	1.38	1.51
Average Explicit Bias Scores (E _{AVG})	1.99	.708	2.09	.919	2.04	.818
Interpersonal Reactivity Index scores (IRI _{AVG})	3.54	.376	3.56	.437	3.55	.406

Variable Item	Condition					
	DialogueTrainer		Transcript		Total	
	M	SD	M	SD	M	SD
To what extent did you try to imagine what Mr Al-Karim might be thinking, feeling, and experiencing? (Po)	6.34	.827	6.02	.864	6.18	.855
To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr Al-Karim? (Ps)	6.42	.730	6.03	.796	6.23	.786
To what extent did you try to be objective and emotionally detached? (Pd)	4.84	1.32	4.55	1.48	4.69	1.41

Note. M and SD represent mean and standard deviation, respectively. For Explicit Bias and Perspective-taking measures data was recoded so that, 1 = very weakly, 7 = very strongly. For the Interpersonal Reactivity Index, 1 = Does not describe me well, 5 = Describes me very well.

Table 2

Analysis of the Kruskal Wallis-H test results on differences in Explicit Bias measures, Interpersonal Reactivity Index (IRI) scores, and Perspective-Taking Manipulation measures between study conditions.

	Study Condition	<i>N</i>	Mean	SD	χ^2	<i>p</i>
I believe Mr. Al-Karim was treated unfairly. (E ₁)	DialogueTrainer	64	1.50	.735	6.472	.011
	Transcript	64	1.81	.852		
I believe Eva Hendriks was fair when handling the situation. (E ₂)	DialogueTrainer		6.31	.814	.348	.555
	Transcript		6.17	1.001		
I do not believe Ahmed is a victim in the situation. (E ₃)	DialogueTrainer		5.08	1.897	.218	.640
	Transcript		5.05	1.713		
I believe Eva Hendriks' judgements are unbiased. (E ₄)	DialogueTrainer		6.16	1.645	.013	.910
	Transcript		6.25	1.380		
Average Explicit Bias Scores (E _{AVG})	DialogueTrainer		6.0117	.70771	.020	.888
	Transcript		5.9141	.91652		
Interpersonal Reactivity Index scores (IRI _{AVG})	DialogueTrainer		3.5374	.37642	.070	.791
	Transcript		3.5558	.43717		

	Study Condition	<i>N</i>	Mean	SD	χ^2	<i>p</i>
To what extent did you try to imagine what Mr. Al-Karim might be thinking, feeling, and experiencing? (Po)	DialogueTrainer	64	1.66	.821	6.846	.009
	Transcript		1.98	.864		
To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr. Al-Karim? (Ps)	DialogueTrainer		1.58	.730	10.761	.001
	Transcript		1.97	.796		
To what extent did you try to be objective and emotionally detached? (Pd)	DialogueTrainer		3.16	1.324	1.290	.256
	Transcript		3.45	1.479		

Note: For Explicit Bias and Perspective-taking measures data was recoded so that, 1 = very weakly, 7 = very strongly. For the Interpersonal Reactivity Index, 1 = Does not describe me well, 5 = Describes me very well.

Table 3

Analysis of the Kruskal Wallis-H test results on differences in Explicit Bias measures, Interpersonal Reactivity Index (IRI) scores, and Perspective-Taking Manipulation measures between gender identity

	Gender Identity	<i>N</i>	Mean	SD	χ^2	<i>p</i>
I believe Mr. Al-Karim was treated unfairly. (E ₁)	Male	64	6.30	.849	.310	.578
	Female	63	6.38	.771		
I believe Eva Hendriks was fair when handling the situation. (E ₂)	Male		1.75	.926	.021	.885
	Female		1.76	.911		
I do not believe Ahmed is a victim in the situation. (E ₃)	Male		3.09	1.88	.541	.462
	Female		2.81	1.71		
I believe Eva Hendriks' judgements are unbiased. (E ₄)	Male		1.84	1.39	3.162	.075
	Female		1.76	1.64		
Average Explicit Bias Scores (E _{AVG})	Male		2.10	.833	.637	.425
	Female		2.00	.806		
Interpersonal Reactivity Index scores (IRI _{AVG})	Male		3.4459	.42909	5.489	.019
	Female		3.6366	.35055		

