Dutch Police Officers Changing their Perspective through VR: the Effect on Empathy

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Abstract

This research paper investigates the relationships between change of perspective (CoP), experience of police officers, trait empathy, and state empathy. Through a Virtual Reality experiment, 38 Dutch voluntary police officers immersed themselves on duty, whereafter half of the participants viewed a video with a change of perspective manipulation. Their level of trait empathy, years of experience, and state empathy towards a stereotyped group were measured in a questionnaire. This study did not find evidence for a main effect on CoP, years of experience, and trait empathy on state empathy. Also, there was no support for trait empathy to be a moderator on the relationship between CoP and state empathy. In additional analyses, several interesting findings were discovered. One example is the significant interaction effect between CoP, years of experience, and state empathy. Finally, the limitations of this study and future research ideas are mentioned.

Table of Content

1 Introduction

Today, ethnic minority groups have negative associations with the police. This is caused by negative experiences people hear from others or gone through themselves with police officers. An example is from a Dutch artist 'Typhoon' in 2016. He was driving in his car and was stopped by the police, without reason. The police officer on duty admitted that the combination of his young age, expensive car, and skin color played a role in pulling him over. This situation is one example that the selection process of the police officer is biased. This form of discrimination is called ethnic profiling: factors such as race, skin color, religion, and ethnic background play an important role in the selection choices that police officers make (Harris, 2002).

Typhoon shared his story online to show that discrimination by police officers is still an issue in the Netherlands that needs to be addressed. One may find it remarkable in a country with a multicultural society such as the Netherlands. Whereas sometimes police officers find sufficient reason to pull over a car purely based on outward appearance of an individual, it should be based on dangerous behavior or provided information through police systems. Yet, police officers can have good intentions while selecting people based on stereotypes, for example to prevent illegal activities (Landman & Kleijer-Kool, 2016). On the other hand, ethnic profiling disregards actual evidence of dangerous behavior, which should be the main reason for pulling over a car or checking someone's identity.

Among Dutch police officers, ethnic profiling is an uncomfortable subject. They tend to nuance and deny the impact of this issue (Landman & Kleijer-Kool, 2016). However, the consequences of ethnic profiling on people can be profound. For example, ethnic profiling perpetuates a vicious cycle. People have the tendency make other's expectations their own and behave accordingly (Aronson et al., 2020, p479). In this context, the expectations of police officers are reflected in the behavior of people from ethnic minority groups. Therefore, ethnic minorities have higher chances to engage in criminal behavior, because officers expect them to be engage in criminal activities (Kassin et al., 2021, p189). Additionally, ethnic profiling causes reduced trust in police officers (Schlosser et al., 2021). For these reasons, it is important to be aware of underlying processes of ethnic profiling, and how to reduce it. Constructs such as empathy and perspective-taking take part in reducing ethnic profiling (Tassinari et al., 2022). How exactly these and other constructs reduce ethnic profiling are explained further later in this research paper.

The current research consists of a Virtual Reality experiment to study the relationship between empathy and change of perspective specifically in relation to ethnic profiling. Therefore, the research question is as follows: *"To what extent does change of perspective affect Dutch police officers' empathy level towards a stereotyped group and which role do gender, trait empathy and experience play in this?"*

1.1 Theoretical framework

1.1.1 Ethnic profiling

First, it is important to understand ethnic profiling and address relevant concepts that are part of the development of ethnic profiling. As mentioned before, ethnic profiling is a form of discrimination. The process of ethnic profiling starts with stereotyping. A stereotype is a belief or association about a group of people with certain characteristics (Kassin et al., 2021, p156). People can consciously or unconsciously use stereotypes to categorize other individuals into certain mental boxes based on perceived characteristics. For example, the perception that college students drink a lot of alcohol. Stereotypes can result in people misperceiving events, which makes people interpret ambiguous information in a way that confirms expectations (Forsyth, 2019, p461). Thus, stereotypes can result in self-fulfilling prophecies, meaning in this context that ethnic minorities may engage in criminal activities as a cause of stereotyping (Kassin et al., 2021, p189).

Another relevant concept regarding ethnic profiling is prejudice. Prejudice implies negative feelings or attitudes toward an individual or group based on the membership of particular groups (Kassin et al., 2021, p156). Prejudice is based on stereotyped beliefs but carries an opinion on that belief. For example, women are not tough enough (stereotype belief), hence they are not capable of being leaders (opinion).

If actual behavior is directed at people because of prejudices about their membership in certain groups, one speaks of discrimination (Kassin et al., 2021, p156). Discrimination is often an unconscious process. Racism (based on racial background), sexism (based on gender), and ethnic profiling are examples of discrimination. Currently, discrimination is no longer socially acceptable. However, other implicit forms of discrimination are more prevalent which are more subtle. A form of implicit discrimination is aversive racism influenced by biases, which means that there is ambivalence between good intentions on one side and unconscious discrimination on the other (Kassin et al., 2021, p159). In other words, a police officer might genuinely believe in equal treatment for all individuals, but unconsciously act with more forceful actions towards an individual from a certain ethnical background. This modern form of discrimination is based on the attitudes or prejudice of an individual. Stereotypes, prejudice, and discrimination often influence and enhance each other (Kassin et al., 2021, p159).

Now that important concepts regarding ethnic profiling are clarified, the question arises of how ethnic profiling occurs in the police context. Easton et al. (2010) found in their research that the police regularly take part in over- and underpolicing of certain groups in society. Regarding ethnic profiling, the focus lies on police officers engaging in overpolicing of ethnic minorities. Overpolicing starts with police officers' own selection choices, to check a scooter's license plate for instance. In practice, most people getting a check are people of color (Cankaya, 2012). Next to understanding the occurrence of ethnic profiling, it is also valuable to understand what influences ethnic profiling. Therefore, the next paragraphs will elaborate on the role of these influences.

1.1.2 Role of Empathy

In the literature, empathy is seen as a complex psychological construct (e.g., Chrysikou & Thompson, 2016; Davis, 1980; Duan & Hill, 1996). Empathy is an other-oriented emotion, which involves feeling for the other (Seppala et al., 2017). According to Davis (1980), empathy consists of a set of separate yet related constructs. This multidimensional approach says that empathy consists of two main domains: (1) cognitive and (2) affective. Cognitive empathy is about the ability to understand the experiences and feelings of others (Davis, 1980). Affective empathy is about the emotional reactivity to others' experiences or feelings, such as feeling compassion for others (Konrath et al., 2018). To make this distinction clear, cognitive empathy is about observing and comprehending the emotions and experiences of another individual (Seppala et al., 2017), while affective empathy is about sharing others' emotions and experiences (Shen, 2010).

In respect to ethnic profiling, it is useful to distinguish two types of empathy. The first type is trait empathy, which is relatively stable across situations and over time (Konrath et al., 2018). It is a personality trait or characteristic. The second type is state empathy, which is based on one specific situation (Konrath et al., 2018). In this case, the 'object' activates a representation of a particular situation which generates automatic and emotional responses (Shen, 2010). For police officers, state empathy towards citizens can vary per situation. It is self-evident that they have dynamic work environments, which can change rapidly.

A systematic review of Tassinari et al. (2022) made clear that methods increasing empathy can reduce prejudice and change attitudes towards stereotyped groups. Research by Beelmann and Heinemann (2014) found that especially empathy and perspective-taking showed strong effects to reduce negative attitudes toward stereotyped groups. Research from 25 years ago already found that creating empathy for an individual from a stereotyped group can enhance positive attitudes toward an entire stigmatized group (Batson et al., 1997). One way to explain the effect of empathy on ethnic profiling is by the proximity principle, which is the tendency to like others more if they happen to be close by. If individuals would empathize more with others, people will experience greater closeness to others who are profiled ethnically different, as interpreted by the psychology of proximity (Hargrove et al., 2020). Taking this into account, it is helpful to understand what aspect of empathy reduces ethnic profiling specifically.

