



**Beyond WEIRD witnesses: Eyewitness memory reports in cross-cultural settings**

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2020

This thesis is submitted in partial fulfillment of the requirements for the award of the degree  
of Doctor of Philosophy of the University of Portsmouth



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This research is supported by a fellowship awarded from the Erasmus Mundus Joint Doctorate Program The House of Legal Psychology (EMJD-LP) with Framework Partnership Agreement (FPA) 2013-0036 and Specific Grant Agreement (SGA) 532473-EM-5-2017-1-NL-ERA MUNDUS-EPJD to Nkansah Anakwah.

### Abstract

Investigators will inevitably interview eyewitnesses from different cultures. Because eyewitnesses are not immune to the influences of their respective cultures, they may bring culturally determined reporting norms into the forensic setting. This thesis set out to determine whether there are cultural differences in eyewitness memory reports. Four experiments were conducted to examine this overarching aim. Based on the individualistic-collectivistic cultural framework, mock witnesses were sampled from cultures representing the individualistic-collectivistic cultural orientations. In Experiment 1, cultural differences in the content and nature of eyewitness memory reports was examined. Mock witnesses ( $N = 200$ ) were sampled from Ghana and The Netherlands, representing collectivist and individualist cultures respectively, and provided memory reports about a stimuli event. Experiment 1 provided initial evidence of cultural differences in eyewitness memory reports such that individualistic mock witnesses reported more details about the event than did collectivistic culture mock witnesses. Experiment 2 examined whether migrating and adapting in a new cultural environment shapes the content and nature of eyewitness memory reports. Again, using a mock witness paradigm, participants ( $N = 107$ ) were sub-Saharan African migrants in Western Europe and sub-Saharan Africans living in Africa. The results of Experiment 2 provided further evidence in support of the role of culture in shaping eyewitness memory reports, with sub-Saharan African migrants in Western Europe providing more elaborate details than did sub-Saharan Africans living in Africa. In Experiment 3, the role of culture in the susceptibility to misinformation effect was examined. Using a misinformation paradigm, participants ( $N = 127$ ) from Ghana and the United Kingdom provided memory reports about a witnessed event. The results suggest that culture plays a role in the extent of the misinformation effect such that mock-witnesses with collectivistic

cultural background endorsed misleading details more than mock witnesses with an individualistic cultural background. The final experiment conducted for this programme of research, Experiment 4, examined whether cultural differences in relating with authority figures play any role in the reports provided by eyewitnesses. Participants ( $N = 115$ ) sampled from Ghana and the Netherlands provided memory reports either in an authority or a non-authority witness reporting context. The results of Experiment 4 suggest that interviewer authority impacts eyewitness memory reports differently across different cultures, such that eyewitness memory reports of mock witnesses with individualistic cultural background was enhanced when reporting in an authority context, whereas eyewitness memory reports of mock witnesses with collectivistic cultural background was impeded when reporting in an authority context. In consolidating the findings across experiments, the methodological challenges in conducting cross-cultural applied research are examined along with the implications of the findings for the conduct of investigative interviews in cross-cultural settings.

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### **Abbreviations**

ANOVA: Analysis of variance

ARS: Acquiescence Response Style

BF<sub>01</sub>: Bayes factor expressed as evidence in favour of the null hypothesis

BF<sub>10</sub>: Bayes factor expressed as evidence in favour of the alternate hypothesis

CI: Cognitive interview

ERS: Extreme Response Style

FLT: Framed-line test

HC: Horizontal collectivism

HI: Horizontal individualism

ICC: International Criminal Court

ICC: Intra-Class Correlation

PEI: Post-event information

PD: Power distance

RFT: Rod-and-frame test

SDR: Social Desirability Responding

VC: Vertical collectivism

VI: Vertical individualism

WEIRD: Western, Educated, Industrialised, Rich, and Democratic

**Declaration**

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

Word count: 46,161

### **Acknowledgments**

As has been expressed in a Ghanaian proverb, ‘a person is not a palm tree that he should be self-sufficient’. I could not have come this far without the support I received throughout the journey. Words are not enough to express how grateful I am for the people whose immense support has brought me this far.

I am thankful to my mum and late dad for their nurture, love, and sacrifice. To my siblings, Ohemeng, Maud, and Nana, as well as my entire family and friends in Ghana and across the world, I am grateful for your love and support.

I deeply appreciate my amazing supervisory team, Professor Lorraine Hope, Dr. Robert Horselenberg, and Professor Peter van Koppen. You inspired, encouraged, guided, and supported me throughout the journey. I am grateful for the time and resources you invested in mentoring me. I have learnt a lot and still learning, from your wealth of knowledge in the field. You have also been a source of social support and provided tips for adapting and having a fruitful period in the course of the programme in Europe. I am also thankful to Dr. James Ost for his inspiration and helpful feedback on part of the project.

I am grateful to Dr. Margaret Amankwah-Poku for helping facilitate ethical application at the University of Ghana. To the research assistants I worked with in Ghana, the Netherlands, and United Kingdom – Melody, Benjamin, Isaac, Wendy, Manouk, Michael, Nicole, Ruben, Gemma, and Rosemary – I appreciate you all for your diligence and support.

I would like to thank Rev. Emmanuel Oppong Peprah, his family, and the entire community of Akyem Aduasa for welcoming me into the community and the kind hospitality shown during my stay and data collection in the community.

I am thankful to previous cohorts in the House of Legal Psychology for their inspiration and encouragement. I also want to say thank you to my cohort – Bruna, Carrey, Enide, Jennifer, and Min – for the times we shared. Chantal, thank you for such immense support, tips, and chats. I am also thankful to Liz, the administrative support, and technicians in Portsmouth. I am indebted to the entire team of the House of Legal Psychology for the rich workshops, lectures, and training they provided during the various summer and winter schools.

Without the generous funding from the European Union and the House of Legal Psychology, this project would not have been a success. I am eternally grateful.

### Dissemination

#### Publications:

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J.

(2020b). The acculturation effect and eyewitness memory reports. *Legal and Criminological Psychology*, 25 (2), 237 – 256. <https://doi.org/10.1111/lcrp.12179>

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J.

(2020a). Cross-cultural differences in eyewitness memory reports. *Applied Cognitive Psychology*, 34 (2), 505 – 515. <https://doi.org/10.1002/acp.3637>

**Anakwah, N.** (in press). Cross-cultural differences: Implications for legal psychology. In R.

Horselenberg, V. van Koppen, & J. de Keijser (Eds.), *Bakens in de Rechtspsychologie* [Beacons in Legal Psychology]: *Liber Amicorum Peter van Koppen*. Boomuitgevers.

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J. The effect of authority on eyewitness memory reports across cultures. Manuscript in preparation.

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J. The misinformation effect and eyewitness memory reports: A cross-cultural investigation. Manuscript in preparation.

#### Conference presentations:

**Anakwah, N.**, Horselenberg, R., Hope, L. & Van Koppen, P. J (2020, November). *The effect of authority on eyewitness memory reports*. Paper presented at the virtual symposium, Psychology from a cross-cultural perspective.

**Anakwah, N.,** Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J. (2020, November). *Culture matters for eyewitness memory reports*. Poster paper presented at the virtual Culture and Cognition preconference of the Psychonomic Society.

**Anakwah, N.** (2020, May). *Eyewitness memory reports across cultures*. Paper presented at the Zoom-Psychology and Law Symposium.

**Anakwah, N.,** Horselenberg, R., Hope, L. & van Koppen, P (2019, July). *The acculturation effect and eyewitness testimony among sub-Saharan African migrants*. Paper presented at the European Association of Psychology and Law conference, Santiago de Compostela, Spain.

**Anakwah, N.,** Horselenberg, R., Hope, L. & van Koppen, P. J (2019, June). *Where I come from and what I report: Cultural influences on eyewitness memory*. Paper presented at the conference of the Society for Applied Research in Memory and Cognition, Cape Cod, Massachusetts, USA.

**Anakwah, N.,** Horselenberg, R., Hope, L. & van Koppen, P (2018, June). *Cultural influences on eyewitness testimony*. Poster session presented at the European Association of Psychology and Law conference, Turku, Finland.

## **Chapter 1: General Introduction**

## **Introduction**

Laurent Gbagbo, former President of Cote D'Ivoire, together with his right-hand man, Charles Ble Goude, a former political youth movement leader, were charged with crimes against humanity at the International Criminal Court (ICC) in 2011. The pair were linked to post-electoral violence in Cote D'Ivoire during 2010-2011 that led to the death of over 3000 people. The Office of the Prosecutor at the ICC commenced an investigation into the alleged heinous crimes. In the course of the trial, 82 prosecution witnesses from Cote D'Ivoire, a country in West Africa, were presented before the court (Goldstone, 2019; Rosenberg, 2017). Each of these witnesses had been interviewed by investigators in order to obtain an account of what they had seen or known about the defendants. As these witnesses had been socialised in a sub-Saharan cultural context, they may bring culturally determined reporting norms into the interview context. To date, no research has focused on cross-cultural differences that might emerge for eyewitnesses in this particular reporting context. Thus, a lack of insight as to how sub-Saharan African witnesses normatively report about such events may have impeded investigators' efforts at eliciting memory reports.

This challenge faced by investigators at the ICC is an emerging challenge for all investigators. Increasing trends in migration and globalisation (United Nations Population Division, 2019) have resulted in increased cross-cultural contacts in formal interviewing settings (e.g., law enforcement and immigration settings). This increase in cross-cultural interactions makes it more likely for legal professionals to interview an eyewitness, victim, suspect, or asylum seeker from a cultural background different from that of the legal professional. Such interviewees may have been socialised in their respective cultures, hence, they are likely to bring into the criminal justice setting, behaviours consistent with their cultural norms.



Without insight into how their cultural backgrounds impact their report from memory about witnessed events, efforts at eliciting eyewitness memory reports in such cross-cultural contexts may be impeded. That may have implications for legal decision-making and justice delivery. There is, therefore, the need for an increased understanding of how culture shapes eyewitness memory reports among legal professionals. For example, within the healthcare context, research shows that expression of pain and other behaviours vary between cultures (Liao, Henceroth, Lu, & LeRoy, 2016). Therefore, it has been suggested that healthcare providers need to understand cultural influences on pain and behaviours of patients better in order to deliver efficient healthcare (Callister, 2003; Sowattanangoon, Kotchabhakdi, & Petrie, 2009). Similarly, an increase in cross-cultural understanding would enhance the efficiency of legal and investigative professionals (Giebels, Oostinga, Taylor, & Curtis, 2017). Specifically, understanding of cultural influences on behaviour and psychological functioning would be beneficial for legal and investigative professionals working in diverse areas such as asylum seeker contexts, international criminal justice settings, law enforcement contexts, and counter-terrorism settings (Beune, Giebels, & Taylor, 2010; De Bruïne, Vredeveltdt, & Van Koppen, 2018; Hope & Gabbert, 2019; Kleinman, 2006; Van Veldhuizen, Maas, Horselenberg, & van Koppen, 2018).

### **Beyond WEIRD witnesses: Eyewitness memory reports across cultures**

Despite the fact that eyewitnesses have been socialised in their respective cultures and that psychological processes may not be universal, the vast majority of research on eyewitness memory has relied on western samples. In fact, over 94% of psychological research published in top psychology journals used western samples (Henrich, Heine, & Norenzayan, 2010; Rad, Martingano, & Ginges, 2018). What we know about eyewitness memory reports is mostly conclusions drawn from WEIRD (Western, Educated,

Industrialised, Rich, and Democratic; Henrich, Heine, & Norenzayan, 2010) samples. Such conclusions have usually been generalised to witnesses from less WEIRD populations. Generalising findings from studies on eyewitness memory conducted with individuals from western cultures to other cultural groups may be problematic. Overreliance on WEIRD samples may result in missing other important variations in psychological processes (Henrich et al., 2010). Given this important shortcoming, there have been a number of calls for improvement in psychological science by understanding the psychological functioning of less WEIRD cultures (Brady, Fryberg, & Shoda, 2018). Gelfand, Harrington, and Jackson (2017), for example, have recently called for psychological research to go beyond western borders, to enhance understanding of cultural variations in behaviour.

Currently, there is a particular dearth of research on whether a witnesses' culture of socialisation impacts their eyewitness memory reports. To date, knowledge about how individuals socialised in non-western cultures formulate their eyewitness memory reports is almost entirely absent. As a result, investigative professionals eliciting memory reports in cross-cultural contexts have limited understanding of cultural factors that may impact information elicitation. An insight into the eyewitness memory reports of individuals from non-western cultures may help improve the effectiveness of investigative interviews in cross-cultural contexts. For example, insight into how culture shapes eyewitness memory reports could help in developing culturally sensitive techniques when eliciting memory reports. Research on how witnesses from non-western cultures formulate their eyewitness memory reports may be beneficial in developing techniques based on findings from such research, as current techniques used in obtaining memory reports were mostly developed based on research with western samples.

### **Aims of the current thesis**

The overarching aim of this thesis is to examine the content of memory reports provided by witnesses from different cultures. The first aim of the thesis was to examine whether individuals socialised in different cultures differ in the content of their eyewitness memory reports. The second aim of the thesis was to examine whether adaptation in a new cultural environment would impact the content of eyewitness memory reports. The third aim was to examine whether cultural background plays any role in susceptibility to the misinformation effect. The final aim of the thesis was to examine whether cross-cultural differences with respect to relating to authority figures play any role in the content of eyewitness memory reports.

In this introductory chapter, I provide a general overview of this research area and discuss key concepts and frameworks in cross-cultural psychology relevant to the current programme of work. Drawing on these concepts, I examine how socialisation in different cultures shape behaviour and psychological functioning. I also consider the implications of these cross-cultural differences for cognition and eyewitness memory reports.

### **The concept of culture**

Culture involves the collective programming of the mind of a people group, that distinguishes them from members of other groups (Gyekye, 2002; Hofstede, 2011). In his seminal work *Primitive Culture* published in 1871, Edward Tylor defined culture to be a complex whole embodying belief, knowledge, custom, arts, morals, and any habits and traditions that members of a society acquire (Altarriba, 1993). These knowledge structures arise from the histories and experiences of the cultural group. Thus, the histories and experiences of a people group evolve into norms and values over the years (Bhugra, 2004; Brady et al., 2018; Triandis, 2001). Such norms and values then shape social relationships,

family systems, and other social practices within that cultural group (Amos, 2013; Istomin, Panáková, & Heady, 2014; Nisbett & Masuda, 2003).

The manifestations of a group's culture include their symbols, heroes, rituals, and maxims (Hofstede, 2010). For example, present at a museum in Ghana, West Africa, are artefacts depicting the cultural values of the Akan ethnic group (Hess, 2003). Among the artefacts present at this museum is an emblem of two crocodiles called *funtunfunafu ne denkyemfunafu* (conjoined crocodiles), lying perpendicular across each other with a conjoined stomach. Popularly called *Adinkra* symbol, that artefact is said to signify the communal orientation or oneness of the people (Kuwornu-Adjaottor, Appiah, & Nartey, 2016). More specifically, the significance of that artefact to the ethnic group is to highlight the fact that as individual members of the society, they are intricately connected to each other and interdependent (Quaynor, 2018). Also exhibited at the museum is another artefact showing a group of individuals carrying the same bowl together called *abusua ayowa* (clan bowl), signifying the togetherness and the collective spirit of the Akan people (Boakyewaa, 2008). These artefacts capture a particular set of cultural values and, specifically, depict the importance the ethnic group places on communal living. Such communalism has been illustrated by an Akan maxim 'a person is not a palm tree that he should be self-complete' (Gyekye, 2002, p. 300).

The communal lifestyle of the Akan ethnic group in Ghana is typical of many sub-Saharan African societies. In his influential work profiling the culture of the Igbo ethnic group of Nigeria, for example, Uchendu (2007) described the Igbo people as having a holistic culture, with complex social relationships. Individuals from such cultures mostly remain loyal to the extended family system, and the raising of a child is traditionally a collective responsibility of the community (Amos, 2013). Marriage in such societies is considered an

arrangement that does not only bring two individuals together but their families or clans as well (Kalule-sabiti, Palamuleni, Makiwane, & Amoateng, 2007). Uchendu (2007) argued that such social structure shapes and conditions their worldview. Also writing on African personhood, Gyekye (2002) noted that members of the Gikuyu ethnic group of Kenya, East Africa do not consider themselves as isolated individuals but rather a relative of several people and that the personal pronoun 'I' is rarely used in social gatherings. The sub-Saharan African view of the person is summed up in the maxim 'I am, because we are; and since we are, therefore I am' (Menkiti, 1984, p. 171). The social complexity observed in cultural groups in sub-Saharan Africa is less evident in other cultures, such as Western Europe where, for example, the nuclear family system rather than extended family model, tends to dominate.

In light of broadly observable cultural differences, Hofstede and colleagues proposed a useful framework for the consideration and exploration of such differences (Hofstede, 1983, 2011; Hofstede & Bond, 1988). This framework of national cultures provides a theoretical foundation for exploring cross-cultural differences among people groups, and cultural differences in the complexity of social structures features prominently. The work on the classification of national cultures was based on extensive research on attitudinal surveys in over 70 countries across the world (Hofstede, 1983; Hofstede, Hofstede, & Minkov, 2010).<sup>1</sup> Based on similarities that emerged consistently across countries, six dimensions of national cultures (Power distance, individualism-collectivism, uncertainty avoidance, masculinity-femininity, long term orientation, and indulgence-restraint) were distilled, with countries ranking from high to low on these dimensions (Hofstede, 1983, 2011; Hofstede & Bond,

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<sup>1</sup> Data on Hofstede's dimensions has been updated to 111 countries as at 2016. See Hofstede's insight database at <https://www.hofstede-insights.com/product/compare-countries/>

1988). In this thesis, I draw on two of these cultural dimensions – power distance and individualism-collectivism – and examine their implications for eyewitness memory reports.

### **Power distance: Cross-cultural differences in relating to authority figures**

The power distance (PD) dimension concerns the extent to which the less powerful members in society expect and accept the unequal distribution of power, with regards to social status, wealth, rights and privileges, and respect (Hofstede, 2001; Sharma, 2010). In low PD cultures, there is less emphasis on hierarchy in social relationships and those in authority mostly treat other members of the social group as equals. For example, within an organisational context, subordinates in low PD cultures actively participate in decision making and there is less gap in communication with authority figures (Khatri, 2009). In high PD cultures, however, hierarchy in social relationships is mostly emphasised. For example, high PD cultures value respect and deference to people of higher status, and decisions are mostly made by those at the top hierarchy (Basabe & Ros, 2005). The hierarchy in high PD cultures extends into familial relationships. For example, in the upbringing of children, parents in high PD cultures emphasise obedience, respect, and fear for the elderly and people in authority. Research suggests that children in such cultures are more likely to receive physical punishment, more directives, and are less likely to be engaged in conversation with adults (Henrich et al., 2010; Wang, 2006). Hence, people socialised in high PD cultures become more predisposed and sensitive to hierarchy and status in their social relationships, than people socialised in low PD cultures.

The extent of power distance may determine the amount of information provided to authority figures in social interactions (Bialas, 2009; Rhee, Dedahanov, & Lee, 2014). Specifically, for individuals socialised in high PD cultures, interacting with authority figures may impede spontaneous provision of information than individuals socialised in low PD

cultures (Ghosh, 2011). Individuals socialised in high PD cultures have been shown to engage more in mitigated speech, are less direct and less explicit, and are more apprehensive when communicating with authority figures (Koc, 2013; Madlock, 2012). It may be the case that sensitivity to power differentials by witnesses with high PD cultural backgrounds may hamper reports made in forensic contexts. That is because investigative interviews with witnesses are conducted by an interviewer (e.g., police detective) who assumes an authority status. In cross-cultural settings, sensitivity to such power differentials may have implications for eliciting eyewitness memory reports during investigative interviews. The cultural dimension of power distance is related with the individualism-collectivism cultural dimension (Basabe & Ros, 2005; Hofstede, 2011; Minkov et al., 2017). Specifically, these previous research suggest most collectivistic cultures have a high-PD whereas most individualistic cultures have a low-PD. Both dimensions are the most important cultural dimensions regarding social relationships (Basabe & Ros, 2005). This is because, among the dimension of national cultures, power distance and individualism-collectivism are those directly related to social interactions.

### **Individualism-Collectivism**

The individualism-collectivism cultural dimension is the degree to which individuals in a society are integrated into social groups (Hofstede, 1983; Hofstede et al., 2010). Essentially, that dimension entails the extent to which individual members of a society are embedded in social relationships. According to Hofstede (2001), the relationship among individuals is loose in individualistic cultures, as individuals from such cultures are less embedded in a web of social relations. He argues that in such cultures an individual is expected to look after his or her own self, and to an extent his or her immediate family. Individualistic cultures include cultures in North America, Australia, and Western Europe

(Basabe & Ros, 2005; Piyush Sharma, 2010). People in collectivistic cultures, however, are socialised into a strong cohesive in-group right from birth. According to the framework, they tend to be more embedded in a web of social relationships, and relationships among individuals are tight. Individuals in collectivistic cultures are born into an extended family or clan and the raising of a child is seen as a communal responsibility. That has been typified by an African proverb 'it takes a village to raise a child' (Seymour, 2013). Individuals remain loyal to the cohesive in-group right from birth, in exchange for unquestioning loyalty in return (Hofstede, 2011; Sharma, Zhan, & Su, 2016). Thus, in such societies, it is expected that members prioritise the opinions, interests, and preferences of the group above their own (Amer, Ngo, & Hasher, 2017; Basabe & Ros, 2005; Markus & Kitayama, 1991).