	Gender Identity	<i>N</i>	Mean	SD	χ^2	<i>p</i>
To what extent did you try to imagine what Mr. Al-Karim might be thinking, feeling, and experiencing? (Po)	Male	64	6.03	.959	2.973	.085
	Female	63	6.32	.714		
To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr. Al-Karim? (Ps)	Male		6.13	.826	2.098	.148
	Female		6.32	.737		
To what extent did you try to be objective and emotionally detached? (Pd)	Male		4.94	1.22	4.019	.045
	Female		4.41	1.52		

Note: For Explicit Bias and Perspective-taking measures data was recoded so that, 1 = very weakly, 7 = very strongly. For the Interpersonal Reactivity Index, 1 = Does not describe me well, 5 = Describes me very well.

Table 4

Analysis of the Kruskal Wallis-H test results on differences in Explicit Bias measures, Interpersonal Reactivity Index (IRI) scores, and Perspective-Taking Manipulation measures between nationality.

	Nationality	<i>N</i>	Mean	SD	χ^2	<i>p</i>
I believe Mr. Al-Karim was treated unfairly. (E ₁)	Dutch	64	6.36	.835	.258	.611
	Belgian	64	6.32	.785		
I believe Eva Hendriks was fair when handling the situation. (E ₂)	Dutch		1.70	.944	1.557	.212
	Belgian		1.82	.878		
I do not believe Ahmed is a victim in the situation. (E ₃)	Dutch		2.92	1.94	.430	.512
	Belgian		2.95	1.65		
I believe Eva Hendriks' judgements are unbiased. (E ₄)	Dutch		1.61	1.45	6.831	.009
	Belgian		2.00	1.57		
Average Explicit Bias Scores (E _{AVG})	Dutch		1.97	.820	1.37	.242
	Belgian		2.11	.816		
Interpersonal Reactivity Index scores (IRI _{AVG})	Dutch		3.5566	.38342	.064	.947
	Belgian		3.5360	.43246		

	Nationality	<i>N</i>	Mean	SD	χ^2	<i>p</i>
To what extent did you try to imagine what Mr. Al-Karim might be thinking, feeling, and experiencing? (Po)	Dutch	66	6.24	.725	.178	.673
	Belgian	62	6.11	.977		
To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr. Al-Karim? (Ps)	Dutch		6.30	.656	.464	.496
	Belgian		6.15	.903		
To what extent did you try to be objective and emotionally detached? (Pd)	Dutch		4.68	1.48	.013	.910
	Belgian		7.81	1.34		

Note For Explicit Bias and Perspective-taking measures data was recoded so that, 1 = very

weakly, 7 = very strongly. For the Interpersonal Reactivity Index, 1 = Does not describe me well,

5 = Describes me very well.

Table 5*Spearman's Correlations among Explicit Bias Measures and Interpersonal Reactivity Index**scores*

	(IRI _{AVG})	(E _{AVG})	(E ₁)	(E ₂)	(E ₃)	(E ₄)	(P _S)	(P _O)	(P _D)
Interpersonal Reactivity Index scores (IRI _{AVG})	-								
Average Explicit Bias Scores (E _{AVG})	-.083	-							
I believe Mr. Al-Karim was treated unfairly. (E ₁)	-.011	-.503**	-						
I believe Eva Hendriks was fair when handling the situation. (E ₂)	.408	.662**	-.536**	-					
I do not believe Ahmed is a victim in the situation. (E ₃)	-.189*	.770**	-.352**	.362**	-				
I believe Eva Hendriks' judgements are unbiased. (E ₄)	-.047	.630**	-.264**	.396**	.175*	-			