1.1.3 Changing Perspective

Partially, empathy is about seeing the perspective of someone else (Seppala et al., 2017; Davis, 1980). Perspective-taking is an active cognitive process that is performed by picturing the world of another one's view, trying to understand the thoughts, feelings, and motives behind the individual (Ku et al., 2015; Galinsky et al., 2005; Batson et al., 1997). Changing one's perspective provides the ability to view a certain situation from a different perspective.

In this study, perspective-taking is conceptualized as Change of Perspective (CoP). In an early study, Regan and Totten (1975) let participants watch a video of a conversation and asked them to take the perspective of one person in the video and empathize with the target. In this way, Regan and Totten (1975) changed the perspective of the observers which resulted in more situational attributions to the behavior of people compared to observers who were not manipulated to take the perspective of a target in the video. Besides, in multiple other studies is found that perspective-taking is effective in reducing stereotyping (Wang et al., 2018; Batson et al., 1997; Berthold et al., 2013; Peck et al., 2013), also specifically in the context of ethnic stereotyping (Galinsky et al., 2005). Even so, perspective-taking along with increased empathy has the strongest effect in reducing prejudice (Beelmann & Heinemann, 2014). It is presumed that Change of Perspective increases empathy since those are interrelated (Galinsky & Moskowitz, 2000).

Intergroup biases influence how an individual identifies another individual or a group (Forsyth, 2019, p457). These identifications or prejudices can be flawed and can cause erroneous dispositional attributions to the behavior of that individual. The Intergroup Projection Model explains that perspective-taking reduces intergroup biases by stimulating the perspectives of members of other groups (Galinsky et al., 2005). Changing perspective is a way to reduce these intergroup biases because the positive effect of perspective-taking is that people tend to make situational attributions (Regan and Totten, 1975; Galinsky & Moskowitz, 2000). Change of Perspective creates more similarity between the individual's self and the target and establishes a social bond of some sort (Galinsky et al., 2005). So, the flawed identifications and dispositional attributions will be disrupted due to changed perspectives, while understanding and sympathy of the other will be enhanced.

Another explanation regarding perspective-taking reducing stereotyping in the literature is by the ingroup-outgroup bias (Forsyth, 2019, p458). In this context, police officers (unconsciously) categorize themselves as ingroup members and individuals with other ethnic backgrounds are seen as outgroup members. Ingroup members see more negative features in outgroup members and view themselves as prototypical (Forsyth, 2019, p458). This concept is called perspective divergence (Berthold et al., 2013). This divergence in perspective creates and strengthens stereotypes and prejudices (Kassin et al., 2021, p176), which is a form of outgroup rejection (Forsyth, 2019, p458). However, Berthold et al., (2013) concluded that negative attitudes towards a stereotyped group shift to positive attitudes when one's perspective is changed into the direction of the stereotyped group, because the perception of one's prototypicality to their ingroup decreases. In short, perspective-taking reduces ingroup-outgroup bias.

1.1.4 Individual Differences

As research shows, empathy and perspective-taking can influence ethnic profiling. However, individuals are unique and can have different reactions to the same situation. In combination with empathy and perspective-taking, individual differences can play a role in reducing ethnic profiling. For

instance, the level of trait empathy can differ per individual (Davis, 1980). It goes without saying that trait and state empathy are strongly associated (Shen, 2010). Since empathy is found to reduce stereotyping, it is plausible to expect that police officers with a high level of trait empathy will also have higher state empathy. This indicates that high trait empathy will result in high empathy towards stereotyped groups.

Additionally, women were found to have higher levels of empathy (e.g., Davis, 1980; Batson et al., 1996; Toussaint & Webb, 2005). This difference in gender and level of empathy was also found specifically in the police context. Female officers show a higher level of empathy than their male colleagues (Dando & Oxburgh, 2016). In contrast, some research found no significant difference in gender and level of empathy (e.g., Baez, 2017). However, most studies provide evidence supporting that women have a higher level of empathy than men. Therefore, this individual difference is interesting to take into consideration within this study.

Another interesting individual difference is the expertise of police officers. Police officers use the knowledge that they gain through previous experiences, which provides them with a 'gut feeling' (Landman & Kleijer-Kool, 2016). Jens (2019) names this gut feeling or intuition as 'experiential professionalism'. Landman and Kleijer-Kool (2016) found that police officers who rely on their intuition operate less rationally, which results in more selection choices based on physical characteristics (e.g., ethnic background) than on actual dangerous behavior. Furthermore, police officers see societal pitfalls and traumatic events which may influence their view of the world. As a result, officers can have a maladaptive way of coping with such events. For example, they can suppress emotions, likely leading to toughness toward others (Gutschmidt & Vera, 2022). This can obviously reduce police officers their empathy.

If officers operate longer in the police field, they may engage in confirmation bias. In this case, it would mean that police officers perceive information and filter it in such a way that confirms existing beliefs and attitudes (Schlosser et al., 2021). Also, people tend to have a "bias blind-spot"; seeing themselves as less sensitive to bias than others, causing a lack of motivation to change existing beliefs or attitudes (Pronin & Kugler, 2007). Such bias can reduce trust in police by citizens (Schlosser et al., 2021). Consequently, it is beneficial to include experience in this study and view its relation to empathy.

1.1.5 Virtual Reality, Empathy, and Change of Perspective

Virtual Reality (VR) technology has emerged as a powerful tool for providing changed perspectives. Also in a judicial context, VR has high potential for professionals because it provides the opportunity to be fully absorbed into a manipulated situation (Cornet et al., 2019). Stimulation to take another perspective is a valuable option within VR (Tassinari et al., 2022). Cornet et al. (2019) also mention that VR gives the possibility to give insight into other people's perspectives. The manipulated

environment in VR gives the opportunity to observe and learn from actual behavior in such situations, in a practical and enjoyable way.

The embodiment of another perspective and agency about the virtual body can increase empathy (Barbot & Kaufman, 2020). In VR, immersion and presence play an important role (Cornet et al., 2019; de Vries et al., 2021; van Loon et al., 2018). Immersion is the participant's level of submersion in the Virtual Environment (VE) and stimuli of the real environment where one's body is located are blocked (Cornet et al., 2019). Presence is the personal perception of this submersion and feeling as the VE is the actual environment instead of the real environment of one's physical body (Cornet et al., 2019). If an individual feels a high level of presence in the VE, it is more likely that empathy will increase, using Virtual Reality Perspective-Taking (van Loon et al., 2018).

Various studies show that increasing empathy using VR is possible (e.g., Barbot & Kaufman, 2020; Wijma et al., 2018). An explanation is found by Hargrove et al. (2020), who found that VR stimulates physical and emotional proximity. Emotional proximity is found to be most effective to increase empathy because emotional proximity increases relatability. This corresponds to the theory of psychological proximity, as previously explained (see 1.1.2) (Forsyth, 2019). Regarding ethnic profiling, Peck et al. (2013) found that VR can reduce implicit racial bias, and prejudice can be decreased (Tassinari et al., 2022).

1.1.6 Conceptual model

Figure 1 shows the conceptual model of this study. The expected outcome of this study is explained in more detail in the hypotheses (see 1.2).

Figure 1

Conceptual Model of this Study
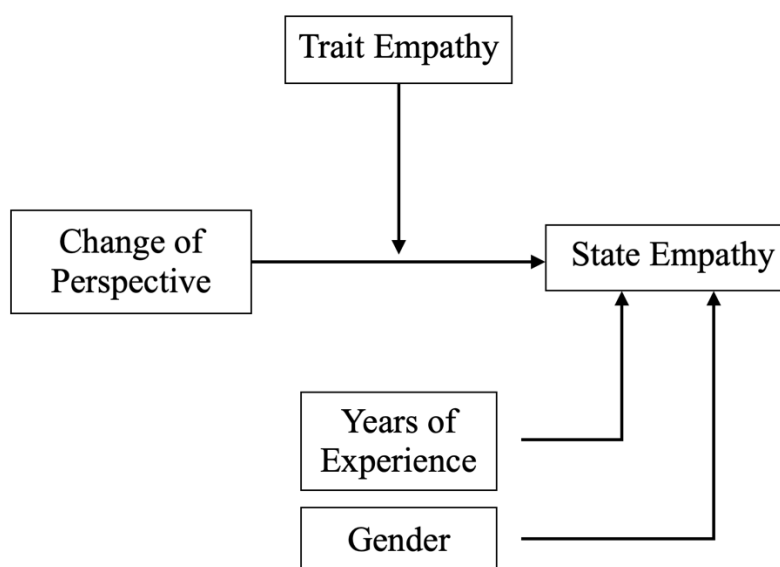
1.2 Hypotheses

   This experimental study tries to expand existing knowledge about empathy and CoP that might help reduce ethnic profiling in the police context. Specifically, finding out if CoP can be used as a method in (existing) training to reduce ethnic profiling by increasing State Empathy. Virtual Reality is used as a tool to manipulate a certain situation, where participants watch a video that shows the same situation from a changed perspective. By means of a questionnaire, demographic variables, Years of Experience, Trait Empathy, and State Empathy are measured and analyzed. Consistent with the literature, the hypotheses of this study are:

H1: State Empathy is higher if Change of Perspective takes place than if Change of Perspective does not take place.