Collectivism is related with values such as tradition and conformity (Piyush Sharma, 2010). Asian, South American, and African cultures are examples of collectivistic cultures (Basabe & Ros, 2005; Hofstede et al., 2010). The individualism-collectivism cultural dimension has been used extensively in research in cross-cultural psychology to describe, explain, and, predict cultural differences in socialisation, values, attitudes, communication, self-construal, and cognition (Green, Deschamps, & Páez, 2005; Schimmack, Oishi, & Diener, 2005).

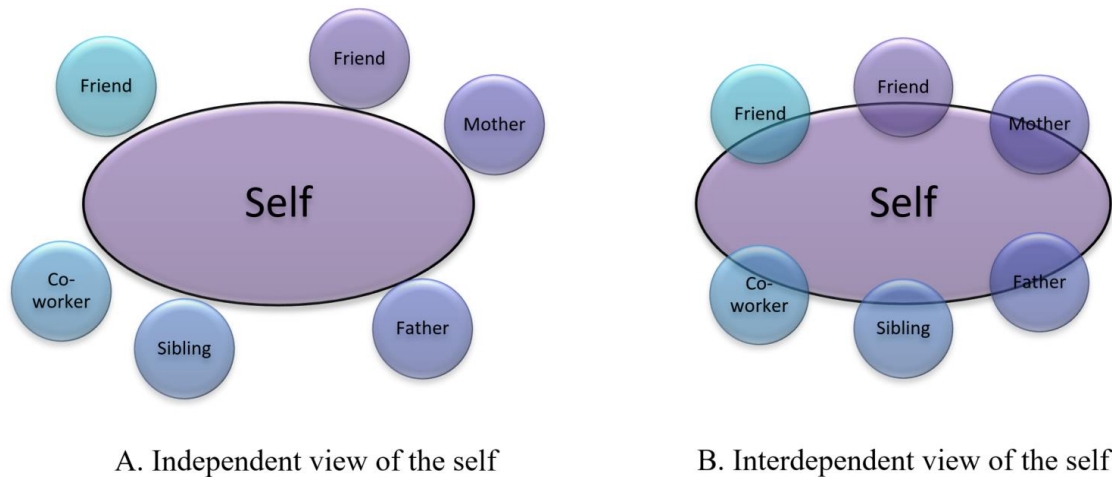
### **Self-construal: The independent-interdependent view of the self**

The individualism-collectivism cultural dimension has been proposed to systematically shape the construal of the self (Markus & Kitayama, 1991). Self-construal refers to the meaning individuals ascribe to the self in relation to others (Cross, Hardin, & Gercek-Swing, 2011). Through interaction with others and the cultural environment, one develops a schema of the self that is consistent with the cultural context (Markus & Kitayama, 2003; Pilarska, 2014). Markus and Kitayama (1991) developed a comprehensive theory describing this phenomenon presented in their seminal paper about how culture shapes



self-construal. Self-construal theory is currently the dominant framework for studying culture and memory (Gutchess & Sekuler, 2019). In self-construal theory, Markus and Kitayama (1991) argue that depending on the social context an individual is socialised, the individual develops either an independent or an interdependent construal of the self. Specifically, they argue that individuals socialised in individualistic cultures develop an independent self-construal, whereas those socialised in collectivistic cultures develop an interdependent self-construal.

According to Markus and Kitayama (1991), the notion of an independent self is grounded in the belief that each individual in the society is whole and unique. They argue that an individual socialised in an individualistic culture develops a schema of the self as inherently and separately distinct from others and the social context (see Figure 1.1A). Consequently, the self is viewed as more autonomous, independent, and possesses unique dispositions and attributes. Due to that, proponents of the self-construal theory also argue that for individuals with an independent view of the self, life is organised and made more meaningful by focusing on one's own feelings, thoughts, and actions. Markus and Kitayama (1991) further assert that the independent self is responsive to the social environment and that this social responsiveness stems from the need for individuals with the independent self-construal to look for avenues or best ways to express their unique dispositions. As a result, they argue individuals with independent self-construal become more self-assertive, expressive, and less restrained (Takata, 2003; Yamagishi, Hashimoto, & Schug, 2008), a phenomenon referred to as self-enhancement. Self-enhancement is judged as more desirable in individualistic cultures, as individuals are seen in a more positive light when they self-enhance and express themselves confidently (Markus & Kitayama, 1991; Takata, 2003).



*Figure 1.1.* Conceptual representation of the self (A. Independent construal, B. Interdependent construal; Markus & Kitayama, 1991).

Markus and Kitayama (1991) also argue in their theory that individuals socialised in collectivistic cultures develop an interdependent self-construal. According to the model, individuals socialised in collectivistic cultures develop a schema of the self as inherently connected to or interdependent with others in the social context (see Figure 1.1B). They argue that interactions with others in collectivistic cultures are guided by culturally prescribed tasks that require adjusting to others, fitting in with others, and using others as a reference for actions. As a result, they assert that the behaviour of individuals socialised in such cultures is based to a large extent on the feelings, thoughts, and actions of other people in the social context (Markus & Kitayama, 1991, 2010). Markus and Kitayama (2010), however, note that an interdependent construal of the self does not necessarily mean that individuals cannot express their unique attributes or function effectively without being in the company of other people. Rather, they argue it takes a high degree of self-control in restraining one's unique attributes, dispositions, and preferences. They argued that in cultures that emphasise the interdependent view of the self, individuals are seen in more positive light if they do not self-assert their unique traits and dispositions (Masuda, Ellsworth, et al., 2008). As a consequence

individuals from such cultures are more likely to emphasise modesty in self-presentation, a phenomenon referred to as self-effacement (Suzuki, Davis, & Greenfield, 2008; Takata, 2003).

### **Cross-cultural differences: Implications for cognition**

The independent-interdependent self-construal has implications for cultural differences in cognitive processes (Gutchess & Sekuler, 2019; Kurman, 2010; Norenzayan & Nisbett, 2000). Specifically, it has been argued that individuals with independent self-construal develop an analytic perception. Analytic perception has been defined as the tendency to focus on the attributes and characteristics of an object to assign it to categories or a tendency to engage in context-independent perceptual processes (Nisbett, Choi, Peng, & Norenzayan, 2001). Conversely, it has been suggested that individuals with an interdependent self-construal develop a holistic perception (Nisbett et al., 2001). Holistic perception is the orientation to the context of an event, where individuals become predisposed to focus broadly on contextual details (Miyamoto, Nisbett, & Masuda, 2006; Uskul, Nisbett, & Kitayama, 2008).

Research in cross-cultural cognition has provided evidence consistent with the analytic-holistic cognitive styles (Chua, Boland, & Nisbett, 2005; Park & Huang, 2010). Specifically, it has been suggested in those research that cognitive processes across cultures may vary. In a classic study, the rod-and-frame test (RFT) was used to examine cross-cultural differences in analytic-holistic cognition (Peng, & Nisbett, 2000). The rod-and-frame test is an apparatus that has a frame as well as a rod that is located inside the frame, which can be rotated independently of the frame. The rod was turned around in the frame and participants were asked to indicate when the rod appears vertical. Participants are considered field-independent if they accurately judge the verticality of the rod when it is turned around in the

frame. Similarly, participants are regarded as field-dependent if they make errors in judging the verticality of the rod when turned around in the frame. The authors found that Americans were more accurate on the RFT, showing they were less field-dependent than East Asians, who made more errors on the task.

That finding on cross-cultural differences in analytic-holistic cognition has been corroborated in research using a different paradigm. For example, in a research using the classic framed-line test (FLT), participants were shown a square frame within which a vertical line had been drawn (Kitayama, Duffy, Kawamura, & Larsen, 2003). Participants were later shown another square frame that was either of the same size or different size to the original frame, in which they were requested to complete an absolute and a relative task, respectively. For the absolute task, participants were asked to draw a line in the new square (i.e., the square similar in size to the original one), so that the new line was equal to the one in the original square in absolute length. For the relative task, participants were asked to draw a line in the new square (i.e., the square different in size to the original one), whose proportion to the size of the new square frame was similar to the proportion of the original line to the size of the original square frame. The authors reasoned that because individuals with analytic perception engage in context-independent perceptual processes, they are more likely to ignore both the original frame (in their assessment of the length of the line in the original frame) as well as the new frame (in their reproduction of the line in the new frame). Similarly, they argued that because individuals with holistic perception are more oriented to the context, they are likely to incorporate contextual information such as the height information of the surrounding frame in their encoding and reproduction of the line in a different sized frame. Consistent with that proposition, they found that compared to East Asians, North Americans were more accurate on the absolute task, showing they were less context-dependent. East

Asians were also more accurate on the relative task than North Americans, showing East Asians were more context-dependent.

Kitayama et al. (2003, Experiment 2) further provided evidence suggesting that when adapting to a new culture, individuals tend to develop cognitive styles consistent with the host culture. Specifically, using the framed-line test paradigm, they showed in another experiment that North American migrants in Japan showed cognitive style consistent with the predominant cognitive style in East Asia (holistic cognition). Similarly, Japanese migrants in North America showed cognitive style consistent with the predominant cognitive style in North America (analytic cognition). Their findings show that the cultural environment in which individuals are socialised can have implications for holistic-analytic cognition.

### **Culture and memory**

The cultural difference in holistic-analytic cognition may lead to cultural differences in memory for event details (Chua et al., 2005). That is because as individuals' cultural orientation makes them more inclined to prioritise particular type of details (i.e., central vs contextual detail), there is the likelihood that specific type of detail would dominate in the content of memory reports of individuals from the respective cultures. Evidence from previous research shows cultural differences in the content of memory reports in line with the proposal on holistic-analytic cognition (Gutchess & Sekuler, 2019; Istomin et al., 2014). Essentially, it has been suggested in previous work that whereas account of events by people from individualistic cultures is not context-dependent, accounts by those from collectivistic cultures are context-dependent (Amer et al., 2017; Boduroglu, Priti, & Nisbett, 2009; Miyamoto et al., 2006). Systematic reviews show that people from western cultures are more inclined to attend to and remember more focal (central) information, whilst those from Eastern cultures are more inclined to attend to and remember more contextual (background)

information (Gutchess & Inneck, 2009; Nisbett & Masuda, 2003). Indeed laboratory experiments with individuals from individualistic and collectivistic cultures show an individual's cultural orientation can influence memory. For example, in one study, Japanese and American participants were exposed to images of underwater scenes and later given a recall task asking them to describe what they saw (Masuda & Nisbett, 2001). The participants were then given a recognition task which consisted of objects they had earlier seen in the underwater scenes, presented either in their original backgrounds or novel backgrounds. The results showed that when describing underwater scenes from memory, Japanese participants provided more contextual information than American participants (Masuda & Nisbett, 2001). Japanese participants in that study were also more accurate in recognizing previously seen objects when those objects were presented with their original backgrounds. However, when the objects were presented with a novel background, Japanese participants' memory for the previously seen objects was more disrupted than that of American participants.

Research using the change blindness paradigm has provided evidence consistent with previous research showing cultural differences in memory for focal and contextual details (Masuda & Nisbett, 2006). Participants were presented with 30 different pairs of images and later asked about the difference between the images. For example, participants were first presented with a scene of a township consisting of a focal object (e.g., bicycle) and other contextual objects (e.g., buildings at the background). They were later presented with a similar image with an alteration to the focal object (e.g., change in bicycle's front wheel) or the contextual object (e.g., change in the shape of the building in the background) and asked to indicate when they recognise a change. East Asian participants detected changes to contextual details faster than did American participants, who identified changes to focal objects faster than they did contextual details. In a second experiment using a similar

paradigm, participants viewed five pairs of vignettes and requested to describe the changes they saw on a sheet of paper. Again, East Asian participants identified more contextual changes than American participants. American participants also identified more focal changes than East Asian participants.

Research on cultural priming has provided evidence that the independent-interdependent self is linked to cognitive styles (Miyamoto et al., 2006; Mok & Morris, 2012; Oyserman, 2006; Peng & Knowles, 2003; Wang & Ross, 2005). Cultural priming is a technique that involves using situational cues to activate a cultural schema in individuals (Sanchez-Burks et al., 2003). When presented with a book of a cartoon story and later asked about what they saw, Americans and Asian Americans recalled more details about personal autonomy, when the independent-self was primed (Wang & Ross, 2005). Priming the interdependent self resulted in more recall about other characters, social interaction, and other contextual information. Participants' self-construal in that study was primed by asking them to describe their unique attributes or their collective self. Thus, priming the interdependent-self leads to holistic cognition, while the independent self leads to analytic cognition. Hence, in cultures where the social structure leads to the development of an independent or interdependent self-construal, members of that cultural group may develop cognitive styles consistent with the predominant norm for self-construal. Indeed that study also showed that American participants provided more focal details than Asian American participants, who also provided more contextual details than American participants (Wang & Ross, 2005).

Although research shows culture may shape memory, findings from other research is somewhat inconsistent with previous studies. For example, in a study on cultural differences in memory for focal and background details, the authors found that Canadians had better memory for background objects than did Chinese (Wong, Yin, Yang, Li, & Spaniol, 2017).

They also did not find a cultural difference in memory for focal objects. Participants viewed 60 pictures (each consisting of focal and background details) and later identified the respective images that were present in the pictures in a recognition test. The authors argued the reason for Chinese participants' poorer memory for isolated background scenes on the recognition test could be because they might have bound those background scenes with their corresponding focal objects when viewing them in the pictures. Hence, separating those background scenes from the corresponding focal objects in a recognition test becomes more difficult for Chinese participants to identify them, due to their tendency to engage more in holistic processing.

It may also be that cultures do not differ at encoding but rather differ at reporting. For instance, in some of these studies, participants did not provide a narrative from memory about what they perceived on the stimulus. Indeed some research suggests that cultures do not differ at the stage of encoding, but instead at the stage of reporting (Senzaki, Masuda, & Ishii, 2014). In that study, Japanese and Canadian participants were exposed to images of underwater scenes and their eye movements measured. It was found that Japanese and Canadian participants did not differ in visual attention to both central and contextual details. In a follow-up experiment, Japanese and Canadian participants were exposed to the same stimuli and asked to construct narratives about their observation. The results showed that Japanese participants provided more contextual details than Canadian participants, who also provided more focal details than Japanese participants. Thus, when reporting from memory about witnessed events, cultures may differ in what details they prioritise.

The independent-interdependent self-construal also has implications for more elaborate memory reporting (Ross & Wang, 2010; Wang, 2001; Wang, Song, & Kim Koh, 2017). Research shows that individuals from cultures that emphasise the independent self-



construal tend to be more elaborate and specific in their memory reports than individuals socialised in cultures that emphasise the interdependent self-construal (Wang, 2001, 2004). When asked to narrate earliest childhood memories, it was found that the autobiographical memory reports of Asians were less specific and included fewer details than those of Americans (Wang, 2001; Wang & Ross, 2005). According to Hall (1976), communication in individualistic cultures (low context cultures) is more explicit and direct, whereas in collectivistic cultures (high-context cultures) communication is not explicit, as individuals rely on the context to communicate what is implied. Hall (1976) argues that in high context cultures, most of the message is not communicated but internalised. Indeed research within the forensic context shows cultural differences in detail provision between individuals socialised in individualistic cultures and those socialised in collectivistic cultures. For example, recent deception research suggests interviewees with an individualistic cultural background report more details than those with a collectivistic cultural background (Leal et al., 2018; Taylor, Larner, Conchie, & Menacere, 2017; Vrij et al., 2020).

To date, little is known about eyewitness memory among non-western populations. As the individuals that legal and investigative professionals encounter have been socialised in their cultural contexts, an appreciation of whether cultural factors impact their memory reports is essential. Cross-cultural factors may impact the nature of reporting during investigative interviews (Hope & Gabbert, 2019). However, research in the field has largely been conducted with western samples. Also, research on cross-cultural cognition has largely compared Asian and Western cultures. Although sub-Saharan African cultures are regarded as collectivistic, not much comparative work in cross-cultural cognition has been done with samples from sub-Saharan Africa. Thus, even though non-WEIRD cultures are least represented in psychological research, it is worth mentioning that even among the least

represented, sub-Saharan African populations have rarely been examined. Indeed, cross-cultural research on self-construal and cognition has not paid much attention to the entire African continent (Eaton & Louw, 2000). Consequently, there have been calls for cross-cultural research to go beyond Western and East Asian comparisons (Ji & Yap, 2016).

In recent work within the forensic context, object recognition has been examined among asylum seekers from sub-Saharan Africa (De Bruïne et al., 2018). While such research provides valuable initial insight into cross-cultural cognition within a forensic context, its focus was on recognition performance that involved transforming a two-dimensional representation to a three-dimensional representation and vice versa. Hence, that study does not tell us much about the nature or the content of the memory reports of sub-Saharan Africans. Secondly, because the target sample of that study was sub-Saharan African asylum seekers, it may be that adapting to the new cultural environment might have had some impact on their cognition. Indeed in other research on cross-cultural cognition, collectivistic cultural participants are often migrants who were compared with indigenes from the host culture (e.g., Wang, 2009). In view of research showing adapting to a new cultural environment might impact cognitive processes (Kitayama et al., 2003), sampling individuals from collectivistic cultures who have been raised and living in their native culture may give us a clearer picture of how socialisation in the native culture might impact reporting from memory. The current programme of research builds on previous work by examining cultural differences in the nature and content of eyewitness memory reports. This programme of research goes beyond the North American – East Asian comparisons by sampling participants from Western Europe and sub-Saharan Africa, representing the individualistic and collectivistic cultures respectively. The experiments conducted for this programme of research mostly draw on participants that were born, raised, and living in their native cultural context.

In view of the fact that the current programme explores the content and nature of eyewitness memory reports, free and cued recall tests were mostly used. Free recall is more likely to be affected by reporting norms, as it allows for an unlimited free narrative from interviewees (Hope & Gabbert, 2019). Thus, free recall made it possible to assess cultural differences in elaborate reporting. However, because cued recall has to do with specific responses, it is more likely to reflect what interviewees might be able to report. Nevertheless, mock witnesses might also be able to elaborate their response cued recall questions. For example, in response to such the question ‘What was the man doing’, mock witnesses might be more explicit and provide elaborate details regarding what the man in question was doing. Thus both recall domains made it possible to assess cultural differences in the nature and content of memory reports

### **Overview of the current thesis**

Despite evidence showing an individual’s culture of socialisation may shape behaviour and psychological functioning, research in eyewitness memory reports has not made much progress in examining cultural differences in the nature and content of eyewitness memory reports, warranting further research in this area. In the remaining chapters of the thesis, I present experiments conducted to address the overarching aim of the thesis: Whether there are cultural differences in the nature and content of eyewitness memory reports.

In Chapter 2, the results of a preliminary experiment where I examined whether individuals from different cultural backgrounds would indeed differ in the content of their eyewitness memory reports are reported. Using the individualistic-collectivistic cultural

framework, I compared eyewitness memory reports of individuals socialised in collectivistic and individualistic cultures. Specifically, I sought to find out whether individuals differed in the reporting of central and contextual details from a crime scene depending on their cultural background. I sampled participants from sub-Saharan Africa (Ghana) and Western Europe (The Netherlands), representing the collectivistic and individualistic cultures, respectively.

Chapter 3 builds on Chapter 2 by examining whether living in a new cultural environment other than one's native culture shapes their cultural orientation and eyewitness memory reports. I specifically wanted to examine whether the eyewitness memory reports of migrants with a collectivistic cultural background now living in individualistic cultures would differ from those living in their native culture. I sampled sub-Saharan African migrants living in Western Europe and compared them with a control group of sub-Saharan Africans currently living in their native culture.

In Chapter 4, I examined whether individuals from different cultures differ in their susceptibility to misleading information about central and contextual details. Mock witnesses representing the respective cultures were sampled from Western Europe (United Kingdom) and sub-Saharan Africa (Ghana).

Chapter 5 explores whether cultural differences in relating with authority figures play any role in eyewitness memory reports. Based on the power distance cultural dimension, I examined whether the memory reports of individuals socialised in high PD cultures are more likely to be impeded by the power dynamics in the investigative context, compared to individuals socialised in low PD cultures.

In Chapter 6, I synthesise from the previous chapters and discuss what has been learned so far from the current experiments with respect to cross-cultural differences in

eyewitness memory reports. I also discuss theoretical considerations, methodological limitations and future directions. The implications of the findings, as well as challenges in conducting cross-cultural research, are also discussed.

## **Chapter 2: Cross-cultural differences in eyewitness memory reports**

This chapter is published as:

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J.

(2020a). Cross-cultural differences in eyewitness memory reports. *Applied Cognitive Psychology*, 34 (2), 505 – 515. <https://doi.org/10.1002/acp.3637>

### **Abstract**

Increasingly, investigators conduct interviews with eyewitnesses from different cultures. The culture in which people have been socialised can impact the way they encode, remember, and report information about their experiences. We examined whether eyewitness memory reports of mock witnesses from collectivistic (Sub-Saharan Africa) and individualistic (Northern Europe) cultures differed regarding quantity and quality of central and background details reported. Mock witnesses (total  $N = 200$ ) from rural Ghana, urban Ghana, and The Netherlands were shown stimuli scenes of crimes in Dutch and Ghanaian settings and provided free and cued recalls. Individualistic culture mock witnesses reported the most details, irrespective of detail type. For each cultural group, mock witnesses reported more correct central details when crime was witnessed in their own-native setting than a non-native setting, though for different recall domains. The findings provide insight for legal and investigative professionals as well as immigration officials eliciting memory reports in cross-cultural contexts.