	(IRI _{AVG})	(E _{AVG})	(E ₁)	(E ₂)	(E ₃)	(E ₄)	(P _S)	(P _O)	(P _D)
To what extent did you try to imagine what you might be thinking, feeling, and experiencing if you were Mr. Al-Karim? (P _S)	.206*	-.274**	.490**	-.284**	-2.64**	-.143	-		
To what extent did you try to imagine what Mr. Al-Karim might be thinking, feeling, and experiencing? (P _O)	.225*	-.242**	.407**	-.229**	-.263**	-.145	.826**	-	
To what extent did you try to remain objective and emotionally detached? (P _D)	.051	.005	-.103	-.037	-.021	.028	.130	.073	-

Note: For Explicit Bias and Perspective-taking measures data was recoded so that, 1 = very weakly, 7 = very strongly. For the Interpersonal Reactivity Index, 1 = Does not describe me well, 5 = Describes me very well.

Appendix A

Screenshot of DialogueTrainer Simulation



Karadsheh, R.,(2022), *DialogueTrainer Simulation* [Screenshot]. DialogueTrainer.

Appendix B

Perspective-taking instructions – DialogueTrainer

DialogueTrainer Simulation

You will first play through a simulation on DialogueTrainer. You'll be introduced to the scenario you're playing. Please read this introduction carefully, and allow yourself to truly experience the situation. During the simulation, you will be presented with three answer options. Select the one you feel most suitable to proceed through the situation.

The simulation will open in a new window. **Do not close this tab - you will need to return to this tab to complete this study.**

You can access the DialogueTrainer simulation by opening this link *in a new tab*:
https://en.dialoguetrainer.app/scenario/play/4282/oFtf27mmeuKVj_ONsNTZK9jqe_WcnGIWiq_WWGdLG

Your answer choices will be anonymously recorded for research purposes.

You, Mr. Al-Karim, received a phone call earlier informing you that your son, Ahmed, got into a fight at school

Ahmed is a calm child, so this behaviour is out of character. You're now meeting with the disciplinary advisor at school trying to learn more about what happened and how to move forward.

How do you navigate this discussion in a productive manner?

Appendix C

Perspective-taking instructions – Transcript condition

Reading a conversation transcript

You will be redirected to a transcript of a conversation between Mr. Al-Karim and Eva Hendriks, the disciplinary advisor at his son's school.

Mr. Al-Karim was called earlier that day and informed his son, Ahmed, got into a fight at school. Ahmed is a calm child, so this behaviour is out of character and appears to have been provoked. Mr. Al-Karim recorded the conversation with the disciplinary advisor, which you'll read a transcription of on the following page. During this meeting, he tries to learn more about what happened and how to move forward.

Read this conversation as though you are Mr. Al-Karim, taking into account his thoughts and feelings.

Appendix D

Transcript 1

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she is at work.

Eva Hendriks: Oh, good for her! Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I was told Ahmed hit his classmate.

Eva Hendriks: Yes, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: Of course - this behaviour is not acceptable. But do you know why Ahmed acted this way?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: So, what you're saying is that Ahmed hit Thomas because he wasn't included in the football game?

Eva Hendriks: The teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: Have you talked to Ahmed about what happened?

Eva Hendriks: There is no need to, it's very clear what happened. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: Kids like him? What do you mean?

Eva Hendriks: You know... kids who come from environments where violence is prevalent. We see it on the news all the time.

Mr. Al-Karim: What makes you think Ahmed comes from a violent environment?

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: Yes, and he told me another story.

Eva Hendriks: I see... and what did Ahmed say?

Mr. Al-Karim: Thomas was being racist to Ahmed.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards racism and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: Are you saying Ahmed is lying about experiencing racism?

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: Have you considered why he doesn't have friends?