H2: The effect of Change of Perspective on State Empathy is expected to be stronger if Trait Empathy is low versus when it is high.

H3: It is expected that Gender and Experience influence State Empathy.

  a: Female police officers have higher State Empathy compared to male police officers.

  b: Experience has a negative effect on State Empathy.

2 Methods

2.1 Design

   The study had a between-participants design with Change of Perspective (CoP versus control), Years of Experience (scale), Gender (female versus male) as independent variables, State Empathy (scale) as the dependent variable, and Trait Empathy (scale) as covariate.

2.1.1 Participants

   Through connections with the National Dutch Police, voluntary police officers were asked to participate in this study by invitation via the National Dutch Police. This is a case of nonprobability sampling with reliance on available subjects (Babbie, 2021). The only restriction to participate was regarding previous and ongoing VR experiments about ethnic profiling, to ensure that participants enter the experiment as neutral as possible. Voluntary police officers engage in the same duties and have equal authorities as full-time police officers, they only work fewer hours in the field (approximately one or two shifts per week). The sample of this study consisted of 38 police officers. Participants were randomly assigned to the control condition ($N = 19$) or CoP condition ($N = 19$). Participation was entirely voluntary and without compensation. There were no participants deleted from the data set.

   The average age of participants was 55 years old ($SD = 10.65$, range $= 28 – 72$). Of the 38 respondents, 34 respondents were male and only 4 respondents were female. On average, respondents

worked 23 years at the Dutch National Police (SD = 12.40, range = 4 – 49 years). All voluntary police officers operate in the east region of the Netherlands.

2.2 Procedure

Data collection took place in four different Dutch police stations (Enschede, Zwolle, Apeldoorn, and Arnhem). For each data collection session, it was possible to conduct the VR simulation with 2-4 participants simultaneously. Participants came into a room with laptops already set up, and they were randomly classified into 'Control condition' and 'CoP condition'. Then both participants read the information about the experiment and started part one of the online questionnaire. Once they finished the first part, they were escorted to the VR glasses. At this time, they were separated to make sure that the participants would not get distracted by each other. Whenever the instructions of the VR experiment were clear, the participants entered the VR experience and acted out the scenario.

When the participant started the VR experiment, they saw a brief tutorial about how the VR glasses work. Thereafter they started the experiment. The situation of the Virtual Environment is located in front of a train station 'Amsterdam Sloterdijk'. In the beginning, participants are asked to address a group of adolescent boys with diverse ethnical backgrounds (see Figure 2). After that, participants could make their own choices within the VE. For example, they could ask the group of youths for their ID cards or could choose to ask the group to leave the entrance of the train station. Certain pathways in this VE were excluded because participants were told to address the group of adolescent boys. So, there were three possible pathways in this experiment resulting in a code at the end of the VR experience, which was needed for the CoP manipulation. After the VR experience, participants in the control condition were asked to fill in part two of the questionnaire.

Since there were three different pathways in this VR experience, there were also three different videos to match the pathway for every participant in the CoP condition. Dependent on the code participants received at the end of their VR experience, they watched the CoP video on a laptop. This form of Change of Perspective is indirect (Ku et al., 2015). This video shows the situation in the VE from the perspective of the stereotyped group of youths (see Figure 3). In the VE, there is one member of the group that participants need to address who is filming the situation on his phone. The participants in the CoP-condition watched the video from that perspective. Subsequently, participants were asked to fill in the second part of the questionnaire. When the questionnaire was completed, the experiment was finished and participants were asked to share no information about the VR experience with other participants unless other participants already completed the experiment.

During the full experiment, participants had the possibility to ask questions if something was not clear. After completion of the questionnaire, participants' personal VR experience was discussed shortly. Participants had the possibility to talk about their VR experience more extensively with a trainer who is specialized in VR training and ethnic profiling in the police department in a separate

room. They shared their opinion about and their experiences in the field with ethnic profiling. The outcomes of those conversations are not in the scope of this research.
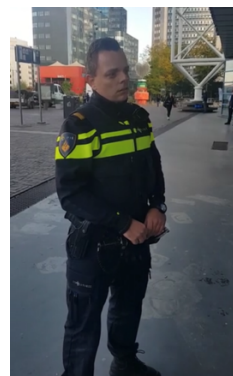
Figure 2   **Figure 3**

Fragment of Virtual Environment of the VR-Intervention   *Fragment of CoP-Video*

Note. The group of youths in Figure 2 was addressed by the participants. Participants can make a choice by looking at one of the boxes that pop up on their screen. Figure 3 shows the point of view of the individual with a phone in his hands from Figure 2. This is also the perspective in the CoP-video.

2.3 Materials

2.3.1 Virtual Reality

In this study, police officers will participate in an immersive VR experience. The Oculus Go VR glasses were used in this study. The Virtual Environment was filmed by a camera with 360 degrees rotation. This situation required no walking or talking, so participants could experience the VR while standing and looking around. Specifically for research and training for police officers in respect to ethnic profiling, this Virtual Environment was already available.

2.3.2 Data Analysis

The data is collected through an online questionnaire by Qualtrics TM. This provides a secure way to store data, while still collecting new data. After all data was collected, the data was downloaded in a .sav file, which was inserted in a statistical software package. This study used SPSS version 28.0.1.0 to conduct the analyses. For the analyses, the Chi-square test, linear regression, and Andrew F. Hayes' PROCESS macro are used. PROCESS macro uses linear regression analysis to view possible interaction effects and provides a visual representation of the interaction (Hayes, 2022). This measures direct and indirect main effects and interaction effects.

2.4 Measures

2.4.1 Variables

Since the VR experience and CoP video do not provide data to analyze, the data of this study is collected through a questionnaire. Firstly, Change of Perspective (CoP) is classified in (1) the CoP condition or (2) the Control condition. Secondly, individual and demographic constructs, such as Gender (male (1), female (2) & other/rather not say (3)) and age are asked in the questionnaire (see Appendix 1). Also, their experience within the police is asked, which is a scale variable called Years of Experience. This is the total number of years that participants are working for the Dutch National Police, including education and training. Trait and State Empathy are measured by appropriate measures, which are further explained in section 2.4.1 and section 2.4.2.

Lastly, some explorative analyses were conducted with the outcomes of the open questions in the questionnaire. First, the open questions were coded into quantitative variables. This was a case of open coding, where certain patterns in answers were transformed into codes. Table 1 shows the codebook with the open questions linked to the variables. These variables were manually inserted in SPSS and double-checked by a contributing student.