**Keywords:** Eyewitness memory report, cultural differences, individualism-collectivism, interview

### **Introduction**

An international criminal tribunal, The Special Court for Sierra Leone, put Charles Taylor, a former president of the West African state of Liberia, on trial in The Hague. Taylor was accused of war crimes, crimes against humanity, and violations of international human rights law during the civil war in Sierra Leone. He was alleged to have supplied arms to rebel groups in Sierra Leone in exchange for diamonds and also to have been involved in the massacre of many innocent people. In the legal proceedings that ensued in his trial, eyewitness evidence from sub-Saharan African witnesses was instrumental (Keith, 2012). As in the trial of Taylor, eyewitness memory reports in international criminal settings are crucial in prosecuting alleged atrocities. However, due to the cross-cultural context of international criminal settings, investigators who interview witnesses in such settings may find it challenging, particularly if insight into culturally determined reporting norms of the witnesses is limited.

Aside from international criminal settings, the increase in international migration has made it more likely that legal and investigative professionals in different countries will need to obtain eyewitness memory reports in cross-cultural contexts. For instance, police detectives are increasingly likely to interview eyewitnesses from cultural backgrounds different to their own. In other contexts, immigration officials typically interview asylum seekers from different cultures about their recollections of events and locations in order to verify their claims (van Veldhuizen et al., 2018). Irrespective of the case type, such interviewees will have been socialised into their respective cultures, and embedded in these cultures are norms (Hofstede, 2001). Various cultural norms may have implications for how people view, remember, and report about their experiences, and how they behave in the course of cross-cultural interactions (Kastanakis & Voyer, 2014; Wang, Song, & Kim Koh,



2017). Hence, it is entirely possible that witnesses, victims, and other interviewees reflect culturally determined reporting norms when being questioned in legal and forensic contexts. Therefore, an increased understanding of the impact of cross-cultural differences on interviews in forensic settings is vital (see Hope & Gabbert, 2019).

The culture in which people have been socialised has been shown to impact both behaviour and psychological processes (Schwartz, Boduroglu, & Gutchess, 2014; Wang, 2004). The individualism-collectivism cultural dimension has been particularly influential in research exploring cross-cultural differences across various social phenomena (Triandis, 2001; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Individualism refers to a cultural orientation where the ties between individuals in a society are relatively loose, whereas collectivism refers to a cultural orientation where a person is embedded in a complex web of social relationships (Hofstede, 1983). The individualism-collectivism cultural dimension may lead to biases in what is considered worthy and informative to report when people from these cultures are exposed to similar scenes (Boduroglu et al., 2009). For example, drawing on the individualism-collectivism dimension, Markus and Kitayama (1991, 2003) proposed independent-interdependent cognitive styles. According to Markus and Kitayama (1991, 2003), an independent construal of the self is characteristic of individualistic societies, and features the self as having significant dispositional attributes, and as being more autonomous and independent. For that reason, individuals with an independent self-construal become more perceptually oriented towards the properties of an object than the context (analytic perception). Accordingly, they become more prone to attend to the properties and characteristics of an object and as a result, narrow their attentional resources to focal objects at a visual field (Boduroglu et al., 2009). In contrast, an interdependent construal of the self whereby individuals view the self as integrated with (i.e. not separate from) the social

context, is proposed as a characteristic of collectivistic cultures. Markus and Kitayama (1991) argued that due to the interdependent self-construal, people from collectivistic cultures become more perceptually oriented towards a broader visual field (holistic perception) and, as a result, are more likely to allocate their attentional resources broadly. Applying Markus and Kitayama's (1991) framework, it might be predicted that reports about events by people from individualistic and collectivistic cultures may differ as their cultural background biases them to be either analytically or holistically oriented.

Aside from an individual's cultural background, it has also been suggested that the characteristics of a cultural setting could direct attention (Masuda & Nisbett, 2006; Miyamoto et al., 2006). Proponents of that perspective have argued that irrespective of their cultural background, individuals are likely to detect changes to focal objects of scenes from individualistic cultures than scenes from collectivistic cultures. Conversely, they argue that individuals, regardless of their cultural background, are more likely to detect changes to contextual objects for scenes from collectivistic cultures than scenes from individualistic cultures (Masuda & Nisbett, 2006). According to that perspective, objects in a collectivistic cultural scene tend to be more complex and ambiguous than objects in an individualistic cultural scene. As a result, individuals may attend to contextual details of a collectivistic cultural scene than an individualistic cultural scene. On the other hand, it is argued individuals may attend more to focal objects in an individualistic cultural scene than a collectivistic cultural scene (Miyamoto, Nisbett, & Masuda, 2006). Other researchers have observed a tendency for familiar environments to modulate the processing of visual stimuli (Epstein, Higgins, Jablonski, & Feiler, 2007). According to Epstein et al. (2007), people activate long-term representations of spatial structures of familiar environments to aid recall. Therefore, it is plausible that eyewitnesses are likely to have superior performance when

attending to scenes in their native cultural environment (own-cultural-setting effect) than scenes located in a different cultural environment.

Consistent with these perspectives, research suggests that individuals' cultural orientation can bias their perceptual processing and content of their reports (Boduroglu et al., 2009; Istomin et al., 2014; Masuda & Nisbett, 2006). For example, in a study comparing children from three Siberian cultures, Istomin et al. (2014) found children from the two cultures with holistic perception included more contextual information in their drawings than those from the culture with analytic perception. They also found that children from a collectivistic cultural orientation tend to draw background objects before drawing focal objects, while the reverse was true for those from individualistic cultural orientation. Istomin et al. (2014) attributed these findings to differences in attention that the different cultures accord to contextual information.

However, other results have been inconclusive with respect to cultural differences in memory reporting. For example, Wong et al. (2017) compared Canadian and Chinese participants with respect to memory for individual and background objects of picture scenes. Participants were exposed to picture drawings containing focal and background scenes and later reported whether they attended to the focal or background scene. Irrespective of participants' cultural background, participants reported attending more to focal details than background details, with a large effect size. It was also found that there was no difference in memory for focal objects between cultures. However, Canadian participants reported attending more to background scenes than Chinese participants did. Thus, there seem to be mixed findings on research on the influence of culture on memory.

### **The current research**

Increasingly, investigators interview witnesses from diverse cultural backgrounds, and given that cultural norms may influence the nature or content of the information reported in such interviews, this may have implications for the criminal justice system. Criminal justice professionals can be confronted with challenges when they lack the relevant awareness, knowledge, and training about cultural differences in eyewitness memory reports. To date, research in this area has largely been conducted using WEIRD (Western, Educated, Industrialised, Rich and Democratic; Henrich, Heine, & Norenzayan, 2010) samples, with little consideration of cross-cultural factors or comparisons. There have been calls for cross-cultural research to go beyond Western borders to enhance our understanding of cultural variations in behaviour (Brady et al., 2018; Gelfand et al., 2017) and, more specifically, to appreciate cultural differences relevant for the field of investigative interviewing (Hope & Gabbert, 2019).

Consequently, efforts are being made in psychological science to explore other non-WEIRD samples. However, a recent meta-analytic review revealed that, even for the small proportion of non-WEIRD populations studied in cross-cultural research, the majority of these non-WEIRD populations were from East Asia (collectivistic culture), with only 0.63% of the non-WEIRD sample populations from Africa (Veillard, 2017). Hence, in the current study, we sampled participants from sub-Saharan Africa (typifying collectivistic culture) and Western Europe (typifying individualistic culture). Within the collectivistic culture, we were also interested in comparing rural and urban cultures, as the latter tends to be less collectivistic than the former (Rooks, Klyver, & Sserwanga, 2016). This difference is likely due to the fact that urban centres are prone to cultural infiltration and there is greater exposure to western cultural values in urban areas than rural areas (Ma, Pei, Jin, & De Wit, 2015). To date, the literature on cross-cultural cognition has rarely made that distinction

between rural and urban dwellers in collectivistic societies. To address this issue in the current research, we compared eyewitnesses from Western European culture with eyewitnesses from urban and rural sub-Saharan African cultures.

Mock-witnesses from sub-Saharan Africa and Western Europe viewed stimuli scenes presenting African and European settings and reported what they saw in a free recall test. Afterwards, they were asked cued recall questions that focused on both central and background details of the scenes. Drawing on theory and previous findings, we predicted cultural differences in the types of details reported by the cultural groups. Specifically, we expected Western European mock witnesses to report more focal details about the crime scene than sub-Saharan African mock witnesses. Conversely, we expected sub-Saharan African mock witnesses to report more contextual details than Western European mock witnesses. Among sub-Saharan African mock witnesses, we expected differences between mock witnesses from rural and urban areas in the type of details reported. Specifically, we predicted that those from rural sub-Saharan Africa would report more contextual details than those from urban sub-Saharan Africa. Mock witnesses from urban sub-Saharan Africa were expected to report more focal details than those from rural sub-Saharan Africa. We also expected that cultural setting would play a role in the memory reports of mock witnesses of all cultural groups. Specifically, we predicted that mock witnesses across cultures would report more central details about Western European cultural settings than sub-Saharan African cultural settings. Mock witnesses across cultures were also predicted to report more background details for sub-Saharan African settings than Western European settings. Finally, we expected mock witnesses from sub-Saharan Africa to report more central and background details about sub-Saharan African settings than Western European settings, while we expected the reverse for mock witnesses from Western Europe.

## Method

### Participants and Design

A total of 207 participants were sampled from Ghana ( $n_{rural\ Ghana} = 78$ ;  $n_{urban\ Ghana} = 73$ ) and The Netherlands ( $n = 56$ ). The selection of countries for inclusion is consistent with previous research (Hofstede, 1983, 2001).<sup>2</sup> Out of the 207 participants recruited, 7 were excluded. These participants were excluded because they did not follow instructions ( $n = 2$ ), viewed only three out of the four scenes ( $n = 4$ ), and had East Asian parents although born in The Netherlands ( $n = 1$ ). Our final sample comprised 200 participants (103 males, 97 females,  $M_{age} = 28.44$ ,  $SD = 12.43$ ). The urban sample ( $n = 70$ ;  $M_{age} = 26.39$ ,  $SD = 10.79$ ) in Ghana were recruited in the capital city, Accra, while the rural sample ( $n = 75$ ;  $M_{age} = 31.61$ ,  $SD = 14.29$ ) were recruited in Akim Aduasa, a farming community in the Eastern Region of Ghana. Participants from The Netherlands ( $n = 55$ ,  $M_{age} = 26.78$ ,  $SD = 10.96$ ) were recruited in Maastricht, a provincial capital in the south of the country. Student participants in The Netherlands were awarded course credits whereas non-student participants received a €5 shopping voucher. Student and non-student participants from Ghana received a GHC5 voucher for phone credit.

The design for the study was a 3 (Cultural Group: Rural Ghana, Urban Ghana, The Netherlands) X 2 (Crime Setting: Ghanaian setting, Dutch setting) mixed factorial design. The between-group variable was cultural group and the within-group variable was crime setting. The dependent variables were correct, incorrect, and withheld (Don't know) details, for both central and background information.

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<sup>2</sup> Hofstede's individualism-collectivism index indicates the extent to which countries are individualistic and collectivistic. On Hofstede's index (ranging from 0 - 100), The Netherlands is associated with an individualism index of 80 while Ghana is associated with an index of 14, where a higher score reflects greater individualism.

## Materials

**Stimuli.** The stimuli used were eight photographs rich in central and background details. The photographs depicted four crime scenarios (theft, assault, accident, and robbery; See Table 1 for stimuli description). Each of these crime scenarios was photographed in a Ghanaian setting as well as a Dutch setting. For example, for a crime depicting a theft in a Ghanaian setting, the same crime was depicted in a Dutch setting. Each participant viewed four of these stimuli (Two stimuli each for Dutch and Ghanaian settings). The stimuli were prepared in The Netherlands and Ghana. Scenarios were prepared with a very clear central event that was distinct from the background.

Two of the stimuli (1 Ghanaian setting and 1 Dutch setting) were piloted in the respective countries. A total of 14 participants (9 males, 5 females,  $M = 24.07$ ,  $SD = 3.20$ ) from Ghana and 15 participants (4 males, 11 females,  $M = 30.40$ ,  $SD = 13.12$ ) from The Netherlands provided ratings, using a five-point Likert scale. They rated the extent the stimulus (i) represented their native setting and (ii) represented a crime scene. Consistent with Paz-Alonso, Goodman, and Ibabe's (2013), the mid-rating score was used in deciding whether a stimulus received sufficient rating. The stimuli settings were rated by participants to adequately represent settings in their respective countries (Ghanaian stimuli –  $M = 3.79$ ,  $SD = .97$ ; Dutch stimuli –  $M = 3.33$ ,  $SD = .62$ ) and reflect plausible crime scenes (Ghanaian stimuli –  $M = 3.43$ ,  $SD = 1.28$ ; Dutch stimuli –  $M = 3.47$ ,  $SD = .83$ ). The pilot study also determined which details participants regarded as central and background details in each scene. To establish stimulus centrality, the participants were asked two open-ended questions: ‘What do you regard as the central event in the picture?’ and ‘What do you regard as background event(s) in the picture?’. All participants identified the central and contextual events in a manner consistent with our intended central and contextual elements when constructing the

stimuli (with the exception of one participant who did not identify central event for the Ghanaian stimuli as such). Results from this pilot informed the development of the remaining stimuli with Ghanaian and Dutch settings, which were developed to have a clear central event distinct from the background. The stimuli are available on Open Science Framework at [https://osf.io/t89hu/?view\\_only=59e038117b2d4d5588e00c804de3539a](https://osf.io/t89hu/?view_only=59e038117b2d4d5588e00c804de3539a)

Table 1: Description of stimulus used in experiment

<b>Stimuli</b>	<b>Type of incident</b>	<b>Description</b>
A	Robbery	This is a Dutch scene where a man appears to be snatching a backpack from a woman. The incident occurs inside a building with shops. In the background of the scene, people are walking and some are standing beside a shop.
B	Theft	This is a Ghanaian scene where a man is seen standing beside a car in a car park, attempting to break in. Other cars are parked in the background. Also present in the background are trees, parked cars, people standing, and buildings.
C	Accident	A Dutch scene where a woman is lying on the street beside a car. In the background are buildings and individuals walking and cycling.
D	Assault	This is a Ghanaian scene where a man is attempting to hit a woman with his fist. The woman is sitting while the man is standing. The setting is a pub and there is a counter, chair, and drinks in the background.
E	Theft	A Dutch scene where a man is seen standing beside a car in a car park, attempting to break in. In the background of the scene are other parked cars, buildings, bicycle sheds, and trees.
F	Robbery	This is a Ghanaian scene where a man is seen attempting to snatch a bag from a woman. This is in a building with shops



		where other people are seen walking in the background while others are standing in front of one of the shops.
G	Assault	A Dutch scene where a man is seen attempting to hit a woman with his fist. The woman is sitting while the man is standing. The setting is a pub and in the background is the counter, tables, chairs, etc.
H	Accident	A Ghanaian scene where a woman appears to be lying on the street behind a black car. In the background of the scene are a building and trees.

**Cultural Orientation Scale.** We used the cultural orientation scale (Triandis & Gelfand, 1998) to measure self-reported individualism and collectivism of participants. That scale has 16-items with a nine-point Likert scale (1 = *never* or *definitely no* and 9 = *always* or *definitely yes*). It has four subscales: vertical individualism (VI), horizontal individualism (HI), vertical collectivism (VC) and horizontal collectivism (HC).<sup>3</sup> Sample items on the scale include: VI – “*winning is everything*”; HI – “*I often do my own thing*”; VC – “*Parents and children must stay together as much as possible*”; and HC – “*If a co-worker gets a prize, I would feel proud*”. The coefficient alphas of the sub-scales range from .62 to .75 (Soh & Leong, 2002).

## Procedure

All participants in the study were tested individually. After consenting to participate, participants completed the cultural orientation scale and a short demographic questionnaire.

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<sup>3</sup> Vertical individualism refers to individualistic cultures where hierarchy is emphasised in social relationships; horizontal individualism refers to individualistic cultures where equality is emphasised in social relationships; vertical collectivism refers to collectivistic cultures where hierarchy is emphasized in social relationship; and horizontal collectivism refers to collectivistic cultures where equality is emphasize in social relationships (Triandis & Gelfand, 1998).

Participants then viewed the stimulus scenes, one at a time. Consistent with previous research (e.g. Wang & Pomplun, 2012), participants viewed each scene for 5 seconds. After viewing a scene, participants worked on a distractor task (mathematical problems) for five minutes.

Participants were then instructed to provide a verbal free recall describing what they could remember about the scene they viewed. Participants were asked to be as detailed and accurate as possible in their reports about the scene. Participants had up to six minutes to provide that account.

After the free recall task, participants answered 20 cued recall questions about central and background events or items in the stimulus (e.g., ‘How was the attacker dressed’ and ‘Can you describe the colour of the building?’). The order of questions alternated between questions on central and background details. The instructions and questions for some participants in rural Ghana were given in the local language (Twi) as these participants had a low level of English comprehension.<sup>4</sup>

After completing both recall tasks, participants saw the next scene and the procedure was repeated until they had viewed all four scenes. The presentation of the scenes was counterbalanced. Participants received the same instructions for all tasks. Participants’ responses were audio recorded. After completing the procedures, they were thanked and debriefed. The test session took approximately 60 minutes per participant. The study received ethical approval from the Ethics Review Committee Inner City faculties, Maastricht University, and the Ethics Committee for the Humanities, University of Ghana.

## **Coding**

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<sup>4</sup> A PhD student in Linguistics with expertise in the Ghanaian language translated the protocol. The interviewer who also had a good command of the local language explained the study instructions to these participants thoroughly, and also read the questions out to such participants in the Twi language.

Verbal responses were transcribed. The interviews conducted in Twi in rural Ghana were translated into English during the transcription by one of the research assistants indigenous to the region. A detailed coding template for each of the stimulus scenes was developed by the first author and was adapted from previous research (Gabbert, Hope, & Fisher, 2009; Wright & Holliday, 2007). For the purposes of our study, details provided by participants were classified as either a background detail or central detail, in both free and cued recall, adhering a coding manual prepared in advance.<sup>5</sup> An item was coded as correct if it was present in the stimuli scene and given a correct description. Incorrect items were also coded and scored accordingly. Vague responses (e.g., It was a red or green bag) or subjective inferences (e.g., the car belonged to the woman lying on the floor) were not coded. ‘Don’t know’ responses were coded as withheld details. A second coder coded 20% of the transcripts which were randomly selected to check for coding consistency. We found high inter-coder reliability (intraclass correlation coefficient) for free recall with regard to correct central details ( $r = .97$ ) and correct background details ( $r = .95$ ). The details provided by participants were collated across all stimuli and analysis was based on data for all scenes.

## Results

Analyses were conducted using a mixed factorial ANOVA, except analysis on type of detail that dominated in the memory reports of the cultural groups, where repeated-measures ANOVA was used. Where significant difference existed, we used Games-Howell multiple comparisons test as this post-hoc test is suitable for comparison groups of unequal size (S. Lee & Lee, 2018). We applied a Bonferroni correction (.017) to control for increased familywise error rates arising from multiple tests.

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<sup>5</sup> Classification of central and background details in this coding manual was based on stimulus centrality established in the pilot study earlier reported.

## Free Recall

**Central Details.** Cultural group had a significant main effect on the number of correct central details reported,  $F(2, 197) = 43.02, p < .001, \eta_p^2 = .30$ . Participants from The Netherlands reported significantly more correct central details than participants from urban Ghana ( $p = .003$ ), who also reported significantly more correct central details than participants from rural Ghana ( $p < .001$ ; see Table 2.1). We also found a significant main effect for crime setting on correct central details,  $F(1, 197) = 8.78, p = .003, \eta_p^2 = .04$ . Participants reported more correct central details when the crime scene was a Ghanaian setting ( $M = 15.91, SD = 7.50$ ) than when it was a Dutch setting ( $M = 14.54, SD = 7.35$ ). There was no significant interaction effect between cultural group and crime setting,  $F(2, 197) = 3.28, p = .04, \eta_p^2 = .03$ . In order to test evidence in favour of the null, we proceeded with a Bayesian ANOVA analysis using JASP (Wagenmakers, 2007). The analysis yielded a Bayes Factor of  $BF_{10} = 2.35 \times 10^{14}$ . According to Raftery (1995) Bayes factor of 150 and above is indicative of very strong evidence in favour of the alternate hypothesis. A planned comparison revealed both participants from rural Ghana ( $p = .019$ ) and urban Ghana ( $p = .001$ ) significantly reported more correct central details for Ghanaian crime settings than Dutch crime settings. Participants from the Netherlands, however, did not significantly differ in correct central details reported for Ghanaian and Dutch crime settings ( $p = .770$ ). Results are shown in Figure 2.1.

There was a significant main effect of cultural group on the number of incorrect central details reported,  $F(2, 197) = 9.27, p < .001, \eta_p^2 = .09$ . Participants from rural Ghana reported significantly fewer incorrect central details than participants from The Netherlands ( $p = .001$ ). Participants from urban Ghana and The Netherlands did not significantly differ in incorrect central details reported ( $p = .055$ ). Participants from rural Ghana and urban Ghana

also did not significantly differ in incorrect central details reported ( $p = .146$ ; see Table 2.1). Crime setting did not have a significant effect on incorrect central details  $F(1, 197) = 3.80, p = .05, \eta_p^2 = .02$ . The interaction effect for cultural group and crime setting for incorrect central details was not significant,  $F(2, 197) = 2.05, p = .13, \eta_p^2 = .02$ .