Eva Hendriks: Well, let's be honest here... he isn't like the rest of the students, and students like others who are like them. Your culture normalises and accepts violence – it's on the news every day. The best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: Why are you so dismissive of Ahmed's story?

Eva Hendriks: I'm not dismissing your son's story, Mr. Al-Karim. There are witnesses to Thomas' story, and frankly, it makes sense Ahmed wants to avoid getting in trouble. Truthfully, Ahmed needs behavioural therapy. I understand you may not be used to getting advice from women, but I can guarantee you my qualifications and experience make me knowledgeable.

Mr. Al-Karim: I'm not doubting your expertise, but I'm surprised how easily you went along with Thomas' story, which was backed up by his friends.

Eva Hendriks: Mr. Al-Karim, these are good trustworthy kids with no reason to lie. I'm not the only staff member who believes that Ahmed should attend a behavioural management programme - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: My wife and I will be returning to meet with you - this has been unacceptable.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix E

Transcript 2

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she won't be joining us unfortunately.

Eva Hendriks: Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I heard Ahmad got into a fight.

Eva Hendriks: Yes, he hit his classmate, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: I understand and agree with you. Could you tell me more about what happened?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: I see. This doesn't sound like Ahmed, did anyone else see what happened?

Eva Hendriks: Well, teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: I would like to hear what Ahmed has to say about this.

Eva Hendriks: He's currently at the principal's office. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: Kids like him? What do you mean?

Eva Hendriks: You know... kids who come from environments where violence is prevalent. We see it on the news all the time.

Mr. Al-Karim: What makes you think Ahmed comes from a violent environment?

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: He told me what happened to him.

Eva Hendriks: I see... and what did Ahmed say?

Mr. Al-Karim: Thomas threatened Ahmed because of his ethnicity.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards threats and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: Are you saying Ahmed is lying about experiencing racism?

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: Have you considered why he doesn't have friends?

Eva Hendriks: Well, let's be honest here... he isn't like the rest of the students, and students like others who are like them. Your culture normalises and accepts violence – it's on the news every day. The best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: Why are you so dismissive of Ahmed's story?

Eva Hendriks: I'm not dismissing your son's story, Mr. Al-Karim. There are witnesses to Thomas' story, and frankly, it makes sense Ahmed wants to avoid getting in trouble. Truthfully, Ahmed needs behavioural therapy. I understand you may not be used to getting advice from women, but I can guarantee you my qualifications and experience make me knowledgeable.

Mr. Al-Karim: I'm not doubting your expertise, but I'm surprised how easily you went along with Thomas' story, which was backed up by his friends.

Eva Hendriks: Mr. Al-Karim, these are good trustworthy kids with no reason to lie. I'm not the only staff member who believes that Ahmed should attend a behavioural management programme - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: I'll be sure to let my wife know how this school treats our son. This behaviour will not be tolerated, so expect to hear from us soon.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix F**Transcript 3**

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she is busy at the moment.

Eva Hendriks: Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I was told Ahmed hit his classmate.

Eva Hendriks: Yes, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: Yes, I agree. Do you know why Ahmed hit Thomas?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: My son would never hit anyone unprovoked. This doesn't sound like Ahmed, did anyone else see what happened?

Eva Hendriks: Well, teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: Where is Ahmed now?

Eva Hendriks: He's currently at the principal's office. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: Ahmed has never been aggressive before.

Eva Hendriks: Yes, but you know... kids who come from environments where violence is prevalent end up becoming violent too. We see it on the news all the time.

Mr. Al-Karim: Excuse me? Violent environments?

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: Yes, and he told me another story.

Eva Hendriks: I see... and what did Ahmed say?

Mr. Al-Karim: Thomas was being racist to Ahmed.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards racism and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: You think Ahmed is making this up to avoid getting into trouble?

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: You mean Moroccan kids?