Table 1

Codebook Explorative Variables from Open Questions

Open question	Variables	Label	Codes
What is your opinion about the interaction with the group of youths?	Interaction perspective	From which perspective did the participant view the interaction?	Police, Youths, No perspective
	Interaction empathy	How did the participant view this interaction in respect to empathy?	Low, Neutral, High
Are you satisfied with your approach in the VR experience? Please explain your answer.	Approach satisfaction	Is the participant satisfied with his/her approach?	No, Neutral, Yes
	Satisfaction orientation	How did the participant substantiate his satisfaction about own approach?	Task-oriented, People-oriented, Both
Looking back, would you approach this situation the same as you did? Please explain your answer.	Reflection approach	Would the participant approach the situation the same another time?	Negative, Neutral, Positive
	Reflection form	Based on which view would the participant (not) change his/her approach?	Factually, Emotionally, Both

2.4.2 Empathy Assessment Index

A self-report measurement of Trait Empathy appropriate for professions with complex interpersonal situations such as police officers is the Empathy Assessment Index (EAI) (Inzunza, 2015). There are several variations of the EAI regarding the total number of statements. In this case, an EAI consisting of 14 statements is used with Likert-items ranging from 1-5 (1 = never, 5 = always).

The EAI consists of four subscales: (1) Self-Other Awareness (SOA), (2) Perspective-Taking (PT), (3) Emotion Regulation (ER), and (4) Affective Response (AR). One example statement for the SOA-subscale is: *"I can tell the difference between someone else's feelings and my own."* An example of a PT-statement is: *"I can imagine what it's like to be in someone else's shoes."* For emotion regulation, an example is *"Emotional evenness describes me well."* Finally, an example statement for affective response: *"Hearing laughter makes me smile."* In Appendix 2 is an overview of all 14 items. The statements in the questionnaire were translated into Dutch since all participants were from the Netherlands.

This 14-item version of EAI derives from a 17-item EAI which proved to have substantial reliability (α = .823) and high internal consistency (Lietz et al., 2011). From experience, it can be said that police officers are generally practical-minded and do not appreciate extensive texts or questionnaires. To make this study fit the study population and thus usable, the questionnaire was slightly adapted by removing three statements. All three statements are part of one additional subscale: Empathic Attitude (EA), which would indicate how likely an individual is to take empathic action (Lietz et al., 2011). In other versions of the EAI and other empathy measures, EA is also excluded because there is no support found that empathic attitude predicts empathic action (Lietz et al., 2011).

Without any adjustments, the 14-item EAI scored low on reliability in this study (α = .32, λ-2 = .44). Analyzing the statements' reliability individually showed that the reversed-scored statements (10 & 13) and two other statements (5 & 7) scored very poorly on reliability. When these items were deleted, the EAI scored higher on reliability to an acceptable level (α = .52, λ-2 = .58). With this in mind, statements 5, 7, 10, and 13 were excluded from this study and its further analyses. Table 2 shows an overview of the reliability analyses of the 10-item EAI. Herein, per subscale, is the Cronbach alpha and Guttman Lambda 2 or Pearson's *r* for two-item subscales.

Table 2

Overview Reliability 10-item EAI with Cronbach Alpha and Guttman Lambda 2

Subscale	Statements	α	λ-2	r
Self-Other Awareness	2, 4			.51**
Perspective-Taking	1, 8, 11, 14	.21	.30	
Emotion Regulation	6, 9			.17
Affective Response	3, 12			.38*
Total EAI	All above	.52	.58	

Note. Pearson's *r* did not find a significant correlation between the two items of emotion regulation.
* $p < .05$. ** $p < .01$.

2.4.3 State Empathy Scale

The State Empathy Scale (SES) consists of three dimensions relevant to State Empathy: (1) affective empathy, (2) cognitive empathy, and (3) associative empathy. In total, there are 9 statements divided over these three dimensions. This is also a self-report measure with Likert-items ranging from 1-5 where an individual must indicate to which extent he/she agrees with the statement (1 = not at all, 5 = completely). An example item of affective empathy is: *"I can feel the character's emotions."* Another example statement of cognitive empathy is *"The character's reactions to the situation are understandable."* Lastly, an example statement of associative empathy is: *"I can identify with the characters in the video."*

The statements were slightly altered to match the context of the experiment and were translated into Dutch. Also, three statements were excluded from the SES, because these statements were very similar to other statements. Shen (2010) found high validity and reliability for the SES in his study. In this study, this 9-item SES shows high reliability (α = .84, λ-2 = .85). In addition, affective empathy shows a strong significant correlation, meaning that the reliability is strong. Cronbach's alpha and Gutmann Lambda 2 also show acceptable outcomes for the reliability on the other subscales. In Table 3 is an overview of all outcomes of the reliability analyses. The complete SES with alterations can be seen in Appendix 3.

Table 3

Overview Reliability 9-item SES with Cronbach Alpha and Guttman Lambda 2

Subscale	Statements	α	λ-2	r
Affective Empathy	1, 2			.49**
Cognitive Empathy	3, 4, 5, 6	.74	.75	
Associative Empathy	7, 8, 9	.65	.66	
Total SES	All above	.84	.85	

** $p < .01$.

3 Results

First, Table 4 shows a general description of the findings. There is only one significant correlation between Gender and Years of Experience. However, the relationship between Gender and other variables could not be analyzed in this study, because only four participants were female. This means that hypothesis 3a could not be tested.

Table 4

Mean (M), Standard Deviation (SD,) and Correlation between the Variables [a]

Variables	*M*	*SD*	Gender	Years of Experience [b]	CoP	Trait Empathy
Gender	1.11	.31				
Years of Experience [b]	23.25	12.40	-.35[*]			
CoP	1.50	.51	-.17	.06		
Trait Empathy	3.59	.26	.06	.30	.04	
State Empathy	3.51	.52	.09	-.01	-.20	.14

[*] $p < .05$.
[a] $N = 38$. [b] $N = 36$.

3.1 Change of Perspective, Experience, and Trait Empathy

In order to measure the effects of Change of Perspective, Years of Experience, and Years of Experience on State Empathy, a linear regression was conducted. CoP had a small effect on State Empathy. Participants in the CoP condition scored on average higher on State Empathy ($M = 3.61$) than participants in the control condition ($M = 3.41$). However, this main effect was not significant (B = -.21, t (36) = -1.23, $p = .23$). This indicates that no support for hypothesis 1 was found, which expected a positive effect of Change of Perspective on State Empathy.

Hypothesis 3b assumed that Years of Experience has a negative effect on State Empathy. The outcome showed that Years of Experience is not a significant predictor of State Empathy (B = .00, t (36) = -.03, $p = .97$). This means that in this case, for hypothesis 3b was no support found. In addition, the outcome of a linear regression analysis showed that also Trait Empathy was not a significant predictor for State Empathy (B = .28, t (36) = .85, $p = .40$). This indicates that there was no significant main effect. It was hypothesized that the effect of CoP on State Empathy is influenced by Trait Empathy. The expectation was that if Trait Empathy was low, the effect of CoP on State Empathy was stronger than when Trait Empathy was low. However, model 1 of PROCESS shows no significant interaction effect on State Empathy (B = -.10, t (36) = -.14, $p = .89$). This implied that Trait Empathy was not a moderator as expected and no support for hypotheses 2 was found.

3.2 Additional Analyses

Some explorative analyses were conducted with Years of Experience and the open questions. In the open questions, participants were able to substantiate their choices in the VR experience. With

these outcomes, the area of interest was their association with CoP and if CoP influences their answers in the open questions. The Chi-Square test of independence was conducted on all variables to view the possible associations. With ordinal variables, a linear regression was conducted to see the predicted effect of CoP. These analyses show some interesting results.

3.2.1 Experience as Moderator

Since Years of Experience was an insignificant predictor for State Empathy, the focus lies on exploring these outcomes further. Using PROCESS by Hayes, it is found that there is a significant interaction effect between Years of Experience, CoP, and State Empathy (B = -.04, t (34) = -2.85, $p <$ .01). Figure 4 visualizes this interaction effect. This graph shows that police officers in the CoP group with ≥ 20 years of experience within the police score higher on State Empathy compared to the control group. The higher Years of Experience participants have, the higher participants in the CoP condition scored on State Empathy. In the control condition, however, participants with high Years of Experience scored lower on State Empathy. So, Years of Experience appears to be a moderator between Change of Perspective and State Empathy.