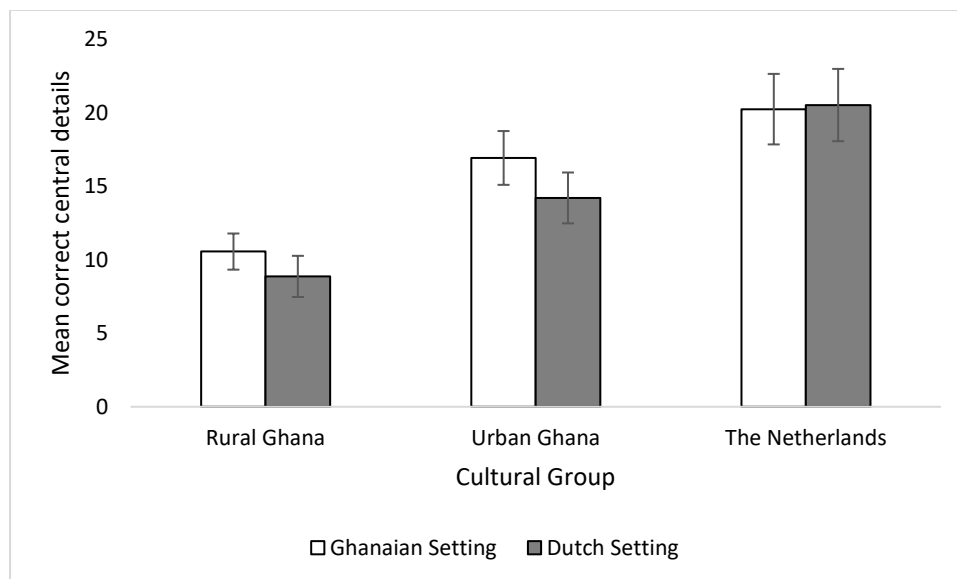


Figure 2. 1. Mean correct central details for different crime settings reported across cultural groups under free recall.

**Background Details.** There was a significant main effect of cultural group on the reporting of correct background details  $F(2, 197) = 45.35, p < .001, \eta_p^2 = .32$ . Participants from The Netherlands reported more correct background details than participants from urban Ghana ( $p = .002$ ). Participants from urban Ghana also reported more correct background details than participants from rural Ghana ( $p < .001$ ; see Table 2.1). There was also a significant main effect for crime setting,  $F(1, 197) = 38.03, p < .001, \eta_p^2 = .16$ . Participants reported more correct background details for crime scenes with Dutch settings ( $M = 9.22, SD$

= 5.94) than Ghanaian settings ( $M = 6.93, SD = 4.81$ ). However, the interaction between cultural group and crime setting was not significant,  $F(2, 197) = .94, p = .39, \eta_p^2 = .01$ .

Cultural group had no significant main effect on incorrect background details reported,  $F(2, 197) = .47, p = .62, \eta_p^2 = .01$ . Crime setting also had no significant main effect on incorrect background details reported,  $F(1, 197) = .33, p = .57, \eta_p^2 = .002$ . The interaction between cultural group and crime setting on incorrect background details was also not significant  $F(2, 197) = 1.13, p = .33, \eta_p^2 = .01$ .

Table 2. 1

*Mean (Standard Deviation) correct, incorrect, and withheld central and background details reported in free and cued recall by cultural groups*

			Rural Ghana	Urban Ghana	The Netherlands
Free Recall	<i>Correct</i>	Central	9.71 (6.58)	15.57 (6.53)	20.39 (5.78)
		Background	3.99 (4.76)	8.36 (4.69)	11.87 (4.75)
	<i>Incorrect</i>	Central	1.13 (1.39)	1.51 (1.34)	2.17 (1.33)
		Background	.78 (1.13)	.91 (1.09)	.96 (1.11)
Cued Recall	<i>Correct</i>	Central	13.47 (5.72)	18.06 (5.69)	22.77 (5.71)
		Background	4.59 (3.38)	6.26 (3.35)	10.73 (3.34)
	<i>Incorrect</i>	Central	5.59 (2.25)	5.15 (2.26)	6.10 (2.30)
		Background	4.27 (2.51)	4.27 (2.51)	5.73 (2.52)
	<i>Withheld</i>	Central	6.25 (4.16)	5.54 (4.18)	3.75 (4.15)
		Background	10.54 (3.64)	10.13 (3.68)	7.18 (3.63)

**Type of Detail Reported.** We examined the total (correct and incorrect) amount of central and background details reported by each group. Participants from The Netherlands reported more central details than background details,  $F(1, 54) = 93.25, p < .001, \eta_p^2 = .63$ . A similar pattern was found for participants from urban Ghana who also reported more central details than background details,  $F(1, 69) = 100.85, p < .001, \eta_p^2 = .59$ . Participants from rural Ghana also reported more central details than background details,  $F(1, 74) = 156.35, p < .001, \eta_p^2 = .68$ . See Table 2.3. Although central details dominated in the memory reports of all cultural groups, there was a significant difference in the total amount of central details reported across cultural groups,  $F(2, 197) = 43.09, p < .001, \eta_p^2 = .30$ . Participants from The Netherlands significantly reported more central details than participants from urban Ghana ( $p = .002$ ), who also reported more central details than participants from rural Ghana ( $p < .001$ ; see Table 2.3).

Table 2. 2

*Mean (Standard Deviation) correct and incorrect details reported in free and cued recall for cultural groups by crime setting*

			<u>Rural Ghana</u>		<u>Urban Ghana</u>		<u>The Netherlands</u>	
			Ghanaian setting	Dutch setting	Ghanaian setting	Dutch setting	Ghanaian setting	Dutch setting
Free Recall	Correct	Central	10.56 (5.45)	8.87 (5.02)	16.93 (7.80)	14.21 (7.38)	20.25 (9.08)	20.53 (9.29)
		Background	3.20 (2.68)	4.79 (4.52)	7.06 (4.86)	9.66 (6.76)	10.55 (6.63)	13.20 (6.40)
	Incorrect	Central	1.29 (1.55)	.97 (1.00)	1.46 (1.73)	1.56 (1.97)	2.53 (2.40)	1.82 (1.86)
		Background	.63 (1.17)	.93 (1.26)	.97 (2.02)	.86 (1.12)	.95 (1.15)	.96 (1.41)
Cued Recall	Correct	Central	13.51 (5.70)	13.44 (6.70)	17.69 (6.30)	18.44 (7.72)	21.45 (5.85)	24.09 (6.70)
		Background	3.72 (3.10)	5.45 (3.86)	4.81 (3.17)	7.71 (4.06)	7.78 (4.54)	13.67 (5.17)
	Incorrect	Central	5.85 (3.28)	5.33 (2.96)	5.61 (2.47)	4.69 (2.61)	6.60 (3.20)	5.60 (2.86)
		Background	3.59 (2.60)	4.96 (3.02)	4.06 (2.76)	4.49 (3.15)	5.25 (3.06)	6.20 (3.37)
	Withheld	Central	6.45 (11.26)	6.05 (3.05)	4.81 (2.52)	6.27 (2.47)	3.56 (2.49)	3.93 (2.36)
		Background	11.96 (4.64)	9.39 (4.16)	10.74 (4.17)	9.51 (3.69)	8.55 (4.61)	5.81 (3.53)



## Cued Recall

**Central Details.** There was a significant main effect of cultural group on correct central details reported in response to cued recall questions focused on central details,  $F(2, 197) = 42.66, p < .001, \eta_p^2 = .30$ . Participants from The Netherlands reported more correct central details than participants from urban Ghana ( $p < .001$ ), who also reported more correct central details than participants from rural Ghana ( $p < .001$ ). See Table 2.1. There was also a significant main effect of crime setting on correct central details reported,  $F(1, 197) = 5.82, p = .017, \eta_p^2 = .03$ . Participants reported more correct central details when the crime scene was a Dutch setting ( $M = 18.66, SD = 7.21$ ) than when it was a Ghanaian setting ( $M = 17.55, SD = 6.08$ ). The interaction between cultural group and crime setting was not significant,  $F(2, 197) = 2.85, p = .06, \eta_p^2 = .02$ . We proceeded with a Bayesian ANOVA to test for evidence for the null. We found the Bayes Factor to be  $BF_{10} = 7.964 \times 10^{12}$ , indicative of very strong evidence (Raftery, 1995) in favour of the alternate hypothesis. A planned comparison revealed participants from rural Ghana did not differ on correct central details reported for Ghanaian and Dutch crime settings ( $p = .91$ ). Participants from urban Ghana also did not significantly differ on correct central details reported for the two cultural settings ( $p = .36$ ). However, participants from the Netherlands reported more correct central details for Dutch crime settings than they did for Ghanaian crime settings ( $p = .01$ ). See Figure 2.2.

The main effect of cultural group on incorrect central details reported, in response to questions focused on central details was not significant,  $F(2, 197) = 2.66, p = .07, \eta_p^2 = .02$ . There was, however, a significant main effect of crime setting on incorrect central details reported,  $F(1, 197) = 10.16, p = .002, \eta_p^2 = .05$ . Participants reported more incorrect central details when crime setting was a Ghanaian setting ( $M = 6.02, SD = 2.97$ ) than when it was a

Dutch setting ( $M = 5.21$ ,  $SD = 2.83$ ). The interaction between cultural group and crime setting was not significant,  $F(2, 197) = .36$ ,  $p = .699$ ,  $\eta_p^2 = .004$ .

Cultural group had a significant main effect on the central details withheld by participants,  $F(2, 197) = 5.97$ ,  $p = .003$ ,  $\eta_p^2 = .06$ . Participants from rural Ghana withheld more responses for questions about central details than participants from The Netherlands ( $p = .004$ ). Participants from urban Ghana also withheld more central details than participants from The Netherlands ( $p < .00$ ). Participants from rural Ghana and urban Ghana did not significantly differ in central details withheld ( $p = .619$ ; see Table 2.1). Crime setting did not have a significant main effect on the central details withheld by participants,  $F(1, 197) = .90$ ,  $p = .34$ ,  $\eta_p^2 = .01$ . The interaction between cultural group and crime setting on withheld central details was also not significant,  $F(2, 197) = 1.29$ ,  $p = .28$ ,  $\eta_p^2 = .01$ .

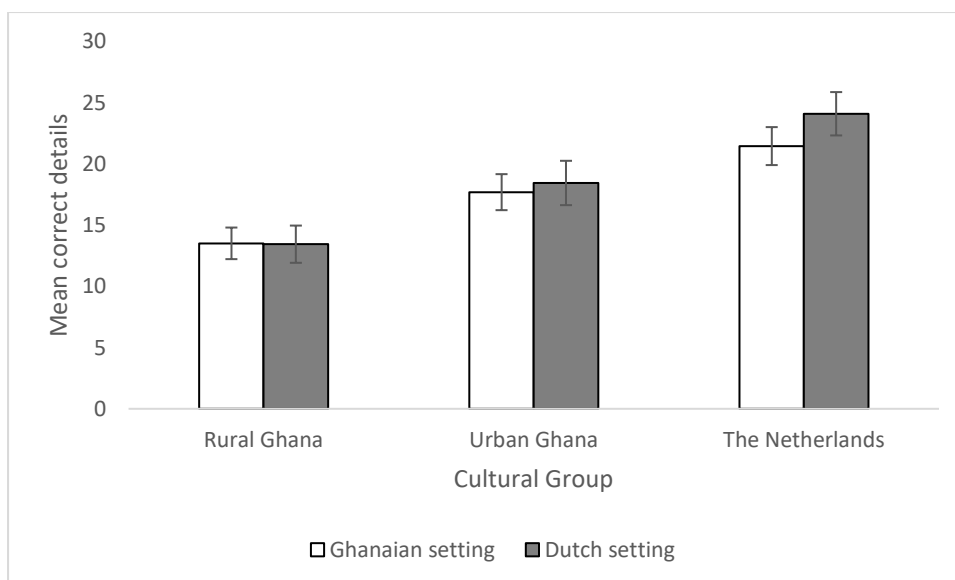


Figure 2. 2. Mean correct details for different crime settings reported across cultural groups under cued recall.

**Background Details.** There was a significant main effect of cultural group on correct background details reported in response to questions about background details,  $F(2, 197) = 55.59, p < .001, \eta_p^2 = .36$ . Participants from The Netherlands reported more correct background details than participants from urban Ghana ( $p < .001$ ) and rural Ghana ( $p < .001$ ). Participants from urban Ghana also reported more correct background details than participants from rural Ghana ( $p = .004$ ; see Table 2.1). The main effect of crime setting on correct background details reported was significant,  $F(1, 197) = 130.51, p < .001, \eta_p^2 = .40$ . Participants reported more correct background details when crime setting was a Dutch setting ( $M = 8.95, SD = 4.38$ ) than when it was a Ghanaian setting ( $M = 5.44, SD = 3.68$ ). The interaction between cultural group and crime setting was also significant,  $F(2, 197) = 15.23, p < .001, \eta_p^2 = .13$ . A planned comparison revealed participants from rural Ghana reported more correct background details for Dutch settings than Ghanaian settings ( $p < .001$ ). Participants from urban Ghana also reported more correct background details when crime scene was a Dutch setting than Ghanaian setting ( $p < .001$ ). We found a similar pattern for participants from The Netherlands, who reported more correct background details when crime setting was a Dutch setting than when it was a Ghanaian setting ( $p < .001$ ). The interaction effect for correct background details could be accounted for by the magnitude of the simple main effect. This is because, for all cultural groups, the slopes of the simple main effect of crime setting have the same direction. See Table 2.2 for descriptive statistics on interaction between cultural group and crime setting.

There was also a significant main effect of cultural group on incorrect background details,  $F(2, 197) = 6.81, p = .001, \eta_p^2 = .07$ . Participants from urban Ghana reported fewer incorrect background details than participants from The Netherlands ( $p = .009$ ). Participants from rural Ghana also reported fewer incorrect background details than participants from The

Netherlands ( $p = .005$ ). Participants from urban Ghana and rural Ghana did not differ in incorrect background details reported ( $p = 1.00$ ). See Table 2.1. Setting of crime had a significant main effect on incorrect background details reported,  $F(1, 197) = 15.29, p < .001, \eta_p^2 = .07$ . Participants reported more incorrect background details for Dutch crime settings ( $M = 5.22, SD = 3.25$ ) than Ghanaian crime settings ( $M = 4.30, SD = 2.83$ ). The interaction effect between cultural group and crime setting on incorrect background details reported was not significant,  $F(2, 197) = 1.50, p = .23, \eta_p^2 = .02$ .

The analysis also revealed that the main effect of cultural group on background details withheld by participants was significant,  $F(2, 197) = 15.06, p < .001, \eta_p^2 = .13$ . Participants from urban Ghana withheld significantly more responses for questions on background details than participants from the Netherland ( $p < .001$ ). We also found a similar pattern for participants from rural Ghana, who withheld significantly more responses to questions on background details, than participants from The Netherlands ( $p < .001$ ). No significant difference was observed for withheld responses for participants from rural Ghana and urban Ghana ( $p = .781$ ). See Table 2.1. The setting of crime also had a significant main effect on background details withheld by participants,  $F(1, 197) = 54.54, p < .001, \eta_p^2 = .22$ . Participants withheld more background details for Ghanaian crime settings ( $M = 10.33, SD = 4.53$ ) than Dutch crime settings ( $M = 8.24, SD = 3.81$ ). The interaction effect between cultural group and crime setting for background details withheld by participants was not significant,  $F(2, 197) = 2.47, p = .09, \eta_p^2 = .02$ .

**Type of Detail Reported.** The total (correct and incorrect) amount of details reported for central and background details for each group was compared to find out the type of detail that dominated in their reports. Participants from rural Ghana significantly reported more central details than background details,  $F(1, 74) = 304.58, p < .001, \eta_p^2 = .81$ . Participants

from urban Ghana also significantly reported more central details than background details,  $F(1, 69) = 370.02, p < .001, \eta_p^2 = .84$ . We found the same pattern for participants from The Netherlands who also significantly reported more central details than background details,  $F(1, 54) = 334.83, p < .001, \eta_p^2 = .86$ . See Table 2.3. Notwithstanding the observation that in all cultural groups central details dominated in the memory reports, the cultural groups significantly differed in amount of central details reported,  $F(2, 197) = 44.11, p < .001, \eta_p^2 = .31$ . Participants from The Netherlands significantly reported more central details than participants from urban Ghana ( $p < .001$ ), who also reported more central details than participants from rural Ghana ( $p < .001$ ).

Table 2. 3

*Mean (Standard Deviation) of amount of central vs background details for cultural groups under free and cued recall*

	The Netherlands				Urban Ghana				Rural Ghana			
	Central		Background		Central		Background		Central		Background	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Free Recall	45.13	19.21	25.65	11.70	34.16	14.27	18.54	12.34	21.69	9.41	9.55	6.66
Cued Recall	57.75	10.97	32.91	9.89	46.43	11.83	20.97	8.02	38.13	12.24	17.64	8.59

### **Self-Reported Cultural Orientation**

We conducted an exploratory analysis on the self-reported cultural orientation of participants from the cultural groups. The analysis revealed that the cultural groups did not differ on horizontal collectivism,  $F(2, 197) = .69, p = .50, \eta_p^2 = .01$ , but did differ on vertical

collectivism,  $F(2, 197) = 8.30, p < .001, \eta_p^2 = .08$ . Participants from rural Ghana ( $M = 29.72, SD = 6.87$ ) significantly scored higher on vertical collectivism than participants from The Netherlands ( $M = 26.20, SD = 4.67$ ) ( $p = .002$ ). Participants from urban Ghana ( $M = 30.01, SD = 4.99$ ) also scored higher on self-reported vertical collectivism than participants from The Netherlands ( $p < .001$ ). There was no significant difference between participants from rural Ghana and urban Ghana on vertical collectivism ( $p = .95$ ).

There was also a (marginally) significant difference between the cultural groups on horizontal individualism,  $F(2, 197) = 3.05, p = .05, \eta_p^2 = .03$ . Participants from rural Ghana ( $M = 26.83, SD = 6.45$ ) and The Netherlands ( $M = 25.84, SD = 4.78$ ) did not differ on scores on horizontal individualism ( $p = .57$ ). There was also no significant difference between participants from rural Ghana and urban Ghana ( $M = 28.29, SD = 5.21$ ) on self-reported horizontal individualism ( $p = .29$ ). However, there was a significant difference in self-reported horizontal individualism between participants from urban Ghana and The Netherlands ( $p = .02$ ). Participants from urban Ghana gave higher ratings than participants from The Netherlands on horizontal individualism. The cultural groups significantly differed on self-reported vertical individualism  $F(2, 197) = 14.86, p < .001, \eta_p^2 = .13$ . Participants from rural Ghana ( $M = 24.52, SD = 6.80$ ) reported higher scores on vertical individualism than participants from The Netherlands ( $M = 17.98, SD = 7.26$ ) ( $p < .001$ ). Participants from urban Ghana ( $M = 23.04, SD = 6.83$ ) also significantly gave higher ratings on vertical individualism than participants from the Netherlands ( $p < .001$ ). There was no significant difference between participants from rural Ghana and urban Ghana on self-reported vertical individualism ( $p = .40$ ).

## Discussion

We examined eyewitness memory reports of individuals from different cultural groups thought to typify individualistic (Western Europe) and collectivistic cultures (sub-Saharan Africa). The results appear to reveal a tendency toward the under-reporting of details by sub-Saharan African mock witnesses. In addition, central details dominated in the eyewitness memory reports provided across cultures. The results also showed that in free recall, sub-Saharan African mock witnesses reported more correct central details when the crime scenario was witnessed in their own-native setting than when it was witnessed in a non-native setting. Western European mock witnesses also reported more correct central details in cued recall when the crime scenario was witnessed in their own-native setting than a non-native setting. Mock witnesses from sub-Saharan Africa reported more background details about a non-native setting than they did for their own-native setting under cued recall. Crime context did not appear to affect the nature of correct background details that Western European mock witnesses reported in free recall. However, they reported more correct background details when crime was witnessed in their own-native setting than a non-native setting in cued recall.

It was hypothesised that sub-Saharan African mock witnesses would report more contextual details than western European mock witnesses, who were expected to report more central details than sub-Saharan African mock witnesses. These hypotheses were not confirmed as regardless of detail types, western European mock witnesses reported more elaborate details than sub-Saharan African mock witnesses. The differences between cultural groups with respect to the amount of reported details is noteworthy. One possible explanation for this finding could be elaboration differences due to socialisation affordances (Peterson, Sales, Rees, & Fivush, 2007). Such a difference is conspicuous in childrearing practices,

where it has been observed that parents from individualistic cultures provide much more feedback to their children in conversations than those from collectivistic cultures (Wang, 2004). It may be the case that differences in linguistic elaboration are transmitted to children and persist to later adulthood. Consequently, while eyewitnesses from collectivistic cultures report details about a crime scene, they may not spontaneously provide a detailed elaboration in their memory narratives. This speculation fits with assertions that individuals from collectivistic cultures report less specific and more generic details than individuals from individualistic cultures (Millar, Serbun, Vadalía, & Gutchess, 2013; Wang & Ross, 2005). Similar results have been observed in research on deception detection, showing interviewees in individualistic cultures typically report more explicit details than interviewees from collectivistic cultures (Leal et al., 2018). Leal et al. (2018) argued that interviewees from collectivistic cultures tend to leave many things unsaid, allowing the context to communicate what is implied, whereas in individualistic cultures the communication style tends to be more explicit. Therefore, during investigative interviews, it may be necessary to prompt and encourage eyewitnesses from collectivistic cultures to elaborate further on the initial information they provide.