Eva Hendriks: Not necessarily just Moroccan kids... the best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: Ahmed is *not* the problem here.

Eva Hendriks: Mr. Al-Karim, I need to ask you to calm down. This is difficult to accept, but Ahmed needs this. I understand you may not be used to getting advice from women, but I can guarantee you my qualifications and experience make me knowledgeable.

Mr. Al-Karim: Of course you're qualified, but I know what my son needs.

Eva Hendriks: I'm not the only staff member who believes this is the best move - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: I expect you'll be more respectful at the next meeting. My wife and I will not allow our son to be treated like this.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix G

Transcript 4

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she is at work.

Eva Hendriks: Oh, good for her! Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I heard Ahmed got into trouble.

Eva Hendriks: Yes, he hit his classmate, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: Of course this behaviour is not acceptable. But do you know why Ahmed acted this way?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: So what you're saying is that Ahmed hit Thomas because he wasn't included in the football game?

Eva Hendriks: The teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: Have you talked to Ahmed to hear what happened?

Eva Hendriks: He's currently at the principal's office. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: I don't understand what you mean by 'kids like him'.

Eva Hendriks: Yes, but you know... kids who come from environments where violence is prevalent end up becoming violent too. We see it on the news all the time.

Mr. Al-Karim: That is *very* inappropriate to say.

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: I did, have you talked to Thomas?

Eva Hendriks: No, not since he reported the incident. But what did Ahmed tell you?

Mr. Al-Karim: Thomas bullied Ahmed because of his ethnicity.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards bullying and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: You're saying my son is making up his experience with racism.

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: So he's expected to be aggressive because of his background?

Eva Hendriks: Not necessarily just Moroccan kids... the best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: I won't put my son in a behavioural programme he does not need.

Eva Hendriks: With all due respect Mr. Al-Karim, as an education expert, I know what Ahmed needs. I understand you may not be used to getting advice from women, but I can guarantee you my qualifications and experience make me knowledgeable.

Mr. Al-Karim: With all due respect, I know my son better than you do. Of course you're qualified, but I know what my son needs.

Eva Hendriks: I see this is hard for you to accept. But I'm not the only staff member who believes this is the best move - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: My wife and I will be returning to meet with you. This has been unacceptable.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix H

Transcript 5

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she is at work.

Eva Hendriks: Oh, good for her! Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I was told Ahmed hit his classmate.

Eva Hendriks: Yes, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: Yes, I agree. Do you know why Ahmed hit Thomas?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: My son would never hit anyone unprovoked. This doesn't sound like Ahmed, did anyone else see what happened?

Eva Hendriks: Well, teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: Where is Ahmed now?

Eva Hendriks: He's currently at the principal's office. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: Ahmed has never been aggressive before.

Eva Hendriks: Yes, but you know... kids who come from environments where violence is prevalent end up becoming violent too. We see it on the news all the time.

Mr. Al-Karim: That is *very* inappropriate to say.

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: Yes, and he told me another story.

Eva Hendriks: I see... and what did Ahmed say?

Mr. Al-Karim: Thomas was being racist to Ahmed.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards racism and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: You think Ahmed is making this up to avoid getting into trouble?

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: You mean Moroccan kids?

Eva Hendriks: Not necessarily just Moroccan kids... the best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: Ahmed is *not* the problem here.

Eva Hendriks: Mr. Al-Karim, I need to ask you to calm down. This is difficult to accept, but Ahmed needs this. I understand you may not be used to getting advice from women, but I can guarantee my qualifications and experience make me knowledgeable.

Mr. Al-Karim: I'm not doubting your expertise, but I'm surprised how easily you went along with Thomas' story, which was backed up by his friends.