Figure 4

Interaction Effect between State Empathy, Change of Perspective, and Years of Experience
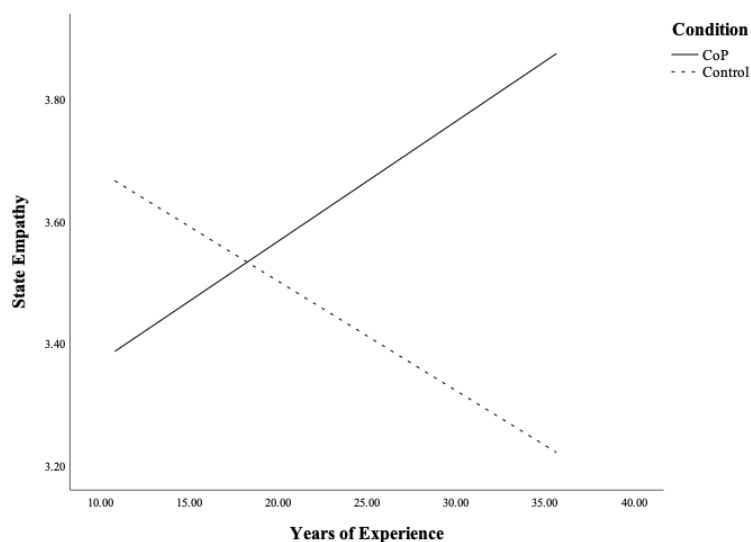
Note. State Empathy is the dependent variable. Change of Perspective as the independent variable and Years of Experience as the moderating variable.

3.2.2 Perception of Interaction

The first explorative Chi-Square test was conducted with Interaction Perspective and CoP. The results show that there is a significant association between these variables (χ^2 (2) = 6.05, $p < .05$). In this case, this outcome means that the way participants evaluate the interaction between themselves

and the group of youths is associated with Change of Perspective. So, the perspective participants have on their interaction is influenced by CoP. Figure 5 shows that participants in the CoP condition are more spread out. The number of participants that look back on the interaction from both police's perspective ($n = 7$), youths' perspective ($n = 6$) and no perspective ($n = 6$) are almost equal. In contrast, participants in the control condition evaluate the interaction more from the perspective of the group of youths ($n = 11$). Both conditions show almost the same number of participants that take no perspective while evaluating the interaction.

Specifically viewing the association between each value individually (police, youths & no perspective), it shows that the CoP condition is significantly associated with taking perspective from police officers ($\chi^2 (1) = 5.70$, $p = .02$). Participants that were in the CoP condition reviewed the interaction more from police perspective ($n = 7$) compared to participants in the control condition ($n = 1$). There is no significant association between Perspective Youths and CoP ($\chi^2 (1) = 2.66$, $p = .10$), which means that CoP is not associated with from what perspective participants reviewed the interaction between themselves and the group of youths in the VR experience. Besides that, participants taking no perspective is also not significantly associated with CoP ($\chi^2 (1) = .12$, $p = .73$). This is not an unreasonable outcome since there is only a very small difference between the CoP and control condition. Accordingly, the difference in taking the perspective of the police is significant between the CoP group and the control group, in which the CoP group took the police perspective more often.

Figure 5

Distribution Interaction Perspective for CoP and Control Condition
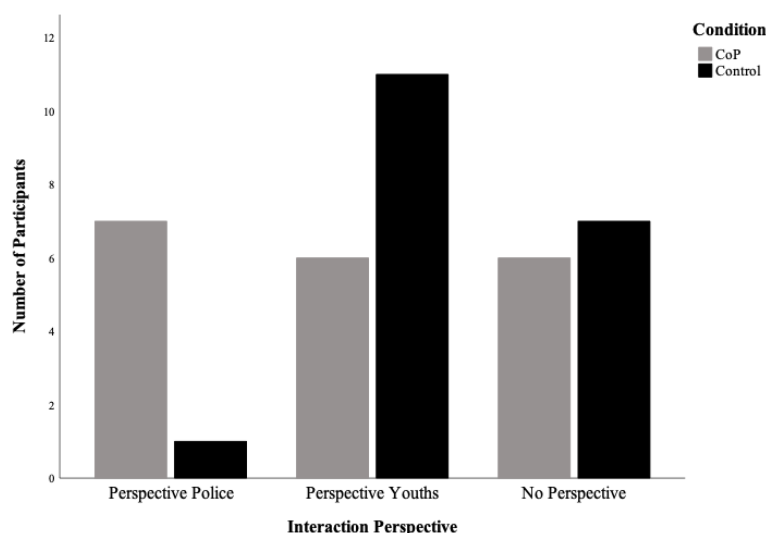
The Chi-Square test shows no significant association between Interaction Empathy and CoP ($\chi^2 (2) = 1.22$, $p = .54$). This means that there is no evidence that the level of empathy in participants' evaluation about the interaction in the VR experience is somehow related to Change of Perspective in

this study. There are small differences in empathy level per condition, but because it is tested to be insignificant, little can be said about Interaction Empathy and CoP.

3.2.3 Assessment of Satisfaction

Overall, the majority of voluntary police officers (65.8%) were satisfied with their approach in the VR game. Only 5.8% of the participants had a neutral opinion about their approach and 28.9% were not satisfied with their performance. A simple linear regression was used to predict Approach Satisfaction from CoP. Change of Perspective significantly predicted Approach Satisfaction (B = .63, t (36) = 2.25, p = 0.03). Figure 6 shows the distribution per condition in Approach Satisfaction. This shows that more police officers in the CoP condition are unsatisfied with their approach, whereas officers in the control condition are more satisfied with their own approach.

When analyzing each value separately (No, Neutral & Yes), it was found that the control group replied 'Yes' more than 'No' or 'Neutral'. Only this result is marginally significant (χ^2 (1) = 3.20, p = .07). In contrast, the CoP condition significantly answered more 'No' than 'Yes' or 'Neutral' to the question if they were satisfied with their approach (χ^2 (1) = 5.73, p = .02). Thus, the CoP group was less satisfied with their approach in comparison with the control group, who was more satisfied with their approach.

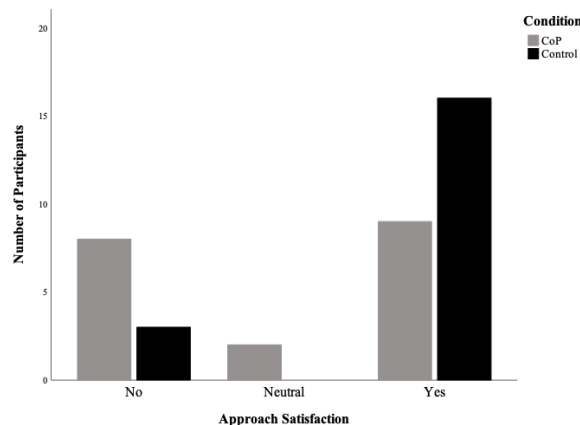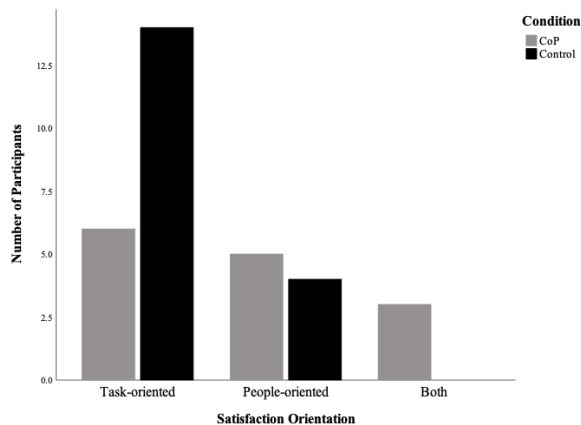**Figure 6**

Distribution CoP & Approach Satisfaction

Figure 7

Distribution Satisfaction Orientation & CoP

Satisfaction Orientation is about the way participants underpinned their (dis)satisfaction. A chi-square test was conducted with Change of Perspective and Satisfaction Orientation as variables. This analysis showed a marginally significant association between the former variables (χ^2 (2) = 5.90, p = .05). Figure 7 shows that the control group are mostly task-oriented (n = 14) than people-oriented (n = 4). In comparison, the CoP group is divided between task-oriented (n = 6) and people-oriented (n = 5). Also, only participants of the CoP group substantiate their satisfaction in both ways (n = 3).