Apart from the possibility of elaborative differences, it may be the case that individuals from collectivistic cultures have a tendency to be more modest or restrained when providing their memorial accounts than those from individualistic cultures. Cultural differences in self-effacement and self-enhancement have been documented, with self-effacement attributed to collectivistic cultures and self-enhancement attributed to individualistic cultures (Takata, 2003; Yamagishi et al., 2012a). Such differences may reflect cultural disparities in the independent-interdependent construal of the self (Markus & Kitayama, 1991). Individuals from cultures with independent construal of the self are more



likely to emphasise the unique attributes of a person. This tendency may be reflected in their self-presentation in regard to expressing themselves, as they may be inclined to emphasise their positive attributes (self-enhancement; Takata, 2003). In contrast, individuals from collectivistic cultures, in comparison to individuals from individualistic cultures, have a tendency to be self-critical and modest about emphasising their unique attributes (self-effacement; Heine, Lehman, & Takata, 2000). Therefore, individuals from collectivistic cultures are more likely to be modest in terms of self-presentation and expression (Wise, Gong, Safer, & Lee, 2010). These concepts have been identified as powerful determinants of behaviour, especially within a social context (Brown & Gallagher, 1992). It is possible for a witness from a collectivistic culture to self-efface when being interviewed, by being modest in terms of the extent of the personal memory narrative provided (i.e., providing a less elaborative or detailed account spontaneously). However, it is worth noting that this tendency to self-efface may attenuate when the implications or stakes of self-effacing are high (Yamagishi et al., 2012a). Future research should explore whether this tendency is attenuated when investigators emphasize the importance of providing details to pursue an investigation.

In the current study, mock witnesses from the collectivistic cultural groups provided more 'Don't Know' responses than those from the individualistic cultural group. Thus, in this study at least, participants from collectivistic cultures might have applied a relatively strict criterion for reporting, and withheld details they remembered but were not confident about (Cai, Brown, Deng, & Oakes, 2007). This pattern aligns well with the self-effacing tendency of collectivistic cultures. In a study on self-effacement and self-enhancement among Canadians and Japanese participants, Heine et al. (2000) found that while the former were confident they performed well on a test, the latter were reluctant to admit that they had performed better. It may be that when sub-Saharan mock witnesses were not confident about

memory for certain details, they simply decided not to report them. Consistent with this notion is the observation that participants from Western Europe, who tend to be more assertive and expressive than people from collectivistic cultures (Matsumoto et al., 2008), provided more inaccurate responses than participants from sub-Saharan Africa which suggests Western European mock witnesses had a looser threshold for reporting accurate details. Future research should examine the extent to which there are cultural differences in the reporting of low-confidence memories.

The social dynamics during the interview may have also played a role in the amount of information mock witnesses reported, particularly those from sub-Saharan Africa. Individuals from sub-Saharan Africa have been shown to be high on the cultural dimension of power distance (Hofstede, 1983). Power distance, another dimension in which cultures differ, is the extent to which a society endorses hierarchy in social relationships (Oyserman, 2006). High power distance (endorsement of hierarchy in social relationships) may inhibit free and spontaneous communication when an individual is in a social interaction with an authority figure (Ghosh, 2011). Consistent with this speculation, in the present study, sub-Saharan African mock witnesses endorsed more hierarchy in social relationships (vertical collectivism) than Western European mock witnesses. Therefore, there is the possibility that the mere fact of reporting to an authority or expert (i.e. a researcher) may have produced cultural differences in the amount of details provided. Future research should explore the impact of this dimension further to (i) determine whether in an interview context, the presence of an authority figure plays a culture-related role in the amount of information reported by witnesses and (ii) explore how such differences might be attenuated.

None of the cultural groups appear to have processed background information deeply (cf. central details; Wong et al., 2017) as, regardless of cultural background, central details

dominated in the memory reports provided. This finding does not align with previous research suggesting collectivistic cultures attend holistically to a visual field (Istomin et al., 2014). However, it is worth noting that the stimuli used in our study were crime scenes and quite different from the stimuli used in previous research. Previous studies used stimuli such as pictures from the physical environment and artistic representations (Boduroglu et al., 2009; Miyamoto et al., 2006). The focus of attention when a crime occurs is likely not the same as any ordinary or neutral everyday scene. For example, in a robbery, the threatening and unusual nature of the scene will make it more likely for people at the scene to attend to this focal event than other activities that may be going on at the background. Perhaps, this can be likened to the phenomenon of weapon focus effect where a witness is inclined to attend to the weapon that is being used to attack than other details (Loftus, Loftus, & Messo, 1987). The tendency to attend more to noticeable details in a visual field is well documented (Loftus & Mackworth, 1978; Masuda & Nisbett, 2006, Experiment 3; Wang & Pomplun, 2012).

It is also worth noting that past research on culture and visual attention focused mostly on comparing East Asian and other Western cultures. Hence, even though African cultures are regarded as collectivistic, the findings for East Asian cultures may not be generalizable to sub-Saharan Africa. Studies in cross-cultural cognition have largely studied East Asian cultures and it may be that the collectivistic self (interdependent self-construal) may not be a one-size-fits-all phenomenon for all collectivistic cultures. This conclusion is consistent with the notion that collectivism is not a context-free construct (Triandis, 2001). As such, the self-construal for collectivistic cultures may be context-specific. For example, it has been argued that the interdependent self-construal among Africans does not suggest a total loss of the independent self in the collective (Adams & Dzokoto, 2003) and there may be different variations of the interdependent self-construal among collectivistic cultures. In

that vein, the holistic-analytic categorisation of visual attention across cultures may be relative. Future research should explore differences between and within different collectivist cultures.

The current results suggest that the cultural setting in which a crime is witnessed may also be important when considering eyewitness reports. Mock witnesses reported more correct central details for Ghanaian crime settings than for Dutch crime settings for free recall. When cued recall questions were asked, mock witnesses reported more correct central details for Dutch settings than Ghanaian settings. That finding partially aligns with the results of previous research. For example, Masuda and Nisbett (2006) found that both participants from individualistic (North America) and collectivistic (Japan) cultural groups detected focal changes to North American stimuli scenes quicker than they did for Japanese stimuli scenes. In the current research, sub-Saharan African mock witnesses reported more correct central details in free recall, when reporting about crime witnessed in their own-native setting than when it was witnessed in a non-native setting. This superior performance for crime witnessed in a native setting was not observed when cued recall questions were asked. However, Western European mock witnesses reported more correct central details when the witnessed crime was in their own-native setting than a non-native setting in cued recall, but not for free recall. The own-cultural-setting effect for central details observed for the cultural groups is consistent with work showing familiar environments have the tendency to modulate the processing of visual details (Epstein et al., 2007). However, that explanation does not fit for correct background details witnessed by sub-Saharan African mock witnesses when crime setting was considered, as sub-Saharan African mock-witnesses reported more contextual information about a non-native setting than they did for their own-native setting in cued recall. We suspect that because the non-native setting was an unfamiliar setting, participants

from sub-Saharan Africa may have attended more to contextual information in that setting than they did for their own-native setting. Future work should pursue the issue of crime context and how this relates to reporting in cross-cultural contexts.

There are some limitations associated with the current research. The first limitation relates to some unavoidable differences in the education levels for one of the cultural group samples. While the Dutch and urban Ghanaian samples comprised mainly university-level students with a similar age range and were, as such, well matched with respect to education level, this was not the case for the rural Ghanaian sample. Participants from rural Ghana had a minimal level of education and were relatively older. Both of these factors may have affected the performance of this group relative to the other experimental groups – although it is also worth noting that it would likely be impossible to recruit university-level educated sample in rural Ghana. Similar issues relating to the difficulty of matching samples across different cultures is common in the cultural literature (Buil, De Chernatony, & Martínez, 2012). A second possible methodological concern relates to the test language. As the study instructions were translated for participants in rural Ghana who lacked adequate comprehension of the English language, we do not rule out the possibility that the translation into a different language may have in some way affected the outcomes for the rural sample. Finally, we acknowledge that the static nature of the stimuli used limit generalizability to the eyewitness context. Typically, crime events involve dynamic movement and action and the reporting of such information may also vary culturally. While static images might be a useful starting point to examine reporting from memory, future research should adopt the more typical mock witness paradigm using recorded or live events.

## **Conclusion**

In this research, we sought to take the first steps in addressing an important gap in the eyewitness literature. Specifically, drawing on samples from sub-Saharan Africa and Western Europe, we examined eyewitness memory reports for differences predicted by theory in the cross-cultural literature. Our results show that individuals from individualistic cultures provide more details in their account of crime scene information, irrespective of type of detail. We also found evidence that regardless of the culture of an eyewitness, central details dominated in their report of crime scene information. Finally, we found evidence that the cultural setting in which a crime is witnessed may play a role in eyewitness memory reports. These findings not only identify important routes for future research in this area but also highlight the importance of considering the cultural background of the witness when eliciting memory reports. As such, these findings should be informative for legal and investigative professionals working in international criminal justice settings, border and security practitioners interviewing in asylum, migration and intelligence-gathering contexts, and law enforcement personnel who regularly interview witnesses from different cultural backgrounds.

## **Chapter 3: The acculturation effect and eyewitness memory reports among migrants**

This chapter is published as:

**Anakwah, N.**, Horselenberg, R., Hope, L., Amankwah-Poku, M & Van Koppen, P. J.  
(2020b). The acculturation effect and eyewitness memory reports. *Legal and  
Criminological Psychology*, 25 (2), 237 – 256. <https://doi.org/10.1111/lcrp.12179>

### Abstract

When people migrate to new cultures, they adapt to their new culture while at the same time retaining the norms of their original culture. The phenomenon whereby migrants adapt to the cultural norms of a host culture has been referred to as *acculturation*. Using a mock witness paradigm, we examined the acculturation effect in the eyewitness memory reports of sub-Saharan African migrants in Western Europe. We sampled sub-Saharan African migrants in Western Europe, as well as sub-Saharan Africans living in Africa as a control group (total  $N = 107$ ). The mock witnesses were shown stimuli scenes of crimes in African and Western European settings and provided free and cued recall reports about what they had seen. Central details were reported more than contextual details by both groups of sub-Saharan Africans. Relative to the control group of sub-Saharan Africans living in Africa, sub-Saharan African migrants in Western Europe provided more correct central details in free recall. The longer migrants had resided in Western Europe, the less collectivistic they become. Migrants also provided more elaborate reports the longer their duration of residence in Western Europe. The findings of the current research suggest the new cultural environment of migrants impacts their cultural norms, which may have implications for their eyewitness memory reports.

**Keywords:** eyewitness memory reports, acculturation, investigative interview, migrants



## Introduction

There has been an increasing trend in migration globally (United Nations Population Division, 2019) which means there is an increasing chance that legal and investigative professionals will interview eyewitnesses who are migrants. No matter who the migrant is or where they have been born, they would have been socialized into a particular cultural context. When individuals migrate to new cultures, they move with the cultural norms and values of their native culture (Sam & Berry, 2010). With time, they may adapt to their new cultural environment, internalizing some of the norms of the host culture in the process (Arends-Tóth & van de Vijver, 2009; Triandis, 2001). The culture in which individuals have been socialised can impact the content of their memory reports (Anakwah, Horselenberg, Hope, Amankwah-Poku, & van Koppen, 2020; Gutchess & Boduroglu, 2019; Wang, 2009). Given that migrants adapt to their new cultural environments, it is necessary to examine whether this adaptation process also shapes the content of their eyewitness memory reports. A lack of relevant knowledge about how migrants formulate their memory reports as a consequence of cultural or acculturation factors may impede efforts at eliciting eyewitness memory reports from migrants. In the current research, we examined whether the acculturation of migrants in their new cultural environment has any impact on their reports from memory about witnessed events.

### **Cross-cultural differences: Implications for memory reports**

Cultural orientation is the predisposition for members of a cultural group to think, feel, and act in ways consistent with the norms of the cultural group (Hofstede et al., 2010). Cultural orientation has been argued to be the basis for cross-cultural differences in social relationships (Chioneso, 2008; Hofstede, 2011; Lalwani, Shavitt, & Johnson, 2006; Uchendu, 2007). In his model of national cultures, Hofstede (1983; 2011) proposed six cultural

orientations (power distance, masculinity-femininity, individualism-collectivism, long-term orientation, indulgence-restraint, and uncertainty avoidance), with countries considered low or high on each of these dimensions. Among these cultural dimensions, the individualism-collectivism dimension has been argued as the most influential regarding social phenomena (Oyserman, Coon, & Kemmelmeier, 2002; Tassell, Flett, & Gavala, 2010; Triandis, 2001). Individualism refers to a cultural orientation where the relationships between individuals tend to be very loose, whereas in collectivism, the relationships between individuals tend to be very tight (Hofstede, 1983). In individualistic cultures, it is proposed that individual goals are prioritised above that of the group, whereas in collectivistic cultures the goals of the group and collective achievement are prioritised over that of the individual (Sharma et al., 2016). Thus, in collectivistic cultures, individuals are thought to be embedded in a strong cohesive in-group and are expected to remain committed to the in-group (Hofstede, 2001). Countries in Western Europe, North America, and Australia are examples of individualistic cultures whereas countries in sub-Saharan Africa, Asia, and Latin America are examples of collectivistic cultures (Gyekye, 2002; Hofstede, 2011; Minkov et al., 2017).

The prevailing cultural orientation of the society in which an individual is socialized can shape the individual's cultural self-construal and cognition (Chasiotis, Bender, Kiessling, & Hofer, 2010; Gutchess & Boduroglu, 2019; Huang & Park, 2013; Markus & Kitayama, 1991, 2003; Wang, 2001). According to prevalent theories in this domain, individuals socialised in collectivistic cultures tend to develop an interdependent self-construal, whereby the self is viewed as more integrated with the social context (Gyekye, 2002; Markus & Kitayama, 1991, 2010). Interdependent self-construal has been argued to lead to more holistic perception, making individuals inclined to attend more to context in a visual field (Boduroglu, Priti, & Nisbett, 2009; Miyamoto, Nisbett, & Masuda, 2006; Nisbett & Miyamoto, 2005). On the contrary, individuals socialised in individualistic cultures tend to

develop an independent self-construal, viewing the self more as containing unique dispositions (Markus & Kitayama, 1991, 2010). Independent self-construal has been argued to lead to analytic perception, making people socialised in such cultures more inclined to attend to focal details in a visual field (Chua, Boland, & Nisbett, 2005; Gutchess & Indeck, 2009; Miyamoto et al., 2006; Nisbett & Miyamoto, 2005). These purported cultural differences at the encoding stage have been argued to impact right through to the reporting stage (Istomin et al., 2014; Masuda & Nisbett, 2001). For example, Istomin et al. (2014) argue that cross-cultural difference in holistic-analytic cognition affects reporting norms of the respective cultures. Consistent with this perspective, some research suggests that individuals socialised in individualistic cultures report more information about focal details, while those socialized in collectivistic cultures report more information about contextual details (Istomin et al., 2014; Masuda, Gonzalez, Kwan, & Nisbett, 2008; Masuda & Nisbett, 2001).

Independent-interdependent self-construal has also been argued to lead to cross-cultural differences in terms of tendency to provide enhanced or elaborate responses (Leal et al., 2018; Wang, 2004). For example, it has been suggested that individuals from collectivistic cultures acquire a habitual modest response pattern through socialisation (Markus & Kitayama, 1991). This pattern has been attributed to the tendency for individuals from collectivistic cultures to exercise more self-restraint, a phenomenon known as self-effacement (Yamagishi et al., 2012b). Conversely, in individualistic cultures where the self is viewed as more unique and possessing dispositional attributes to a great extent (Markus & Kitayama, 1991), there is a tendency to show less restraint and be less modest in individual responses, a phenomenon referred to as self-enhancement (Yamagishi et al., 2012b). Thus, whereas individuals from individualistic cultures tend towards self-expression, those from collectivistic cultures are likely to be more self-restrained. These cultural differences in self-

presentation have been argued to reflect in the content of memory reports (Schwarz, Oyserman, & Peytcheva, 2010). For example, previous research suggests cultural differences in self-presentation shape autobiographical memory reports, with individuals from individualistic cultures providing more explicit and detailed autobiographical memory reports (Wang, 2004).

Consistent with research on cultural self-construal and autobiographical memory, research has also demonstrated cultural differences in eyewitness memory reports. For example in research by Anakwah et al. (2020), participants from a collectivistic culture (Ghana) and an individualistic culture (The Netherlands) were shown stimuli scenes of crime scenarios in both countries and reported what they saw. Results showed that mock witnesses from individualistic cultures provided more detailed memory reports than mock witnesses from collectivistic cultures, with a large effect size. Interestingly, irrespective of cultural background, mock witnesses reported more central details than background details. The authors also found that mock witnesses from both cultural groups reported more details when the crime was witnessed in their own-native setting than a non-native setting. These findings suggest that a person's cultural orientation and the cultural setting of the witnessed crime can impact the content of their memory reports. If the culture in which individuals are socialised shape their memory reports, does the content of such reports change when one migrates to a new cultural environment?

### **Acculturation: Implications for eyewitness memory reports**

The phenomenon whereby individuals who have been socialised in their native culture migrate to a new culture and adapt to the norms of the host culture has been referred to as acculturation (Berry, 2003; Birman & Simon, 2013; Chudek, Cheung, & Heine, 2015; Kim, 2001). The acculturation process involves both cultural and psychological change

(Berry, 2003; Bhugra, 2004; Hedden, Ketay, Aron, Markus, & Gabrieli, 2008). For example, it has been shown that the traditional family values of immigrants with collectivistic cultural orientation living in an individualistic culture decrease with time living in the new cultural environment (Rosenthal, Ranieri, & Klimidis, 1996). As cultural orientation systematically impacts cognition (Chasiotis et al., 2010; Markus & Kitayama, 1991; Park & Huang, 2010), the shifting of the traditional cultural values of the immigrants could also systematically shape their behavior and cognition. It is possible that when migrants adapt to a new cultural environment, the adaptation process systematically shapes their cultural self-construal and psychological processes. Consistent with this argument, research by Mesoudi, Magid, and Hussain (2016) suggests that migrants from collectivistic cultures now living in individualistic cultures do not differ from the indigenes of the host culture in terms of holistic-analytic cognition and self-enhancement, the individualistic cultural disposition to be self-expressive and less restrained. In this research, participants were groups of migrants with collectivistic cultural backgrounds living in the UK and groups of British non-migrants who completed measures of cultural orientation and cognitive styles (categorization and drawing tasks). The researchers also observed that migrants declined in collectivism the longer they lived in the host culture. Although no longitudinal or transitional data were available, such similarities are suggestive of an acculturation effect on the migrants' cultural orientation and psychological processes. As such, the content of eyewitness memory reports of migrants living in individualistic cultures may share similarities with that of eyewitnesses from the host culture.

Previous work suggests that the content of the autobiographical memory reports of migrants may be shaped by acculturation (Kim, 2013; Wang, 2013). For example, in a study by Wang (2013), Asian immigrants and Caucasians living in the US received text messages three times within a week that asked them to record what was happening 30 minutes before

they received the text message. At the end of the week, the participants were given surprise memory tests about what they had recorded. The Asian migrants and the indigenous Caucasians did not differ in their autobiographical memory reports. It was also observed that Asian migrants who moved to the USA at an earlier age identified more with American culture and provided more elaborate details than those who migrated at an older age. Thus, while it is important that forensic interviews consider the cultural background of the interviewee, taking cultural background into account when interviewing eyewitnesses who are migrants, without an appreciation of whether acculturation factors might influence their memory reports, may be counterproductive.

### **The Present Study**

Eyewitness evidence is crucial in legal proceedings. Criminal prosecutions, as well as legal decision-making, often rely on eyewitness accounts (Albright, 2017; Fisher, 2010; Wells et al., 2020). To date, there is no research examining the impact of migrants' acculturation on their eyewitness memory reports. Also, studies on acculturation have usually compared migrants with participants from the host culture (Arends-Tóth & van de Vijver, 2009; Mesoudi, Magid, & Hussain, 2016). While that approach allows comparison of cultural values, it does not enable an assessment of potential divergence of cultural orientation within the same cultural group when some have migrated but others have not. An appropriate comparison group in this regard would be members of the same cultural group currently living in the native culture.

Individualistic cultures are usually the regions of destinations for most migrants, who mostly are from countries with collectivistic orientation (Birman & Simon, 2013; United Nations Population Division, 2019). In the current study, we compared the eyewitness memory reports of migrants with a collectivistic cultural background but living in an

individualistic culture, with that of those living in their native culture. We recruited sub-Saharan African migrants living in Western Europe, with sub-Saharan Africans living in Africa as a comparison control group. Based on previous findings (Rosenthal et al., 1996), we expected that during the years in Western Europe, self-reported collectivism among sub-Saharan African migrants would decrease. We also expected that the self-reported individualism of sub-Saharan African migrants would increase during the years in Western Europe. Based on the findings of previous research (Anakwah et al., 2020a), we predicted that sub-Saharan Africans living in Western Europe would report more central and background details than sub-Saharan Africans living in Africa. Although previous research suggests that mock witnesses report more details for their own-native setting than a non-native setting (Anakwah et al., 2020a), in view of the hypothesized acculturation, we expected these migrants to report an equal amount of details for sub-Saharan African crime settings and Western European crime settings.