Eva Hendriks: Mr. Al-Karim, these are good, trustworthy kids with no reason to lie. I'm not the only staff member who thinks Ahmed should attend a behavioural management programme - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: I'll be sure to let my wife know how this school treats our son. This behaviour will not be tolerated, so expect to hear from us soon.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix I

Transcript 6

Eva Hendriks: Good afternoon Mr. Al-Karim. My name is Eva Hendriks - we spoke on the phone. Thank you for coming on such short notice, will Mrs. Al-Karim be joining us?

Mr. Al-Karim: No, she is busy at the moment.

Eva Hendriks: Well, please inform her of our discussion. Do you know why we've called you in?

Mr. Al-Karim: I heard Ahmed got into trouble.

Eva Hendriks: Yes, he hit his classmate, Thomas Bekker. This kind of behaviour is not tolerated here.

Mr. Al-Karim: Yes, I agree. Do you know why Ahmed hit Thomas?

Eva Hendriks: Some children were playing football during break, and Ahmed wanted to join after the match started. But Thomas told him he couldn't, which made Ahmed angry. Thomas tried to calm him down, but ultimately, Ahmed ended up punching him and they got into a fight.

Mr. Al-Karim: I see. This doesn't sound like Ahmed, did anyone else see what happened?

Eva Hendriks: Well, teachers saw your son hit Thomas, Mr. Al-Karim, there is no denying that.

Mr. Al-Karim: Where is Ahmed now?

Eva Hendriks: He's currently at the principal's office. Honestly, we're concerned about his behaviour - we know how kids like him behave. This puts other students at risk, especially when they get older.

Mr. Al-Karim: I don't understand what you mean by 'kids like him'.

Eva Hendriks: Yes, but you know... kids who come from environments where violence is prevalent end up becoming violent too. We see it on the news all the time.

Mr. Al-Karim: Excuse me? Violent environments?

Eva Hendriks: Please Mr. Al-Karim, there is no reason for you to get angry. Ahmed has also been acting out since we talked to him. We're concerned that he might be a threat to other students, so he is in the principal's office. Maybe you can reason with him.

Eva Hendriks: Welcome back Mr. Al-Karim. Did you have a good talk with Ahmad?

Mr. Al-Karim: He told me what happened to him.

Eva Hendriks: I see... and what did Ahmed say?

Mr. Al-Karim: Thomas threatened Ahmed because of his ethnicity.

Eva Hendriks: Well, as you know, this school has a zero-tolerance policy towards racism and violence. Had Thomas been in the wrong, we would have done something about it - but we have multiple students backing up Thomas' story. Frankly this happens all the time - children make up stories to avoid getting in trouble.

Mr. Al-Karim: You think Ahmed is making this up to avoid getting into trouble?

Eva Hendriks: I've been at this school for many years Mr. Al-Karim. I know how children behave when they are caught doing something bad. I know kids like Thomas, and I know kids like Ahmed. Thomas is a good kid - he's very well-liked by his peers and teachers. There's no reason for him to act out. Ahmed on the other hand, well... he doesn't have many friends, and this kind of behaviour is seen from kids like him.

Mr. Al-Karim: Have you considered why he doesn't have any friends?

Eva Hendriks: Well, let's be honest here... here isn't like the rest of the students. Students like others who are like them. Your culture normalises and accepts violence - it's on the news everyday. The best step forward from here is sending him to a behavioural management programme. He's a risk not only to himself, but to other students as well. Behavioural issues are expected and they should be stopped before they get worse.

Mr. Al-Karim: I won't put my son in a behavioural programme he does not need.

Eva Hendriks: Mr. Al-Karim, I need to ask you to calm down. This is difficult to accept, but Ahmed needs this. I understand you may not be used to getting advice from women, but I can guarantee my qualifications and experience make me knowledgeable.

Mr. Al-Karim: With all due respect, I know my son better than you do.

Eva Hendriks: I'm not the only staff member who believes this is the best move - the student counsellor also agrees with me. Here are some brochures for the programmes we think would suit Ahmed best. Perhaps you can explore these options with your wife, and we'll discuss how to move forward at our next meeting. For now, Ahmed should go home until we decide on the next step. If you'll excuse me, I have to go to another meeting.