Specifically looking at answers with 'both' orientations, it showed a significant association with CoP (χ^2 (1) = 4.26, p = .04). The same accounts for 'task oriented', with χ^2 (1) = 4.10, p = .04. The 'people oriented' value of Satisfaction Orientation with CoP is tested to not be significant (χ^2 (1) = .709, p = .40). The difference is too small between the CoP group and control group and is close to equal.

3.2.4 Reflection of Own Choices

Regarding the way participants reflected on their approach, there was no difference between the CoP group and the control group. Overall, most participants reflected on their own approach positively (n = 22). There were no participants who reflected neutral on their own approach. However, no statistical tests we able to measure a relationship between CoP and Reflection Approach.

Additionally, the relationship between Reflection Form and CoP is tested by the Chi-Square test. The CoP group shows a more emotional reflection (n = 5) compared to the control group (n = 2). In contrast, the control group reflects more factual (n = 11), whereas the CoP group reflects less factual (n = 9). Overall, it seems that participants reflected more factual (n = 20) than emotional (n = 7) on their own choices in the VR experience. This outcome, however, is not tested to be significant (χ^2 (2) = 1.82, p = .40). Hence, no evidence is found that there is a relationship between Reflection Form and Change of Perspective.

4 Conclusion and Discussion

This study failed to find main effects of Change of Perspective and Years of Experience on State Empathy, and this effect is also not dependent on Trait Empathy. Therefore, no support was found to for the hypotheses. Nevertheless, the additional analyses showed some interesting associations between Interaction and Satisfaction with Change of Perspective. From which perspective individuals evaluated the interaction between themselves and a stereotyped group correlates with CoP. Individuals with CoP generally reflect on the interaction from the police perspective, compared to individuals without CoP. Besides, Change of Perspective is a predictor of Satisfaction. Individuals with the CoP manipulation were more negative about their own approach compared to individuals without CoP who mostly reflect on their approach positively. In addition, it seems that officers without CoP substantiated their satisfaction mainly by task-oriented reasoning, whereas officers with CoP combined task and emotional aspects in their substantiation.

Furthermore, through additional analyses, an interaction effect between CoP, State Empathy, and Years of Experience was found. Years of Experience has a moderating role between CoP and State Empathy. CoP may be highly useful when a police officer has many Years of Experience because then State Empathy will increase. Contrasting to police officers with low Years of Experience, their State Empathy will decrease when CoP took place. To answer the research question, these findings imply that Change of Perspective on its own is not a clear predictor for State Empathy, but the relationship is rather moderated by Years of Experience.

Usually, people say that work experience brings knowledge that education fails to reach. In this case, it does not necessarily mean that officers with many years of experience do a better job than novice officers. Eeden et al. (2019) also found evidence that experts do not necessarily outperform students. In a certain way, the findings of this study concur with the findings of Eeden et al. (2019), where more experienced officers require CoP to increase empathy in contrast to novice officers. Increased empathy can in turn be a tool to reduce ethnic profiling (Beelmann & Heinemann, 2014). In practice, this means that CoP can be a valuable tool to reduce ethnic profiling.

As Landman and Kleijer-Kool (2016) mention, police officers select individuals from their own experience (explicit knowledge), but also from their colleagues' experiences (implicit knowledge). Experience is therefore an important aspect to gather more knowledge about. The moderating effect of experience on change of perspective and state empathy raises new questions about the underlying process of the interaction. There are several possible explanations for this effect which unfortunately cannot be clarified in this study. For example, experience could influence cognitive flexibility – the ability to reflect and adapt one's perspective and behavior (Morgan et al., 2020) – since experience can cause certain biases (Eeden et al., 2019). In addition, resistance to change – unwillingness and/or inability to change attitude, beliefs, or behavior – may also play a role (Oreg, 2003). Speculation about the influences of experience in the context of ethnic profiling makes one think of the role of conservatism and political orientation. It was found by Stephen (2020) that one's political attitudes – liberal or conservative – correlate with empathy. Liberal political views are strongly connected to empathy, in which empathy most likely causes more liberal political views (Stephen, 2020). Additionally, reflection skills could play a role, whereby officers with many years of experience might lost the ability or are less open to reflect on their own actions and adopt new behavior. Another speculation in regard to the influence of experience might be the station of police officers. Perhaps officers working in multicultural regions have different State Empathy towards stereotyped groups than officers working in regions where citizens with mostly Dutch backgrounds live. Further research should conceptualize police experience and its relationship to empathy more elaborately.

4.1 Implications and Limitations

The results show other outcomes than expected. Besides what existing literature says about the relation of perspective-taking on empathy, conversations with multiple police officers after the VR experiment indicated that the video with a change of perspective provided new insights. Off the record, they mentioned to better understand the reaction of the group of youths more after seeing the CoP video. These insights correspond with the literature. Therefore, it was expected even more that change of perspective had a positive effect on state empathy during the data collection. It is unfortunate that this study fails to find evidence for this effect, whereas multiple participants personally recognized the effect of change of perspective. Possibly, the measures were inadequate to

measure empathy. Also, the type or phrasing of questions could be insufficient in measuring empathy. In the next section, this will be elaborated on.

There are two factors that might have influenced the rejection of hypothesis 2, which expected that Trait Empathy influences the effect of Change of Perspective on State Empathy. First, it can be influenced by the small sample size of this experiment. A small sample size can decrease the statistical power and the flexibility of the effect size (De Veaux et al., 2021). Second, it can result from inadequate measurement. The output of the Empathy Assessment Index provided data on Trait Empathy, but the EAI showed mediocre reliability. This could result from removing certain statements before data collection. Besides that, 89.5% of the participants were male. Females have higher levels of empathy, which might have influenced the reliability of the EAI. A better ratio between male and female participants could be an improvement on behave of the EAI. Anyway, the relationship between Trait Empathy and other variables could be influenced by the mediocre reliability of the EAI. Other measurements of Trait Empathy could improve the reliability and thus Trait Empathy as a variable. For example, the 18-item Empathy Assessment Index is proven to be valid and reliable, but somewhat equal to the 17-item EAI which is used and adapted in this study (Inzunza, 2015). Another reliable and valid measurement of Trait Empathy is the Interpersonal Reactivity Index, which is the foundation of the EAI (Gerdes et al., 2011).

Also, the measures used were self-report tools, which have many advantages. Unfortunately, participants can answer the statements in a socially desired manner. Possibly, this can result in higher outcomes of Trait and State Empathy than participants would actually score, which affects the validity. To reduce this social desirability, participants were informed that their answers are anonymous. Also, on all pages of the questionnaire were participants encouraged to answer the statements honestly. For this reason, the influence of social-desirable answers is undeniable but is not presumed to be very strong. In this study, the big advantage of self-report measures is the possibility to collect data on behavior that is otherwise difficult to collect or observe, such as empathy.

Another possible limitation concerns the study population and possible selection bias. It is fair to take into account that the experiment only took place in the east region of the Netherlands. Possibly police officers in more multicultural regions in the Netherlands can have different outcomes, as speculated before. These officers may respond differently to the CoP manipulation due to their increased exposure and possibly negative experiences with situations similar to this VR environment. As a result, they might act out of previous experience instead of in a neutral state of mind. In addition, this study used voluntary police officers as participants in the experiment. Possibly, there could be differences between voluntary police officers and full-time police officers. Full-time police officers work more hours; hence their expertise and experiences could be different. Voluntary police officers have another job next to their police work. However, voluntary police officers engage in the same duties and responsibilities. Moreover, the education is similar and they receive equal training. The basis of their experience is mostly equal to full-time police officers. Yet, it is possible that there is a

difference between full-time and voluntary officers. If so, conclusions of this study cannot be representative for the entire police population, but only for voluntary police officers. Hence, it is recommended to also conduct research such as this with full-time police officers to view if there is a distinction. Still, these outcomes provide valuable insights in respect to state empathy and change of perspective.