## Methods

### Participants and Design

A total of 107 participants took part in the current study. Of these, 60 (10 females, 50 males;  $M_{age} = 21.03$ ,  $SD = 2.58$ ) were sub-Saharan Africans living in Africa and 47 (22 females, 25 males,  $M_{age} = 25.38$ ,  $SD = 4.96$ ) were sub-Saharan African migrants living in Western Europe. Sub-Saharan Africans in Western Europe were from Ghana ( $n=20$ ), Guineas Bissau ( $n=3$ ), Kenya ( $n=4$ ), Malawi ( $n=1$ ), Nigeria ( $n=11$ ), Tanzania ( $n=2$ ), Uganda ( $n=2$ ) and Zimbabwe ( $n=3$ ). One sub-Saharan African migrant did not specify the country of origin.<sup>6</sup> The migrants were sampled in the Netherlands and the United Kingdom. All the

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<sup>6</sup> This participant was included in analysis as he fell within inclusion criteria specifying sub-Sahara African migrants.

countries migrants originated from are collectivistic in cultural orientation (Hofstede, 1983, 2011; Minkov et al., 2017). Participants in this sample all had university-level education at either bachelors or postgraduate education level (see Supplementary Materials for exploratory analyses with respect to education).<sup>7</sup> The average duration of residence of the migrants in Western Europe was 99.33 months ( $SD = 101.89$ ; range: 2 – 288 months, equivalence of 0.17 – 24 years). Sub-Saharan Africans living in Africa were born and raised in Ghana.

Participants who volunteered for compensation were given a €5 shopping voucher in Western Europe, or a GHC10 credit card voucher in sub-Saharan Africa; some participants opted to take part without compensation. The design was a 2 (Group location: Africans living in Western Europe, Africans living in Africa) X 2 (Crime setting: European setting, African setting) mixed factorial design. The between-group variable was cultural group and the within-group variable was crime setting. Dependent variables were correct details, incorrect details, and unanswered questions (Don't know responses)<sup>8</sup> for both central and background information.

## Materials

**Stimuli.** Eight photographs with rich central and background details were used as stimuli. These photographs consisted of four different crime scenarios (a theft, assault, robbery, and an accident). Each of the depicted crime scenarios had a Ghanaian and a Dutch setting. The staged crimes in these settings were by actors from the respective countries. For example, actors for scenarios for Ghanaian settings were all from sub-Saharan Africa. Similarly, actors for scenarios for Dutch settings were from Western Europe. Also, the actors in the respective photos were different for each of the stimuli, for both Dutch and Ghanaian

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<sup>7</sup> Only one of the sub-Saharan Africans living in Africa had primary education level. Excluding data for this participant did not change the pattern of results so it was included in the analysis.

<sup>8</sup> This variable refers to situations where participants responded don't know or don't remember.



settings. This variation was introduced to limit the impact of any stimuli specific effects. The stimuli were developed, piloted and used in a previous study (Anakwah et al., 2020a). In that study, two of the stimuli were piloted (1 Ghanaian setting and 1 Dutch setting) in Ghana and the Netherlands to find out whether participants regard them as representing their respective settings, and also a crime setting. A total of 14 participants (9 males, 5 females,  $M = 24.07$ ,  $SD = 3.20$ ) from Ghana and 15 participants (4 males, 11 females,  $M = 30.40$ ,  $SD = 13.12$ ) from the Netherlands rated the extent to which the stimuli represented scenes in Western Europe and sub-Saharan Africa, using a five-point Likert scale. The mid-rating score was used as a criterion in determining whether the stimuli received an adequate rating, consistent with previous research (Paz-Alonso et al., 2013). Participants rated the stimuli to adequately represent settings in their respective countries (Ghanaian stimuli –  $M = 3.79$ ,  $SD = .97$ ; Dutch stimuli –  $M = 3.33$ ,  $SD = .62$ ) and also reflect plausible crime scenes (Ghanaian stimuli –  $M = 3.43$ ,  $SD = 1.28$ ; Dutch stimuli –  $M = 3.47$ ,  $SD = .83$ ). Consistent with previous studies, we operationalised centrality both in terms of importance to the plot and visual centrality (Boduroglu et al., 2009; Mahé, Corson, Verrier, & Payoux, 2015; Masuda & Nisbett, 2006; Wong et al., 2017; Wyler & Oswald, 2016). To confirm what constituted central and background event(s), participants in the pilot test made centrality judgments. They were asked the following questions: (a) “What do you regard as central event”, and (b) “What do you regard as background events”. Participants' judgement of central and background events was consistent with our operationalisation, in line with previous research (Davidson & Vanegas, 2015). The stimuli are available at Open Science Framework via [https://osf.io/t89hu/?view\\_only=59e038117b2d4d5588e00c804de3539a](https://osf.io/t89hu/?view_only=59e038117b2d4d5588e00c804de3539a).

***Cultural orientation scale.*** The cultural orientation scale (Triandis & Gelfand, 1998) was used to measure the self-reported cultural orientation of participants. The scale measures individualism and collectivism across 16 items and uses a nine-point Likert scale ranging

from 1 (never or definitely no) to 9 (always or definitely yes). Sample items are '*Family members should stick together, no matter what sacrifices are required*' and '*My personal identity, independent of others, is very important to me*'. The cultural orientation scale has a reliability of .75 (Gelfand & Realo, 1999).

### **Procedures**

After consenting to participation, participants completed the cultural orientation scale and provided demographic details (gender, education level, country of origin, and duration of residence in host country). They then viewed the first crime scenario for five seconds. This exposure duration is consistent with exposure durations used in previous studies using similar methodologies (e.g., Levy-Gigi & Vakil, 2014; Prull & Yockelson, 2013; Wang & Pomplun, 2012). Following this, participants completed a short distraction task (mathematical problem) for five minutes. After that, participants provided a free recall account of what they had seen in the crime scenario. They were asked to provide as much information as possible in their own words and to be as accurate and detailed as possible. Participants had up to six minutes to provide this verbal free recall and were informed they still had time to remember and report more if they finished their initial account before the six minutes had elapsed. This time limit was based on earlier pilot observations and all participants completed their account before six minutes had elapsed. Following the free recall task, participants were asked a series of cued recall questions about the scenario. The cued recall task consisted of 20 questions about details of the stimulus event (10 questions each about central and background details). Cued recall questions alternated between central and background details. Participants then viewed the next crime scenario after which they completed a distraction task. Again, this was followed by free and cued recall tasks. The instructions and questions were in English,

for all participants, who were all proficient in the language.<sup>9</sup> The procedure continued, using exactly the same instructions for all groups until participants had finished viewing all four of the crime scenario stimuli. The presentation of the crime scenario stimuli was counterbalanced. The interviews were conducted by the first author and a research assistant, who were both trained on the study protocol and used the same script. The study protocol received ethical approval from the Ethics Review Committee Inner City faculties, Maastricht University, and the Ethics Committee for the Humanities, University of Ghana.

### **Coding**

The coding protocol used by Anakwah et al. (2020) was used in coding the transcripts for the current experiment. The protocol categorises the crime scenario details into central and background information, based on the stimulus centrality established in the pilot study. For both the free and cued recall tasks, information that was present in the stimuli and accurately described was scored as correct. Information that was present but described inaccurately was scored as incorrect. A response was also scored as incorrect if it was a detail mentioned by participants that was not actually present in the scene. ‘Don’t know’ or ‘Don’t remember’ responses to cued recall questions were coded as unanswered questions. Subjective (e.g, The car belonged to the woman lying on the floor) and vague responses (e.g, left or right arm) were not coded. Each detail that was scored as correct received 1 point. Similarly, each detail scored as incorrect received 1 point. This was same for both free and cued recall. Don’t know responses under cued recall also received 1 point each. The scores were aggregated for the respective variables. The first author conducted the coding. A second coder who was also trained on the coding guide and blind to the hypothesis coded 17% of the

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<sup>9</sup> All migrant participants and participants in Ghana were proficient in English. The official language and medium of instruction in educational institutions, from basic to tertiary level in Ghana is English.

transcripts for inter-coder reliability. There was high inter-rater reliability. Intra-class correlation coefficients ranged from .72 to .99 (see Supplementary Materials).

## Results

The analysis was conducted using mixed ANOVA with group location as the between-subjects factor and crime setting as the within-subject factor. Pearson's  $r$  was used for analysis on the relationship between migrants' duration of residence and internalised cultural norms, as well as analysis on the relationship between migrants' duration of residence and reported details.

### Free recall

**Central Details.** There was a significant main effect of group location on the number of correct central details reported,  $F(1, 105) = 5.32, p = .02, \eta_p^2 = .05$ . Sub-Saharan African migrant mock witnesses ( $M = 12.81, SD = 6.31$ ) reported more correct central details than sub-Saharan African mock witnesses living in Africa ( $M = 9.98, SD = 6.27$ ). See Table 3.1 for descriptive statistics. Crime setting did not have a significant main effect on the number of correct central details reported,  $F(1, 105) = .48, p = .49, \eta_p^2 = .01$ . The interaction between location and crime setting for the number of correct central details reported was also not significant,  $F(1, 105) = .61, p = .44, \eta_p^2 = .01$ .

Group location did not have a significant main effect on the number of incorrect central details reported,  $F(1,105) = 3.74, p = .06, \eta_p^2 = .03$ . We proceeded with a Bayes analysis and found a Bayes Factor of  $BF_{01} = 1.09$ , showing a weak evidence in favour of the null hypothesis (Raftery, 1995). Sub-Saharan African migrants in Western Europe ( $M = .88, SD = .89$ ) reported more incorrect central details than sub-Saharan Africans located in Africa

( $M = .55$ ,  $SD = .85$ ). The setting of crime also did not have a significant main effect on the number of incorrect central details reported,  $F(1, 105) = .00$ ,  $p = .98$ ,  $\eta_p^2 = .000$ . The interaction between group location and crime setting was also not significant  $F(1, 105) = 1.90$ ,  $p = .17$ ,  $\eta_p^2 = .02$ .

**Background Details.** Location of group did not have a significant main effect on the number of correct background details reported,  $F(1, 105) = .96$ ,  $p = .33$ ,  $\eta_p^2 = .01$ . Crime setting, however, had a significant main effect on the number of correct background details reported,  $F(1, 105) = 4.19$ ,  $p = .04$ ,  $\eta_p^2 = .04$ . Mock witnesses reported more correct background details for Western European crime settings ( $M = 8.59$ ,  $SD = .47$ ) than they did for sub-Saharan African crime settings ( $M = 7.38$ ,  $SD = .59$ ). There was no interaction effect between crime setting and location of group on correct background details  $F(1, 105) = .87$ ,  $p = .35$ ,  $\eta_p^2 = .01$ .

There was a significant main effect of group location on the number of incorrect background details  $F(1, 105) = 6.24$ ,  $p = .01$ ,  $\eta_p^2 = .06$ . Sub-Saharan African migrant mock witnesses ( $M = .77$ ,  $SD = .82$ ) reported more incorrect background details than sub-Saharan Africans living in Africa ( $M = .38$ ,  $SD = .77$ ). See Table 3.1 for descriptive statistics. The setting of crime also had a significant main effect on the number of incorrect background details  $F(1, 105) = 11.61$ ,  $p = .001$ ,  $\eta_p^2 = .10$ . Mock witnesses reported more incorrect background details for Western European crime settings ( $M = .72$ ,  $SD = 1.10$ ) than they did for sub-Saharan African crime settings ( $M = .37$ ,  $SD = .81$ ). However, there was no interaction effect between group and crime setting on incorrect background details  $F(1, 105) = 1.49$ ,  $p = .23$ ,  $\eta_p^2 = .01$ .

Table 3. 1

*Mean (standard deviation) of correct details, incorrect details, and unanswered questions by groups*

			Sub-Saharan African migrants	Sub-Saharan Africans in Africa
			<i>M (SD)</i>	<i>(M (SD))</i>
Free Recall	<i>Correct</i>	Central	12.81 (6.31)	9.98 (6.27)
		Background	8.42 (4.52)	7.55 (4.57)
	<i>Incorrect</i>	Central	.88 (.89)	.55 (.85)
		Background	.77 (.82)	.38 (.77)
Cued Recall	<i>Correct</i>	Central	17.75 (4.80)	16.83 (4.80)
		Background	8.89 (4.18)	7.79 (4.18)
	<i>Incorrect</i>	Central	5.53 (2.19)	4.29 (2.25)
		Background	4.87 (2.54)	4.23 (2.56)
	<i>Unanswered Questions</i>	Central	5.00 (2.61)	5.23 (2.63)
		Background	8.65 (3.63)	9.23 (3.64)

### **Cued Recall**

**Central Details.** Location had no significant main effect on correct central details reported under the cued recall task,  $F(1, 105) = .97, p = .33, \eta_p^2 = .01$ . Neither the main effect of crime,  $F(1, 105) = .61, p = .44, \eta_p^2 = .01$ , nor the interaction,  $F(1, 105) = 2.70, p = .104, \eta_p^2 = .03$ , was significant for the number of correct central details reported in response to cued recall questions.

There was a significant effect of group on incorrect central details reported in response to cued recall questions,  $F(1, 105) = 8.29, p = .01, \eta_p^2 = .07$ . Sub-Saharan African

migrants ( $M = 5.53$ ,  $SD = 2.19$ ) provided more incorrect central details than sub-Saharan Africans living in Africa did ( $M = 4.29$ ,  $SD = 2.24$ ). Setting of crime did not have a significant main effect on incorrect central details reported,  $F(1, 105) = .39$ ,  $p = .54$ ,  $\eta_p^2 = .004$ . There was also no interaction effect between group and crime setting on incorrect central details reported,  $F(1, 105) = 1.30$ ,  $p = .26$ ,  $\eta_p^2 = .01$ .

The setting of crime had a significant effect on unanswered questions for central details,  $F(1, 105) = 19.30$ ,  $p < .001$ ,  $\eta_p^2 = .16$ . There were more unanswered questions about central details for Western European crime settings ( $M = 5.66$ ,  $SD = 2.90$ ) than there was for sub-Saharan African crime settings ( $M = 4.58$ ,  $SD = 2.90$ ). Neither the main effect of location,  $F(1, 105) = .21$ ,  $p = .65$ ,  $\eta_p^2 = .002$ , nor the interaction between location and crime setting,  $F(1, 105) = 1.65$ ,  $p = .20$ ,  $\eta_p^2 = .02$  for unanswered questions about central details was significant.

Table 3. 2

*Mean (standard deviation) of correct details, incorrect details, and unanswered questions for crime setting by groups*

		Sub-Saharan African Migrants		Sub-Saharan Africans in Africa		
		Ghanaian setting	Dutch setting	Ghanaian setting	Dutch setting	
		<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Free Recall	Correct	Central	12.79 (7.58)	12.83 (8.85)	10.35 (5.44)	9.62 (5.35)
		Background	8.09 (7.11)	8.74 (4.78)	6.67 (5.11)	8.43 (4.77)
	Incorrect	Central	.79 (1.06)	.98 (1.38)	.65 (1.33)	.45 (.75)
		Background	.66 (1.05)	.87 (1.19)	.15 (.44)	.60 (1.01)
Cued Recall	Correct	Central	17.51 (6.01)	17.98 (6.72)	17.48 (4.70)	16.17 (4.91)
		Background	7.15 (5.81)	10.64 (5.92)	6.25 (3.44)	9.33 (4.54)
	Incorrect	Central	5.79 (3.49)	5.28 (2.56)	4.22 (2.31)	4.37 (2.31)
		Background	4.04 (3.58)	5.70 (3.44)	4.03 (2.30)	4.42 (2.47)
	Unanswered Questions	Central	4.62 (3.09)	5.38 (3.03)	4.53 (2.70)	5.38 (.3.03)
		Background	9.43 (5.10)	7.87 (4.31)	9.82 (3.75)	8.63 (3.90)



**Background Details.** The setting in which the crime was witnessed had a significant main effect on correct background details reported by mock witnesses in response to cued recall questions,  $F(1, 105) = 44.11, p < .001, \eta_p^2 = .30$ . Mock witnesses reported more correct background details if the crime was witnessed in a Dutch setting ( $M = 9.91, SD = 5.20$ ) than if it was witnessed in a Ghanaian setting ( $M = 6.64, SD = 4.63$ ). Neither the main effect of location,  $F(1, 105) = 1.8, p = .18, \eta_p^2 = .02$ , nor the interaction effect between location and setting of crime,  $F(1, 105) = .17, p = .68, \eta_p^2 = .002$ , on correct background details reported was significant.

Location had no significant main effect on incorrect background details reported,  $F(1, 105) = 1.72, p = .19, \eta_p^2 = .02$ . The setting of the crime, however, had a significant main effect on incorrect background details reported by the groups,  $F(1, 105) = 12.71, p = .001, \eta_p^2 = .11$ . Mock witnesses reported more incorrect background details for Western European crime settings ( $M = 5.06, SD = 2.30$ ) than they did for sub-Saharan African crime settings ( $M = 4.04, SD = 2.30$ ). Group location and crime setting had a significant interaction effect on incorrect background details reported,  $F(1, 105) = 4.96, p = .03, \eta_p^2 = .05$ . Sub-Saharan African migrant mock witnesses significantly reported more incorrect background details for Western European crime settings than they did for sub-Saharan African crime settings ( $p = .001$ ). Sub-Saharan Africans located in Africa, however, did not differ in incorrect background details reported for both crime settings ( $p = .30$ ). See Table 3.2 for descriptive statistics.

There was no significant main effect of group on unanswered questions about background details  $F(1, 105) = .65, p = .42, \eta_p^2 = .01$ . Setting of crime had a significant main effect on unanswered questions about background details  $F(1, 105) = 10.75, p = .001, \eta_p^2 = .09$ . There were more unanswered questions about background details for sub-Saharan

African crime settings ( $M = 9.62$ ,  $SD = 4.45$ ) than Western European crime settings ( $M = 8.25$ ,  $SD = 4.14$ ). However, there was no interaction effect between group and crime setting on unanswered questions about background details  $F(1, 105) = .20$ ,  $p = .66$ ,  $\eta_p^2 = .002$ .

### Prioritised Details

A repeated measures ANOVA was used to determine the type of detail that was mostly reported in the eyewitness memory reports of migrants. Sub-Saharan African migrants in Western Europe provided significantly more central details than background details in both free recall  $F(1, 46) = 23.79$ ,  $p < .001$ ,  $\eta_p^2 = .34$ , and cued recall tasks  $F(1, 46) = 119.92$ ,  $p < .001$ ,  $\eta_p^2 = .72$ . Similarly, sub-Saharan Africans in Africa also significantly reported more central details than they did for background details, also for both free recall  $F(1, 59) = 17.05$ ,  $p < .001$ ,  $\eta_p^2 = .22$ , and cued recall  $F(1, 59) = 232.68$ ,  $p < .001$ ,  $\eta_p^2 = .80$ . See Table 3.3 for descriptive statistics on prioritised details.

Table 3. 3

*Mean (Standard Deviation) of amount of central vs background details for groups under free and cued recall*

	Sub-Saharan African migrants		Sub-Saharan Africans in Africa	
	Central	Background	Central	Background
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Free Recall	27.38 (16.41)	18.36 (11.22)	21.07 (10.80)	15.85 (8.48)
Cued Recall	46.55 (14.23)	27.53 (14.40)	42.23 (9.24)	24.03 (8.07)

### **Duration of residence and memory reports**

There was a small but significant relationship between the number of correct central details reported and duration of residence in Western Europe, for both free recall ( $r(47) = .29, p = .048$ ) and cued recall ( $r(47) = .30, p = .041$ ). There was, however, no significant relationship between migrants' duration of residence in individualistic culture and the number of correct background details reported for free recall ( $r(47) = .12, p = .442$ ) and cued recall ( $r(47) = .07, p = .624$ ).

### **Migrants and self-reported individualism/collectivism**

There was a significant difference in self-reported individualism for the two groups,  $t(105) = 2.43, p = .02, d = .47$ . Sub-Saharan Africans in Africa ( $M = 51.35, SD = 9.55$ ) gave higher ratings on individualism than sub-Saharan Africans in Western Europe ( $M = 46.96, SD = 8.91$ ). Self-reported collectivism between migrants in Western Europe and Africans located in Africa did not significantly differ,  $t(105) = .77, p = .45, d = .15$ . However, we found a significant negative correlation between sub-Saharan African migrants' duration of residence in Western Europe and their self-reported collectivism,  $r(47) = -.56, p < .001$ . Duration of residence in Western Europe was not related with self-reported individualism  $r(47) = .01, p = .97$ .

## **Discussion**

In this study, we compared eyewitness memory reports provided by sub-Saharan African migrants with reports provided by sub-Saharan Africans located in Africa. We found that mock witnesses across groups reported central details more than they did for background details. We also found that sub-Saharan African migrants in Western Europe provided more correct central details in their free recall accounts than did sub-Saharan Africans in Africa.

An exploratory correlation analysis suggested that the sub-Saharan African migrants reported more details the longer they lived in Western Europe.