Mr. Al-Karim: I expect you'll be more respectful at the next meeting. My wife and I will not allow our son to be treated like this.

Eva Hendriks: I'm sorry you feel that way. I look forward to meeting with you again and having an honest and open discussion. You'll have enough time to cool off by then - and make sure Mrs. Al-Karim doesn't stay home. Have a great day, and we'll speak again soon!

Appendix J

Communication game (prisoner's dilemma) instructions

Communication Game

To help you increase your chances of winning a €20.00 bol.com gift voucher, you will play a communication game.

You will be paired with another participant who already played this game.

The choices you make can either increase/decrease your raffle entries, or increase/decrease the other player's raffle entries.

Instructions:

During this game, you can choose to "betray" your partner, or remain "silent". Your choices have the following consequences:

- If you and your partner both choose to 'betray' the other, you'll both lose one raffle entry
- If your partner 'betrays' you, but you remain 'silent', you will lose two raffle entries, and your partner will lose no raffle entries.
- If you 'betray' your partner, but your partner remains 'silent', your partner will lose two raffle entries, and you will lose no raffle entries.
- If both you and your partner remain 'silent' neither of you will lose a raffle entry. To increase your chances of winning, you'll play this game twice with two different partners.

Appendix K
Attention Checks

These attention checks were identically implemented in both the DialogueTrainer and transcript condition.

1 = Very strongly

2 = Strongly

3 = More or less strongly

4 = Undecided

5 = More or less weakly

6 = Weakly

7 = Very Weakly

	Very strongly	Strongly	More or less strongly	Undecided	More or less weakly	Weakly	Very Weakly
To what extent did you try to imagine what you were thinking, feeling, and experiencing if you were Mr. Al-Karim?	1	2	3	4	5	6	7
To what extent did you try to imagine what Mr. Al-Karim might be thinking, feeling, and experiencing?	1	2	3	4	5	6	7
Select very weakly	1	2	3	4	5	6	7
To what extent did you try to be objective and emotionally detached?	1	2	3	4	5	6	7

1 = Does not describe me very well

5 = Describes me very well

IRI Items	Does not describe me very well				Describes me very well
1. I daydream and fantasise, with some regularity, about things that might happen to me.	1	2	3	4	5
2. I often have tender, concerned feelings for people less fortunate than me.	1	2	3	4	5
3. I sometimes find it difficult to see the “other guy’s” point of view.	1	2	3	4	5
4. Sometimes I don’t feel very sorry for other people when they are having problems.	1	2	3	4	5
5. I really get involved with the feeling of characters in a novel.	1	2	3	4	5
6. In emergency situations, I feel apprehensive and ill at-ease	1	2	3	4	5
7. I am usually objective when I watch a movie or a play, and I don’t often get caught up in it.	1	2	3	4	5
8. I try to look at everybody’s side of a disagreement before I make a decision.	1	2	3	4	5
9. When I see someone being taken advantage of, I feel kind of protective towards them.	1	2	3	4	5
10. I sometimes feel helpless when I am in the middle of a very emotional situation	1	2	3	4	5

IRI Items	Does not describe me very well				Describes me very well
11. I sometimes try to understand my friends better by imagining how things look from their perspective. Select describes me very well	1	2	3	4	5
12. Becoming extremely involved in a good book or movie is somewhat rare for me.	1	2	3	4	5
13. When I see someone get hurt, I tend to remain calm.	1	2	3	4	5
14. Other people's misfortunes do not usually disturb me a great deal.	1	2	3	4	5

Appendix L
Comprehension Check

What did Mr Al-Karim find out in this meeting?

- His son hit a boy who threatened him because of his ethnicity
 - His son failed a class
 - His son ran away from school
-

What was the son's name?

- Ahmed
- Asad
- Anwar