4.2 Future Research Directions

The possible effect of Gender on State Empathy could not be analyzed within this experiment. Because only four participants were female, there is a lack of ground to make conclusions in respect to hypothesis 3. Nonetheless, it is recommended to study the relationship between Gender and State Empathy with respect to Change of Perspective, since previous research found evidence that Gender can influence empathy (e.g., Batson et al., 1996; Toussaint & Webb, 2005). The effect of CoP on this relationship is yet to discover.

Another interesting topic for future research regarding individual differences is the distinction between police officers in respect to guardian-warrior orientation. Officers with a guardian orientation are more focused on communication with citizens and building bridges between divides in the community, while warrior orientation is more task-focused and more positive toward the use of force (Torres et al., 2018; McLean et al., 2019). This has some overlap with variables in this study such as Satisfaction Approach and Reflection Form. New research should measure guardian-warrior orientations and include this in its analyses.

One collective cause of police officers engaging in ethnic profiling in the Netherlands, according to van der Leun and van der Woude (2011), is the increased pressure on police officers to prevent crime. Van der Leun and van der Woude (2011) note that the Dutch Government policy is focused on fear of crime and has a low tolerance of potentially dangerous individuals. It is encouraged to engage in proactive policing, which is done out of own initiative and often not based on objective justification (Harris, 2002). This pressure to prevent crime is part of the organizational culture of the Dutch police. There are most definitely more factors influencing the organizational culture within the Dutch police (e.g., male dominance, ethnic diversity, and polarization). This culture and its effect on empathy and its relationship to ethnic profiling may be intriguing to study.

The distinction between short-term and long-term effects is not in the scope of this study and is yet unclear. This study finds evidence for short-term effects on State Empathy since this was directly measured after the VR experience and CoP manipulation. However, there was no follow-up study. So, long-term effects cannot be confirmed or denied. Regarding cyberbullying behavior, for example, Barlińska et al. (2015) found significantly increasing short-term effects of perspective-taking on empathy, but only low long-term effectiveness on empathy. Accordingly, it is recommended to measure long-term effects along with short-term effects.

Since the effect of ethnic profiling can be profound, there must be a way to break the vicious cycle. Through perspective-taking, we can understand, empathize, and bridge the gaps between divided groups, potentially resulting in a fair and inclusive society in the Netherlands.

5 References

Aronson, E., Wilson, T. D., Akert, R. M., & Sommers, S. R. (2020). *Social Psychology, Global Edition* (10th ed.). Pearson.

Babbie, E. R. (2021). *The practice of social research* (15th ed.). Cengage.

Baez, S., Flichtentrei, D., Prats, M., Mastandueno, R., García, A. M., Cetkovich, M., Ibáñez, A., & Pavlova, M. A. (2017). Men, women…who cares? A population-based study on sex differences and gender roles in empathy and moral cognition. *Plos One*, 12(6). https://doi.org/10.1371/journal.pone.0179336

Barbot, B., & Kaufman, J. C. (2020). What makes immersive virtual reality the ultimate empathy machine? Discerning the underlying mechanisms of change. *Computers in Human Behavior*, 111, 106431. https://doi.org/10.1016/j.chb.2020.106431

Barlińska, J., Szuster, A., & Winiewski, M. (2015). The role of short- and long-term cognitive empathy activation in preventing cyberbystander reinforcing cyberbullying behavior. *Cyberpsychology, Behavior and Social Networking*, 18(4), 241–4. https://doi.org/10.1089/cyber.2014.0412

Batson, C. D., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar, L. L., Klein, T. R., & Highberger, L. (1997). Empathy and attitudes: Can feeling for a member of a stigmatized group improve feelings toward the group? *Journal of Personality and Social Psychology*, *72*(1), 105. https://doi.org/10.1037/0022-3514.72.1.105

Batson, C. D., Sympson, S. C., Hindman, J. L., Decruz, P., Todd, R. M., Weeks, J. L., Jennings, G., & Burns, C. T. (1996). "I've been there, too": Effect on empathy of prior experience with a need. *Personality and Social Psychology Bulletin*, 22(5), 474–482. https://doi.org/10.1177/0146167296225005

Beelmann, A., & Heinemann, K. S. (2014). Preventing prejudice and improving intergroup attitudes: A meta-analysis of child and adolescent training programs. *Journal of Applied Developmental Psychology*, 35(1), 10–24. https://doi.org/10.1016/j.appdev.2013.11.002

Berthold, A., Leicht, C., Methner, N., & Gaum, P. (2013). Seeing the world with the eyes of the outgroup — The impact of perspective taking on the prototypicality of the ingroup relative to the outgroup. *Journal of Experimental Social Psychology*, 49(6), 1034–1041. https://doi.org/10.1016/j.jesp.2013.07.007

Chrysikou, E. G., & Thompson, W. J. (2016). Assessing cognitive and affective empathy through the interpersonal reactivity index: An argument against a two-factor model. *Assessment*, 23(6), 769–777. https://doi.org/10.1177/1073191115599055

Cornet, L. J. M., den Besten, A. L., & van Gelder, J. L. (2019). *Virtual Reality en Augmented Reality in Justitiële Context.* Universiteit Twente.

Dando, C. J., & Oxburgh, G. E. (2016). Empathy in the field: Towards a taxonomy of empathic communication in information gathering interviews with suspected sex offenders. *The European Journal of Psychology Applied to Legal Context*, 8(1), 27–33. https://doi.org/10.1016/j.ejpal.2015.10.001

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85. https://www.researchgate.net/publication/34891073

Davis, M. H., Luce, C., & Kraus, S. J. (1994). The heritability of characteristics associated with dispositional empathy. *Journal of Personality*, 62(3), 369–391. https://doi.org/10.1111/j.1467-6494.1994.tb00302.x

De Veaux, R. D., Velleman, P. F., & Bock, D. E. (2021). *Stats: Data and models* (5th ed., Global). Pearson.

de Vries, P. W., Mulder, E., & van Gelder, J-L. (2021). *Evaluatie van een 360°-VR Training tegen Etnisch Profileren.* Universiteit Twente.

Duan, C., & Hill, C. E. (1996). The current state of empathy research. *Journal of Counseling Psychology*, 43(3), 261–274. https://doi.org/10.1037//0022-0167.43.3.261

Easton, M., Ponsaers, P., Demaree, C., Vandevoorde, N., Enhus, E., Elffers, H., Hutsebaut, F., & Gunther Moor, L. (2010). Politiewerk in multiculturele buurten. De beeldvorming bij burgers en agenten over gemeenschapsgerichte politiezorg. In M. van Craen (Ed.), *Meer kleur op straat. Diversiteit en veiligheid in Belgie en Nederland* (pp. 45-78). (Burger bestuur & beleid). Vanden Broele.

Eeden, C. A. J., de Poot, C. J., & van Koppen, P. J. (2019). The forensic confirmation bias: A comparison between experts and novices. *Journal of Forensic Sciences*, 64(1), 120–126. https://doi.org/10.1111/1556-4029.13817

European Commission against Racism and Intolerance. (2007). *ECRI General Policy Recommendation N° 11 on Combating Racism and Racial Discrimination in Policing.* https://rm.coe.int/ecri-general-policy-recommendation-no-11-on-combating-racism-and-racia/16808b5adf

Forsyth, D. R. (2019). *Group dynamics* (7th ed.). Cengage.

Galinsky, A. D., Ku, G., & Wang, C. S. (2005). Perspective-taking and self-other overlap: Fostering social bonds and facilitating social coordination. *Group Processes & Intergroup Relations*, 8(2), 109–124. https://doi.org/10.1177/1368430205051060

Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology*, 78, 708–724. https://doi.org/10.1037/0022-3514.78.4.708

Gerdes, K. E., Lietz, C. A., & Segal, E. A. (2011). Measuring empathy in the 21st century: Development of an empathy index rooted in social cognitive neuroscience and social justice. *Social Work Research*, 35(2), 83–93. https://doi.org/10.1093/swr/35.2.83

Gutschmidt, D., & Vera, A. (2022). Organizational culture, stress, and coping strategies in the police: an empirical investigation. *Police Practice and Research*, 23(5), 507–522. https://doi.org/10.1080/15614263.2021.1958683

Hargrove, A., Sommer, J. M., & Jones, J. J. (2020, August). Virtual reality and embodied experience induce similar levels of empathy change: Experimental evidence. *Computers in Human Behavior Reports*, 2, 100038. https://doi.org/10.1016/j.chbr.2020.100038

Harris, D.A. (2002). *Profiles in injustice. Why racial profiling cannot work*. New York: The New Press.