We hypothesized that sub-Saharan African migrants in Western Europe would report more central and background details than sub-Saharan Africans living in Africa. This hypothesis was partly confirmed as sub-Saharan African migrants reported more correct central details in their free recall than did sub-Saharan Africans living in Africa. This more elaborative reporting by sub-Saharan African migrant mock witnesses could be due to reporting norms in Western cultures that emphasize explicitness (Holtgraves, 1997). Previous research has reported a similar pattern of findings, with Western Europeans providing more detailed responses in their memory reports than sub-Saharan Africans living in Africa (Anakwah et al., 2020a). Through childhood socialization, people from individualistic cultures tend to become more elaborate in communication than people from collectivistic cultures (Jobson, 2009). Wang and colleagues (Wang & Ross, 2005; Wang, Song, & Kim Koh, 2017) argued that such cultural differences in memory reports occur because each culture creates a model of what life narratives or personal storytelling should look like, resulting in response bias in memory narratives. The model for reporting life narratives in individualistic cultures tends to emphasise specificity and explicitness whereas in collectivistic cultures, reporting models tend to be more general and less explicit (Jobson, 2009; Wang, 2001). Hence, it is possible that through socialization in the new culture, the migrants become adapted to the reporting models of the individualistic culture overtime. That speculation is consistent with the finding that migrants reported more elaborate details the longer they have lived in their new culture. Living in the new cultural environment could facilitate cultural learning and socialization into the host cultural norms. Thus, socialization might occur not only when one migrates as a child or adolescent, but is also the case for adult migrants. That is because, although cultural norms have been suggested to be formalised in

childhood and adolescence (Chua et al., 2005; Nisbett & Masuda, 2003), cultural learning facilitates the adaptation of adult migrants to the new cultural environment (Hsu, 2010; Mesoudi, 2018). This adaptation, however, may be more rapid for those who migrated at a younger age (before age 15; Cheung et al., 2011; Tsai, Ying, & Lee, 2000). Notwithstanding, research also shows sub-Saharan migrants who migrated as adults seem to adapt more quickly to the host culture overtime (Chudek et al., 2015). Future research should explore differences in memory reports between those who migrated as children and those who migrated as adults.

It is possible that as migrants adapt to their new cultural environment, they also become predisposed to self-enhance, a cultural disposition identified among individualistic cultures (Takata, 2003; Yamagishi et al., 2012b). Research has shown cultural differences in self-expression, with self-enhancement identified as a characteristic of individualistic cultures whereas self-effacement is identified as a feature of collectivistic cultures (Suzuki et al., 2008). Markus and Kitayama (1991) argued that the modest self-presentation among collectivistic cultures could lead to giving modest responses and providing descriptions that are abstract and lack informativeness. That tendency for cultures to differ at the level of description might be illustrated by contrasting American and Japanese proverbs, two cultures that reflect the individualistic and collectivistic dimensions, respectively. Markus and Kitayama (1991) note the difference between the American proverb ‘the squeaky wheel gets the grease’ and the Japanese proverb ‘the nail that sticks out gets pounded’ (p. 224). These proverbs in the respective cultures illustrate cultural differences in self-presentation. When migrants from a collectivistic culture move to an individualistic culture, it is likely that the demands of the new culture require migrants from collectivistic cultures to assert their uniqueness. It is possible that, in terms of self-presentation, they become less modest and instead, assert their unique traits and attributes as a way of adapting to the host culture. For

example, Hsu (2010) argues that the communication traits of migrants become more similar to those of the host culture in an effort to meet the new cultural demands. The shift in self-presentation is consistent with studies that have found migrants from collectivistic cultures do not differ from the non-migrant individualistic cultural group in self-enhancement (Mesoudi et al., 2016). It may be helpful to assess the cultural adaptation of the migrant witness (e.g., using a cultural adaptation inventory) to determine migrants' level of acculturation and tailor interviewing techniques accordingly. Thus, we recommend future research to examine this issue further in field settings.

Consistent with the acculturation effect, we found sub-Saharan African migrants' self-reported collectivism decreased with time living in Western Europe. This finding is consistent with studies showing that when people migrate to a different cultural environment, their cultural orientation is impacted as they adapt to the host culture (Bhugra, 2004; Rosenthal et al., 1996). Research suggests such migrants can be primed to respond in a manner consistent with either the norms of the host culture or that of their home culture (Adair & Xiong, 2018; Mok & Morris, 2009; Peng & Knowles, 2003; Wang, 2008; Wang & Ross, 2005). Thus, it is possible the migrants adjust their cognitive style depending on the cultural context. In forensic and asylum seeker settings, priming migrants' self-construal might be beneficial for information elicitation. Research on cultural priming has demonstrated the content of memory reports reflects aspects of the self-construal that is primed (Wang & Ross, 2005). Techniques employed in previous research to prime the independent self-construal included asking participants to describe themselves as unique individuals or listing personal attributes and beliefs about themselves, prior to recall (Wang & Ross, 2005). Such priming techniques have been shown to yield results consistent with the aspect of the self that is primed. Future research should examine whether cultural priming would facilitate memory reports consistent with the reporting norms of the primed culture.

There were similar amounts of unanswered questions by Sub-Saharan African migrant mock witnesses and sub-Saharan Africans living in Africa. In a previous study, more questions were left unanswered by mock witnesses from collectivistic cultures than mock witnesses from individualistic cultures (Anakwah et al., 2020a). The authors argued that mock witnesses from collectivistic cultural background used strict criterion for reporting, which resulted in leaving questions they were not certain or confident about the answer unanswered (Anakwah et al., 2020a). The findings of the current study suggest that when people from collectivistic cultures migrate to individualistic cultures, that tendency might persist in their memory reports. Thus, even though migrants adapt to their new cultural environment, this does not affect confidence in their memory reports. Hence, during investigative interviews with eyewitnesses who are migrants from collectivistic cultures, it may be appropriate to emphasize that they should report any detail they remember no matter how insignificant it might be. Future research should examine accuracy-confidence trade-offs in memory reports across different cultural groups, including migrants.

Both sub-Saharan African migrants and sub-Saharan Africans living in Africa reported central details more than background details. That finding is not consistent with research on self-construal and cognition suggesting individuals with collectivistic cultural orientation report more contextual than focal details (Istomin et al., 2014; Masuda, Gonzalez, et al., 2008). That could be attributed to the fact that previous research on self-construal and cognition used neutral and ordinary scenes as the to-be-remembered stimuli. The stimuli used in the current study, however, depicted crime scenarios. The threatening nature of a crime may draw more attention to the focal details and featured prominently in memory reports than other contextual details (Yegiyani & Lang, 2010). The current finding is consistent with previous research in which mock witnesses reported more central details (cf. background

details) about a crime scenario, regardless of their cultural background (Anakwah et al., 2020a).

There are some limitations associated with the present research. The varied experiences when people migrate may limit the generalizability of the study findings. People migrate for different reasons, including to pursue education, to continue relationships, to benefit economically and to seek asylum. Depending on their reasons for migration, migrants are likely to have quite different experiences and exposure to the host culture (Orton, 2012). For example, people who migrated for education or economic reasons are more likely to come into contact with other members of the host culture. As most participants in our study had migrated for education and economic reasons they are likely to have other members of the host culture within their social network, facilitating exposure to the host cultural norms. Conversely, some migrants may have minimal social contact with other members of the host culture. Research has shown minimal change in cultural norms among migrants whose social network is limited to migrant members of their home culture (Chioneso, 2008). Future research should examine the extent to which acculturation affects the eyewitness memory report among such migrants. A related limitation is that motivation to embrace the host culture among migrants may vary. For example, migrants who have migrated to Europe for the long-term might have a strong motivation to embrace and adapt to the host culture than migrants who are in Europe for a short period. Thus, it is likely that the effects of acculturation might differ depending on the motivation of migrants to engage with the host culture. Future research should examine whether motivation to engage with the host culture plays any role in the acculturation effect. It is also possible that people who choose to migrate, share some idiosyncratic features that could be a confound in the current study. In other words, it may be the case that migrants are already different in some way from the population who stay in their native country. A longitudinal design tracking the nature of



memory reports of migrants over time, from the period of arrival in the host country, may contribute to a fuller understanding of the extent of acculturation in the memory reports. That said, the comparison group of sub-Saharan Africans located in Africa was a first step in determining how the reporting norms of African migrants change as they adapt to their new culture. This approach is consistent with previous acculturation research where group differences and duration of residence in the host culture were used as a proxy for acculturation (e.g., Berry, Phinney, Sam, & Vedder, 2006; Cheung et al., 2011; Chudek et al., 2015; Wang, 2013; Wang & Ross, 2005).

We also acknowledge the possibility of cross-cultural factors to have accounted for the ratings on the Cultural Orientation Scale. For example, sub-Saharan Africans in Africa self-reported high individualism ratings, inconsistent with the individualism-collectivism model of national cultures. In our previous study comparing Africans with Western Europeans, we found a similar pattern (Anakwah et al., 2020a). Specifically, in that study, sub-Saharan Africans living in Africa self-reported higher individualism scores than Western Europeans. Also, sub-Saharan Africans in Africa in that study did not differ from Western Europeans on self-reported collectivism. Such unexpected responding has been shown to be attributable to a response process that is culturally grounded (Harzing, 2006) and concerns over such unexpected differences have been expressed in the cross-cultural research literature (Bou Malham & Saucier, 2016; Lalwani et al., 2006). Previous research in cross-cultural psychology has shown that social desirability/ acquiescence response patterns are stronger among collectivistic cultural samples (de Bruine, Vredeveltdt, & van Koppen, 2018; He & Van de Vijver, 2016; Kim & Kim, 2016), and this issue has been highlighted as a major challenge in conducting cross-cultural surveys (Kimmelmeier, 2016). In view of such response bias in previous cross-cultural surveys, some have argued response bias in cross-

cultural studies should be considered a cultural behaviour in themselves (Bou Malham & Saucier, 2016; Kemmelmeier, 2016).

Finally, we acknowledge the possibility of the instruction for participants to recall the event in six minutes to have created time pressure that may have impaired reporting. It is noteworthy, however, that previous verbal free recall task with this kind of stimuli and piloting suggested this was an adequate amount of time to make available (Anakwah et al., 2020a). Indeed throughout the testing, none of the participants in any of the groups exhausted the six minutes in the free recall report tasks.

### **Conclusion**

The main aim of the current research was to examine whether the eyewitness memory reports of migrants are impacted by their new cultural environment. We sampled mock witnesses who are sub-Saharan African migrants in Western Europe and sub-Saharan Africans living in Africa as a control group. Our results suggest that migrants originally from a collectivistic culture but now living in individualistic cultures provide more elaborate memory reports in free recall than individuals still located in their native culture. This acculturation effect in eyewitness memory report is consistent with our finding that the self-reported collectivism of sub-Saharan African migrants attenuates with time living in Western Europe. Our findings provide some preliminary insights for investigative professionals with respect to how the eyewitness memory reports of migrants may be impacted as they adapt in their host culture.

**Chapter 4: The misinformation effect and  
eyewitness memory reports: A cross-cultural  
investigation**

### Abstract

The culture in which individuals are socialised can play a role in shaping their eyewitness memory reports. Based on cultural self-construal theory, we examined cultural differences in the misinformation effect for central and contextual details. In a mock witness paradigm, participants sampled from collectivistic (Ghana;  $n = 65$ ) and individualistic (UK;  $n = 62$ ) cultures were exposed to misleading post-event information. Participants provided a free recall account and then completed a recognition task that included misinformation items. Across cultural groups, misleading post-event information impaired memory for original details to the same extent, for both central and contextual details. This effect was, however, larger for contextual details than it was for central details, for both cultural groups. Mock witnesses from the collectivistic cultural group endorsed misleading items more, in the recognition task than those from the individualistic cultural group. This cultural difference in misinformation endorsement was not observed in the free recall task. These findings provide preliminary insight into the role of cultural self-construal in susceptibility to misleading post-event information across cultures and highlight the need for investigative interviewers in cross-cultural contexts to avoid leading or suggestive questions.

**Keywords:** eyewitness memory reports, cultural orientation, misinformation effect, investigative interview, self-construal

## Introduction

Eyewitness evidence is crucial in legal proceedings. Criminal prosecutions, as well as investigative decision-making, often rely on eyewitness accounts (Albright, 2017; Fisher, 2010; Wells et al., 2020). Errors in eyewitness accounts can, therefore, have grave implications for the criminal justice system. One of the common sources of such errors is misleading post-event information (Ecker, Lewandowsky, Cheung, & Maybery, 2015; LaPaglia & Chan, 2019; Loftus, 2005). Exposure to misleading post-event information (PEI) can compromise eyewitness evidence, impairing its legal usefulness (Luna & Migueles, 2009). Consequently, investigators have to be aware of the potential impact of misinformation, whatever the source, when conducting investigative interviews (Oeberst & Blank, 2012).

Recent trends in migration (United Nations Population Division, 2019; van Veldhuizen et al., 2018) have made it more likely that investigators will interview eyewitnesses from different cultures. Psychological processes across cultures may differ and the eyewitness memory reports may be shaped by cultural factors (Anakwah et al., 2020a). Given that early work suggests that cultural factors may affect reporting (Jobson, 2009; Wang, 2001; 2011), then the reporting of misleading PEI may also vary across cultures.

### **The misinformation effect**

The change in memory about a witnessed event as a result of exposure to erroneous information about the event has been referred to as the misinformation effect (Frenda, Nichols, & Loftus, 2011; Loftus, 2005). Research has demonstrated how an eyewitness' memory for a witnessed event can be altered after exposure to misleading information about that event (Loftus & Palmer, 1974; Stark, Okado, & Loftus, 2010; Weingardt, Loftus, &

Lindsay, 1995; Zaragoza, Belli, & Payment, 2007). It has been argued that the misinformation effect is a result of an impairment in memory that could result when misleading information alters the original memory trace (Belli, Lindsay, Gales, & McCarthy, 1994; Loftus, 1979, 2005). Proponents of this alteration hypothesis suggest that there is a permanent loss of the original information after an eyewitness accepts misleading information. Thus, according to that perspective, the encoding of a misinformation item leads to memory impairment by altering the memory traces of the original item. Other perspectives have argued that the misinformation effect is not a result of impairment of the original memory trace but that the original information was not encoded in the first place or not remembered, making individuals likely to accept a later introduced misleading information (McCloskey & Zaragoza, 1985). These perspectives provide insights into various ways misinformation can impact the accuracy of eyewitness accounts. In sum, the misinformation effect may be due to the fading of the original memory, failure to properly encode the original memory, and weakening of the original memory trace by misleading PEI (Loftus, 2019; Zaragoza et al., 2007).

The way in which attentional resources are allocated has been argued to have implications for the extent of the misinformation effect (Ayers & Reder, 1998; Loftus, 2005). For example, misleading information is more likely to impair memory for an original event when attentional resources at the time of encoding were weak (Frenda et al., 2011; Loftus, 2005; Wright & Loftus, 1998). However, during encoding individuals attend to central details more than peripheral details (Burke, Heuer, & Reisberg, 1992; Christianson & Loftus, 1991; Yeghyan & Lang, 2010). As a result, it is likely that individuals have stronger memories for central details than background details (Ibabe & Sporer, 2004). Hence, susceptibility to misleading information may be stronger for the latter than the former (Candel, Merckelbach,

Jelicic, Limpens, & Widdershoven, 2004; Paz-Alonso et al., 2013; Roebbers & McConkey, 2003). What individuals attend to in visual scenes, however, has been shown to vary across cultures (Gutchess & Indeck, 2009; Masuda & Nisbett, 2006).

### **Culture and cognition**

Behaviour and psychological processes are situated within a cultural context. The individualism-collectivism cultural dimension has been argued to play an important role in shaping cognition (Gutchess & Boduroglu, 2019; Markus & Kitayama, 2010; Masuda, Gonzalez, Kwan, & Nisbett, 2008). Individualism has been described as a cultural orientation where the individual is viewed as separated from the social context (Ghosh, 2011; Hofstede, 2001). Collectivism, on the other hand, has been described as a cultural orientation where members from such cultures are not separate from the social context but integrated into a cohesive social relationship (Hofstede, 1983, 2001). Collectivistic cultures include cultures in East Asia, Latin America, and sub-Saharan Africa, while individualistic cultures include cultures in North America, Australia, and Northern Europe (Hofstede et al., 2010; Minkov et al., 2017).

Previous research suggests that while individuals socialised in individualistic cultures attend more to central (focal) details, those socialised in collectivistic cultures attend more to background (contextual) details (Ji & Yap, 2016; Kastanakis & Voyer, 2014b; Markus & Kitayama, 1991; Masuda & Nisbett, 2001). In their self-construal theory, Markus and Kitayama (1991; 2010) argue that individuals socialised in individualistic cultures develop independent self-construal, whereas those socialised in collectivistic cultures develop interdependent self-construal. According to this account, individuals with an independent construal of the self view the self as containing more unique dispositions and attributes and, consequently, become more oriented to the properties of an object, developing an analytic

perception, and attending more to focal events. Individuals having an interdependent construal of the self, however, consider the self to be intricately connected to other members of the society, and value communal living. Markus and Kitayama (1991) argue that due to the interdependent view of the self, individuals socialised in collectivistic cultures tend to become perceptually oriented to their surroundings (holistic perception), attending more to the context. Consistent with this perspective, previous research has demonstrated differences in attentional allocation across cultures (Boduroglu et al., 2009; Masuda & Nisbett, 2006; Miyamoto et al., 2006). For example, in one such study using a visual change detection paradigm, East Asians were shown to allocate attention broadly at a visual scene, compared to Americans, who attended more to focal details (Masuda & Nisbett, 2006).

### **The misinformation effect and culture**

Given the cross-cultural differences in attentional allocation, memory impairment for central and background details after exposure to misleading post-event information (PEI) may vary cross-culturally. Post-event information is information received after an event has occurred which may contain erroneous details and may impair the memory for the original event (Blank, 1998; Lee & Chen, 2013). In light of previous findings suggesting that people from collectivist cultures attend more to background than central details (Huang & Park, 2013; Masuda & Nisbett, 2006), it is plausible that misleading PEI may impair memory performance for central details more than for background details in a collectivist sample. That is because when attentional resources are distributed broadly at a visual field, there may be fewer cognitive resources allocated to a focal event (Boduroglu et al., 2009). Similarly, if individuals from individualistic cultures attend more to focal details than contextual events, their available cognitive resources for background details may be limited. Consequently, for



individuals from individualistic cultures, misleading PEI may impair memory performance for background details more than for central details.

Aside from the possibility of cross-cultural differences in memory impairment resulting from misleading PEI, cultures might differ in their tendency to endorse misleading PEI. Due to the independent-interdependent construal of the self, it is possible that individuals from different cultures may respond to social influences differently (Markus & Kitayama, 1991). For instance, it may be that individuals from collectivistic cultures who view the self as integrated with the social context (Markus & Kitayama, 1991), may be more sensitive to social influences than individuals from individualistic cultures. As such, information from other social sources may influence individuals from collectivistic cultures. Similarly, if individuals from individualistic cultures view the self as separate from the social context (Markus & Kitayama, 1991), they may be less likely to incorporate information from other social sources in their accounts.

### **The Current Study**

Research on the misinformation effect spans over four decades. Conclusions from research in this area have largely been based on Western samples and, to date, cross-cultural research using the misinformation effect paradigm is limited. In the present study, we examined the misinformation effect across two cultures. Mock witnesses from sub-Saharan Africa and Western Europe received misleading PEI about an incident, and later provided free recall and completed a recognition test for details of the incident. In line with previous research suggesting that individuals from individualistic cultures are less sensitive to contextual details (Boduroglu et al., 2009; Huang & Park, 2013; Masuda & Nisbett, 2006), we expected misleading PEI to impair memory for original background details, for mock witnesses from individualistic cultures more than for mock witnesses from collectivistic

cultures. Similarly, in line with past research showing individuals from collectivistic cultures attend broadly to contextual details but are less sensitive to central details (Boduroglu et al., 2009), we expected misleading PEI to impair memory for original central details for mock witnesses from collectivistic cultures more than for mock witnesses from individualistic cultures. We also expected the cultural groups to differ in the extent to which they endorse misleading items, consistent with the theory on independent-interdependent self-construal (Markus & Kitayama, 1991, 2010). Specifically, we expected mock witnesses from collectivistic cultures would accept and report suggested details than mock witnesses from individualistic cultures.

## Method

### Design

A 2 (Cultural Group: Ghana, United Kingdom) x 2 (Misinformation: Control items, Experimental items) mixed design was used. The between-subject factor was cultural group and the within-subject factor was misinformation. The dependent variables were the number of correct details reported about central and background events, the number of incorrect details reported about central and background events, and the number of misleading details reported about central and background events.

### Participants

One hundred and twenty-seven undergraduates from Ghana (15 males, 50 females,  $M_{age} = 19.89$ ,  $SD = 1.44$ ) and the UK (30 males, 32 females,  $M_{age} = 20.53$ ,  $SD = 2.70$ ) participated in the study. These participants were born, raised, and lived in the respective countries at the time of testing. The two countries represent the cultural dimension of interest in the current study, as The UK is more individualistic, scoring 89 on the Hofstede Index

while Ghana is more collectivistic, scoring 14 on the same index (Hofstede et al., 2010).<sup>10</sup>

Participants in Ghana and the United Kingdom were university students in the respective countries. Participants in both countries were proficient in the English language.<sup>11</sup>

Participants in Ghana were recruited through advertisements and announcements at lecture halls. Participants in the United Kingdom were recruited through advertisements and departmental participant pools. Participants recruited in Ghana received GH¢ 10 voucher for phone credits or opted to participate without compensation. Participants in the UK received course credits or opted to participate without compensation.