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A Regression-Based Approach*. Guilford Publications.

Inzunza, M. (2015). Adaptation and development of the Empathy Assessment Index (EAI). *International Journal of Comparative and Applied Criminal Justice*, 39(3), 239–255. https://doi.org/10.1080/01924036.2014.989245

Jens, E. P. (2019). A values-based methodology in policing. *Nordic Journal of Applied Ethics*, 13(1). https://doi.org/10.5324/eip.v13i1.2547

Kassin, S. M., Fein, S., & Markus, H. R. (2021). *Social psychology* (11th ed.). Cengage Learning.

Konrath, S., Meier, B. P., & Bushman, B. J. (2018). Development and validation of the single item trait empathy scale (sites). *Journal of Research in Personality*, 73, 111–122. https://doi.org/10.1016/j.jrp.2017.11.009

Ku, G., Wang, C. S., & Galinsky, A. D. (2015). The promise and perversity of perspective-taking in organizations. *Research in Organizational Behavior*, 35, 79–102. https://doi.org/10.1016/j.riob.2015.07.003

Landman, W., & Kleijer-Kool, L. (2016). Politiewetenschap 91 - *Boeven vangen: Een onderzoek naar proactief politieoptreden* (1st ed.). Reed Business Education.

Lietz, C. A., Gerdes, K. E., Sun, F., Geiger, J. M., Wagaman, M. A., & Segal, E. A. (2011). The Empathy Assessment Index (EAI): A Confirmatory Factor Analysis of a Multidimensional Model of Empathy. *Journal of the Society for Social Work and Research*, 2(2), 104–124. https://doi.org/10.5243/jsswr.2011.6

McLean, K., Wolfe, S. E., Rojek, J., Alpert, G. P., & Smith, M. R. (2019). Police officers as warriors or guardians: Empirical reality or intriguing rhetoric? *Justice Quarterly*, 37(6), 1096–1118. https://doi.org/10.1080/07418825.2018.1533031

Morgan, R., Alison, L., Palace, M., Shortland, N., & Humann, M. (2020). The effects of intelligence and personality on performance in simulated interrogation scenarios. *Journal of Police and Criminal Psychology: The Official Journal of the Society for Police and Criminal Psychology*, 37(2), 271–278. https://doi.org/10.1007/s11896-020-09411-0

Oreg, S. (2003). Resistance to change: developing an individual differences measure. *The Journal of Applied Psychology*, 88(4), 680–93. https://doi.org/10.1037/0021-9010.88.4.680

Peck, T. C., Seinfeld, S., Aglioti, S. M., & Slater, M. (2013). Putting yourself in the skin of a black avatar reduces implicit racial bias. *Consciousness and Cognition*, 22, 779–787. https://doi.org/10.1016/j.concog.2013.04.016

Pronin, E., & Kugler, M. B. (2007). Valuing thoughts, ignoring behavior: The introspection illusion as a source of the bias blind spot. *Journal of Experimental Social Psychology*, 43(4), 565–578. https://doi.org/10.1016/j.jesp.2006.05.011

Schlosser, M. D., Jennifer, K. R., Daniel, M. B., & Konstantinos, P. (2021). Confirmation bias: A barrier to community policing. *Journal of Community Safety and Well-Being*, 6(4), 162–167. https://doi.org/10.35502/jcswb.219

Seppala, E., Simon-Thomas, E., Brown, S. L., Worline, M. C., Cameron, C. D., & Doty, J. R. (Eds.). (2017). *The oxford handbook of compassion science* (Ser. Oxford handbooks online). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190464684.013.3

Shen, L. (2010). On a scale of state empathy during message processing. *Western Journal of Communication*, 74(5), 504–524. https://doi.org/10.1080/10570314.2010.512278

Stephen, G. M. (2020). Empathy and the liberal-conservative political divide in the u.s, 8(1), 08–24. https://doi.org/10.5964/jspp.v8i1.1102

Tassinari, M., Aulbach, M. B., Jasinskaja-Lahti, I., & Vianello, M. (2022). The use of virtual reality in studying prejudice and its reduction: A systematic review. *Plos One*, 17(7). https://doi.org/10.1371/journal.pone.0270748

Torres, J., Reling, T., & Hawdon, J. (2018). Role conflict and the psychological impacts of the post-ferguson period on law enforcement motivation, cynicism, and apprehensiveness. *Journal of Police and Criminal Psychology: The Official Journal of the Society for Police and Criminal Psychology*, 33(4), 358–374. https://doi.org/10.1007/s11896-018-9284-y

Toussaint, L., & Webb, J. R. (2005). Gender differences in the relationship between empathy and forgiveness. *The Journal of Social Psychology*, 145(6), 673–685. https://doi.org/10.3200/SOCP.145.6.673-686

Wang, C. S., Lee, M., Ku, G., & Leung, A. K.-y. (2018). The cultural boundaries of perspective-taking: When and why perspective-taking reduces stereotyping. *Personality and Social Psychology Bulletin*, 44(6), 928–943. https://doi.org/10.1177/0146167218757453

Wijma, E. M., Veerbeek, M. A., Prins, M., Pot, A. M., & Willemse, B. M. (2018). A virtual reality intervention to improve the understanding and empathy for people with dementia in informal caregivers: results of a pilot study. *Aging & Mental Health*, 22(9), 1115–1123. https://doi.org/10.1080/13607863.2017.1348470

van der Leun, J. P., & van der Woude, M. A. H. (2011). Ethnic profiling in the Netherlands? A reflection on expanding preventive powers, ethnic profiling and a changing social and political context. *Policing and Society*, 21(4), 444–455. https://doi.org/10.1080/10439463.2011.610194

van Loon, A., Bailenson, J., Zaki, J., Bostick, J., & Willer, R. (2018). Virtual reality perspective-taking increases cognitive empathy for specific others. *Plos One*, 13(8), e0202442. https://doi.org/10.1371/journal.pone.0202442

6 Appendix

APPENDIX 1 – Demographic Questions

1. What is your gender?

   O Male   O Female   O Other

2. What is your age?

3. How many years are you working at the Dutch National Police?

APPENDIX 2 – Empathy Assessment Index

1= never; 2 = rarely; 3 = sometimes; 4 = frequently; 5 = always.

1. I can imagine what it's like to be in someone else's shoes. (PT)
2. I am aware of my thoughts. (SOA)
3. Watching a happy movie makes me feel happy. (AR)
4. I can tell the difference between someone else's feelings and my own. (SOA)
5. When I am with a happy person, I feel happy myself. (AR)
6. When I am upset or unhappy, I get over it quickly. (ER)
7. I can explain to others how I am feeling. (SOA)
8. I can agree to disagree with other people. (PT)
9. Emotional evenness describes me well. (ER)
10. Friends view me as a moody person. (ER) – *Reversed scored*
11. I can imagine what the character is feeling in a well written book. (PT)
12. Hearing laughter makes me smile. (AR)
13. I watch other people's feelings without being overwhelmed by them. (ER) – *Reversed scored*
14. I can simultaneously consider my point of view and another person's point of view. (PT)

APPENDIX 3 – State Empathy Scale

(1 = "not at all," and 5 = "completely")

Affective Empathy:

1. The character's emotions are genuine.
2. I can feel the character's emotions.

Cognitive Empathy:

3. I can see the character's point of view.
4. I recognize the character's situation.
5. I can understand what the character was going through in the video.
6. The character's reactions to the situation are understandable.

Associative Empathy:

7. I can relate to what the character was going through in the video.

8. I can identify with the situation described in the video.

9. I can identify with the characters in the video.