## Materials

*Stimulus event.* The stimulus event was a film about a theft in a travel agency. In the event, a courier wearing a motorcycle helmet is seen entering the office of a travel agency with a parcel. When she enters the office, a receptionist collects the parcel and signs for it. While the receptionist goes to another room to fetch a glass of water, the courier quickly takes a laptop from the office desk and rushes out of the office. When the receptionist returns, she realises the courier is not in the office and also notices the laptop is not on the desk. The receptionist rushes out and starts shouting to raise the alarm. She attempts chasing the courier, but cannot apprehend her. In the last scene of the event, the courier stops running, removes her helmet, throws it into a nearby garden, and then leaves the scene. The event is approximately 1 minute 30 seconds in duration. The stimuli event, used with permission, is available at: <https://www.youtube.com/watch?v=D0GwhUEfMgA>

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<sup>10</sup> On Hofstede's Index, higher score reflects greater individualism. See <https://www.hofstede-insights.com/product/compare-countries/> for comparison of country scores.

<sup>11</sup> The study was conducted in English in both countries. The official language and medium of instruction, from basic to tertiary education level in both countries are English.

*Misinformation items.* The stimulus event was piloted to identify misinformation items. Twelve participants (5 males, 7 females,  $M = 20.33$ ,  $SD = 2.39$ ) from Ghana and UK watched the event and provided a free recall in writing of what they remembered. Participants were also asked to indicate within that written report which details they regard as central and background within the event. From the free recall reports of participants, four items with medium to high memorability were identified as critical (target) items, in line with previous studies (Blank et al., 2013; Van Bergen, Horselenberg, Jelicic, & Beckers, 2010). These four critical items were ‘jacket’, ‘desk’, ‘laptop’, and ‘shopping bags’. These selected items were regarded as central (jacket, laptop) and background (desk, shopping bags) details by participants in the pilot study. The critical items were manipulated to produce contradictory misinformation items (Huff & Umanath, 2018; Van Bergen et al., 2010). For example ‘white desk’ (correct item) was changed to ‘black desk’ (misleading item) to develop a contradictory misinformation item.

The pilot data were also used to generate four other (additive) misinformation items. Participants in the pilot study were presented with a list of 21 events (central and background) that were either present or absent in the video event. Participants were asked to rate the plausibility of these events to have occurred in the video event, on a scale of 1 (not at all plausible) to 8 (extremely plausible), consistent with Scoboria, Mazzoni, Kirsch, and Relyea (2004). Among events that were not present in the video, four of those events that received the highest plausibility rating were selected. The selected events were ‘The office employee shook hands with the courier’, ‘The courier pulled out a mobile phone at the office’, ‘There were two kids walking at the other side of the street’ and ‘There was a dog on the pavement outside the office’. Thus, in total eight (additive and contradictory) critical misinformation items, comprising central (4 items) and background (4 items) details were

selected for the current study. These critical items were used as control and experimental items in a within-subject misinformation design (see Blank et al., 2013, for similar within-subject misinformation manipulation). The misinformation item matrix is presented in Table 4.1.

***Post-event narrative.*** In order to enhance the credibility of the post-event narrative, we prepared a mock news report that gave an account of the incident of theft at the travel agency. The report ended by appealing to the general public to provide information about the perpetrator. This mock news report was formatted to resemble a BBC webpage report (for similar misinformation format, see Gabbert, Hope, Fisher, & Jamieson, 2012). Two versions of the report were prepared, with the control and experimental (misled) items counterbalanced across the reports, consistent with previous studies (Blank et al., 2013; Garry, French, Kinzett, & Mori, 2008). Thus, although participants read about the same event, half of them were misled about four of the critical items (jacket, desk, kids, phone) but not the other four critical items (laptop, shopping bag, dog, handshake), and vice versa for the other half of the participants. The post-event narratives are available on OSF at [https://osf.io/jn36k/?view\\_only=e24b6afd843b46ed9f5f73f15f6ae97a](https://osf.io/jn36k/?view_only=e24b6afd843b46ed9f5f73f15f6ae97a).

***Recognition Test.*** The recognition test consisted of twelve forced-choice questions; eight questions about the critical (target) items and four filler questions. Consistent with Zhu et al. (2013), each question offered four possible response options: the original item, misinformation item; new foil item and, to minimise guessing (Paz-Alonso et al., 2013), a ‘don’t know’ response option. A sample question is ‘The courier was wearing a \_\_\_\_\_’, with response options as ‘black jacket’ (original item), ‘brown jacket’ (misinformation item, where this erroneous colour detail is provided in the misinformation narrative), ‘blue jacket’ (foil item) and ‘don’t know’. The twelve forced-choice questions comprised of six questions

each about central and background event. The recognition test is available at

[https://osf.io/fwm3n/?view\\_only=5bc602edf1e94b35a06b2c06a441404d](https://osf.io/fwm3n/?view_only=5bc602edf1e94b35a06b2c06a441404d) .

Table 4. 1

*Misinformation item matrix*

	<b>Control detail</b>	<b>Misled detail</b>	<b>Detail Type</b>	<b>Misinformation Type</b>
<b>PEI Set A</b>	The courier looked on as the secretary signed for the parcel.	As the secretary signed for the parcel, the courier pulled out her mobile phone.	Central	Additive
	She ran past a woman wearing black clothes.	She ran past two school children.	Background	Additive
	Black jacket	Brown jacket	Central	Contradictory
	White desk	Black desk	Background	Contradictory
<b>PEI Set B</b>	The courier and the office employee did not shake hands before delivering the parcel.	The courier shook hands with the office employee before delivering the parcel.	Central	Additive
	Just beside the entrance was a bicycle	Just beside the entrance was a dog	Background	Additive
	Grey-coloured laptop	Blue-coloured laptop	Central	Contradictory
	Yellow shopping bags	Green shopping bags	Background	Contradictory

PEI = Post-event information

***Cultural orientation scale.*** This scale measures self-reported cultural orientation. It is a 16-item scale that measures individualism and collectivism on a 9-point Likert scale (1 = never or definitely no and 9 = always or definitely yes). Sample items on the scale include *'It is important to me that I respect the decisions made by my groups'* and *'My personal identity, independent of others, is very important to me'*. The reliability of the scale is .75 (Gelfand & Realo, 1999).

### **Procedure**

Participants took part in the study individually. After consenting to participate, they watched the video event, which was followed by a distraction task (visual illusion task and mathematical problems) for 15 minutes. Participants were then asked to read the mock news report (post-event narrative) and were told that it was a media report about the incident published after it occurred. The presentation of the post-event narratives was counterbalanced across participants such that half of the participants received PEI Set A while the other half received PEI Set B, whereby each misinformation item was paired with a control item (See Blank et al., 2013; Pansky, Tenenboim, & Bar, 2011, for similar within-subjects misinformation methodology). After reading the post-event narrative, participants were given another distraction task, which lasted 10 minutes (word search and mathematical problems). Following this, participants were asked to provide a verbal free recall of the original event they had viewed in as much detail as possible. This report was audio recorded. After the free recall, participants completed the recognition test. Again, participants were instructed that their responses should be based on what they saw in the film event. After the recognition test, participants completed their demographic information and the cultural orientation scale. Afterward, they were debriefed and thanked for their participation. All instructions and questions were in English for participants, who were all proficient in the English language.

Each test session lasted approximately 45 minutes. The study received ethics approval from institutional review boards in the respective countries.

### **Coding**

Free recall responses were transcribed and coded. A coding template for central and background details based on the pilot data was developed. Using this template, the free recall reports were coded for central and background details, with each detail type additionally coded as correct, incorrect, or as endorsing misinformation. Items that were in the event and rightly described as such were coded as correct (e.g., describing that the courier wore a black helmet). Items coded as incorrect were descriptions that were discrepant with the event (e.g., describing the colour of the courier's helmet as red when in fact it was black). Items that were suggested in the post-event narrative but which did not occur in the target event were coded as misinformation endorsement (e.g., when it was suggested in the narrative that the courier shook hands with the receptionist, and participants mention this suggested item in their free recall). Vague or ambiguous responses were not coded. Twenty percent (20%) of the transcripts were randomly selected and coded by a second coder. There was a high inter-coder agreement (intra-class correlation coefficient) for correct central details (.88), and correct background details (.77).

## **Results**

### **Free recall**

Analysis of free recall was conducted using an independent t-test, with correct details, incorrect details, and misleading details reported, as the dependent variables.

**Correct.** There was a significant difference in the number of correct central details reported in the free recall task between the cultural groups,  $t(125) = 3.61, p < .001, d = .64$ .



Participants from UK ( $M = 28.31$ ,  $SD = 7.79$ ) reported more correct central details than did participants from Ghana ( $M = 23.18$ ,  $SD = 8.18$ ). There was also a significant difference between the cultural groups in the number of correct background details reported in free recall,  $t(125) = 4.51$ ,  $p < .001$ ,  $d = .80$ . Participants from UK ( $M = 9.40$ ,  $SD = 3.56$ ) reported more correct background details than did participants from Ghana ( $M = 5.97$ ,  $SD = 4.89$ ).

***Incorrect.*** There was a significant difference between the cultural groups in the number of incorrect central details reported  $t(125) = 3.17$ ,  $p = .002$ ,  $d = .56$ . Participants from UK ( $M = 1.11$ ,  $SD = 1.12$ ) reported more incorrect central details than participants from Ghana ( $M = .58$ ,  $SD = .73$ ). However, there was no significant difference between the cultural groups in the number of incorrect background details reported (Ghana –  $M = .46$ ,  $SD = .90$ ; UK –  $M = .53$ ,  $SD = .72$ ),  $t(125) = .49$ ,  $p = .63$ ,  $d = .09$ .

***Misinformation.*** Participants from the UK ( $M = .16$ ,  $SD = .41$ ) and Ghana ( $M = .12$ ,  $SD = .33$ ) did not significantly differ in the number of misinformation details reported in the free recall task for central details,  $t(125) = .58$ ,  $p = .57$ ,  $d = .10$ . Similarly, there was no statistically significant difference between participants from UK ( $M = .06$ ,  $SD = .25$ ) and Ghana ( $M = .14$ ,  $SD = .39$ ) with respect to the number of misinformation details reported for background details,  $t(125) = 1.27$ ,  $p = .21$ ,  $d = .23$ .

### **Misinformation effect in recognition task**

***Memory for original details.*** To examine the impact of misinformation on memory for original details for the recognition task, we compared the number of correct responses for control and experimental (misled) items. A mixed factorial ANOVA was conducted with cultural group (Ghana, UK) as between-subject factor and misinformation (control items, experimental items) as a within-subject factor. The dependent variables were the total number

of correct central details (memory for original central details) and the total number of correct background details (memory for original background details) selected in the recognition task. Memory for original central details after exposure to misinformation was similar across cultural groups, as there was no significant difference between participants from Ghana and the UK  $F(1, 125) = 1.02, p = .315, \eta_p^2 = .01$  (See Table 4.3). There was, however, a significant main effect of misinformation on the number of correct central details selected,  $F(1, 125) = 51.95, p < .001, \eta_p^2 = .29$ . Misleading (experimental) items ( $M = 1.18, SD = .75$ ) impaired participants' memory for original central details more than did control items ( $M = 1.72, SD = .49$ ), in the recognition task. The interaction between cultural group and misinformation was significant  $F(1, 125) = 4.75, p = .031, \eta_p^2 = .04$ . A planned comparison revealed memories for original central details were impaired by misleading items more than control (non-misleading) items, for both participants from the UK ( $p = .001$ ) and Ghana ( $p < .001$ ). The magnitude of the simple main effect could account for this interaction, as the slopes of the simple main effect for both cultural groups had the same direction. See Table 4.2 for means of control and experimental items for the respective groups.

The cultural groups did not significantly differ in memory for original background details after exposure to misinformation,  $F(1, 125) = 3.04, p = .084, \eta_p^2 = .02$  (See Table 4.3). There was, however, a significant main effect of misinformation on the number of correct background details selected  $F(1, 125) = 38.36, p < .001, \eta_p^2 = .24$ . Participants memory for original background details was impaired more when they were misled (Experimental;  $M = .72, SD = .69$ ) than when they were not misled (Control;  $M = 1.31, SD = .66$ ). The interaction between cultural group and misinformation was significant  $F(1, 125) = 4.19, p = .043, \eta_p^2 = .023$ . Both participants from Ghana ( $p < .001$ ) and the UK ( $p = .006$ ) reported more correct control items than misled items.

To assess whether the cultural groups' are more susceptible to misinformation about a particular type of detail, we compared correct central and correct background details selected on the recognition test by participants from the respective cultural groups. On control items, both participants from Ghana [ $F(1, 64) = 16.39, p < .001, \eta_p^2 = .20$ ] and UK [ $F(1, 61) = 16.66, p < .001, \eta_p^2 = .21$ ] selected more correct central details than correct background details. For experimental items, participants from Ghana selected more correct central details than correct background details,  $F(1, 64) = 19.30, p < .001, \eta_p^2 = .23$ . Participants from the UK also selected more correct central details than correct background details for experimental items,  $F(1, 61) = 17.93, p < .001, \eta_p^2 = .23$  (See Table 4.2).

***Misinformation endorsement.*** Apart from the effect of misinformation on memory for original items, we also examined the effect of misinformation on the acceptance of misleading items (misinformation endorsement) in the recognition task. To that end, we conducted a mixed factorial ANOVA with cultural group (Ghana, UK) as a between-subject factor and misinformation condition (control items, misled items) as a within-subject factor. The dependent variables were the total number of misleading items selected (endorsed) for central details and the total number of misleading items selected for background details. There was a significant main effect of cultural group on the endorsement of misleading items about central details  $F(1, 125) = 4.77, p = .031, \eta_p^2 = .04$ . Participants from Ghana endorsed more misleading items about the central event than did participants from the UK (See Table 4.3). There was also a significant main effect of misinformation on the endorsement of misleading items about central details  $F(1, 125) = 41.87, p < .001, \eta_p^2 = .25$ . Participants selected experimental (misleading) items ( $M = .58, SD = .75$ ) more than control (non-misleading) items ( $M = .11, SD = .34$ ), for central details. The interaction between cultural group and misinformation was not significant,  $F(1, 125) = 3.24, p = .074, \eta_p^2 = .03$ .

There was a significant difference between the cultural groups in the extent to which they endorsed misleading items about background details,  $F(1, 125) = 5.50, p = .021, \eta_p^2 = .04$ . Participants from Ghana selected misleading items about background details more than did participants from the UK (See Table 4.3). There was also a significant main effect of misinformation on the endorsement of misleading items about background details,  $F(1, 125) = 57.78, p < .00, \eta_p^2 = .32$ . Participants selected more experimental (misleading) items ( $M = .59, SD = .77$ ) than they did for control items ( $M = .04, SD = .23$ ), for background details. The interaction between cultural group and misinformation on the endorsement of misleading items about background details was also significant  $F(1, 125) = 8.34, p = .005, \eta_p^2 = .06$ . A planned comparison revealed participants from Ghana selected more misleading items than control items for background details ( $p < .001$ ). Participants from the UK also selected more misleading items than control items for background details ( $p = .001$ ; See Table 4.2).

Table 4. 2

*Mean (standard deviation) of memory for original details and misinformation endorsement for misleading and control items by cultural groups on the recognition task*

		<u>Memory for original details</u>		<u>Misinformation endorsement</u>	
		Control	Misleading	Control	Misleading
Central	Ghana	1.75(4.34)	1.06(.77)	.12(.33)	.72(.78)
	UK	1.68(.54)	1.31(.71)	.11(.35)	.44(.69)
Background	Ghana	1.34(.67)	.57(.66)	.02(.12)	.77(.82)
	UK	1.27(.66)	.89(.68)	.06(.31)	.40(.66)

Table 4. 3

*Mean (Standard deviation) of memory for original details and misinformation endorsement by cultural group on recognition task*

		Memory for original details	Misinformation endorsement
Central	Ghana	1.41 (.47)	.42 (.40)
	UK	1.49 (.47)	.27 (.40)
Background	Ghana	.95 (.41)	.39 (.38)
	UK	1.08 (.41)	.23 (.38)

### **Self-reported cultural orientation**

Analysis of self-reported cultural orientation revealed that the cultural groups did not significantly differ on horizontal,  $t(125) = .15, p = .877, d = .08$ , nor vertical,  $t(125) = 1.70, p = .093, d = .30$ , dimensions of individualism. However, they differed on both horizontal,  $t(125) = 2.24, p = .027, d = .39$ , and vertical,  $t(125) = 2.16, p = .033, d = .38$ , dimensions of collectivism. Specifically, participants from the UK ( $M = 28.18, SD = 4.26$ ) gave higher ratings on horizontal collectivism than participants from Ghana ( $M = 25.95, SD = 6.73$ ). Participants from Ghana ( $M = 29.37, SD = 7.36$ ), however, gave higher ratings on vertical collectivism than participants from the UK ( $M = 27.03, SD = 4.60$ ).

### **Discussion**

We examined the misinformation effect in eyewitness memory reports across two cultural groups. We found that misleading post-event information (PEI) impaired memory for original details to the same extent across cultural groups. Contrary to our hypotheses, the

misinformation effect was more pronounced for background details than central details, irrespective of the cultural background of mock witnesses. We also found that mock witnesses from the collectivistic cultural group endorsed misleading details more than mock witnesses from the individualistic cultural group. However, this difference in the endorsement of misinformation was absent when free recall questions were asked.

Across cultural groups, memory for original details was impaired to the same extent after exposure to misleading information. Given previous accounts of the misinformation effect (e.g., Frenda et al., 2011; Loftus, 2005), it is possible that the misleading PEI interfered with the memory for original details, causing a similar degree of impairment in memory across cultural groups. This speculation is consistent with retroactive interference, a phenomenon where new information interferes with the retrieval of previously learned information resulting in decreased memory performance (Sosic-Vasic, Hille, Kröner, Spitzer, & Kornmeier, 2018). Thus, it is also possible that during retrieval, there was a competition between original and misleading details about a common critical item leading to impaired memory performance. This perspective is consistent with the argument that the misinformation effect is due to the weakening of the original memory trace by the misleading information (Loftus, 2005; 2019).

Mock witnesses, across cultures, resisted misinformation about central details more than they did for background details, suggesting that across cultures, mock witnesses attended more to central details than background details. This finding runs counter to our hypotheses which were based on previous work describing cultural differences in attention to central and contextual details, with people from collectivistic cultures attending more to contextual details, and vice versa (Masuda & Nisbett, 2006). However, it is worth bearing in mind that previous work on cross-cultural cognition has typically used neutral scenes (Masuda &

Nisbett, 2006; Miyamoto et al., 2006). It might be argued that it makes sense that witnesses, regardless of their cultural background, may be inclined to attend more to central details at a crime scene, due to the arousing, threatening or otherwise attention-capturing nature of the crime event (Anakwah et al., 2020a). Thus, the use of forensically relevant stimulus in the current study may have prompted mock witnesses to attend more to the central event.

Consequently, stronger memory for central details might have facilitated the detection of details that were inconsistent with what was originally witnessed, leading to resistance to misleading information about central details. Similarly, mock witnesses' susceptibility to misleading background details could be due to weaker memory for the background event, making mock witnesses more susceptible to misleading influences about the background event (Heath & Erickson, 1998; Wright & Stroud, 1998).

We expected mock witnesses from collectivistic cultures would endorse misleading PEI than mock witnesses with and individualistic cultures. We found support for this as the results showed mock witnesses from the collectivistic cultural group endorsed misleading details more than those from the individualistic cultural group. That finding is consistent with the argument that individuals with collectivistic cultural orientation are more sensitive to their social context (Markus & Kitayama, 1991, 2010), making them more susceptible to social influences. Due to that interdependent construal of the self, they may not depend on their own memory alone in their memory reports. That speculation is in line with the argument that in sub-Saharan African societies, the tendency to rely on social sources could be engrained in the socialisation process, culture, and belief system (Wiafe-Akenten, 2020). According to Wiafe-Akenten (2020), heavy reliance on social sources of information in such societies could contribute to misinformation acceptance. In the current study, 61.5% of mock witnesses with collectivistic orientation accepted misinformation, whereas 41.9% of mock

witnesses from individualistic cultures accepted misinformation.<sup>12</sup> Therefore, whereas misinformation acceptance permeates across cultures, the rate of acceptance seems to be higher among collectivistic cultures. During investigative interviews, it may be helpful to ask such witnesses to indicate which of the reported information was a recollection of what they witnessed themselves and which is from other sources.

The weakened endorsement of misinformation among individualistic culture mock witnesses could be due to the view of the self as separate from the social context (independent-self; Markus & Kitayama, 1991, 2010). Consequently, individuals socialised in such cultures would be less inclined to accept misinformation from social sources. Consistent with this speculation, previous work has shown the role of the independent self-construal in resisting misleading PEI in a co-witness paradigm (Peterson & Paterson, 2012). In that study, however, the interdependent self was not found to be related to susceptibility to misleading influences. The finding of no relationship between the interdependent-self and misinformation susceptibility in that study may be due to the fact that participants in that study were sampled from an individualistic culture and measured on their level of self-construal. It can, therefore, be rightly argued that participants were not representative of individuals from collectivistic cultures, who subscribe to the interdependent construal of the self. In the current study, participants representing the interdependent self-construal were individuals living in their native collectivistic cultural environment since birth. It makes sense that they would have been socialised in the collectivistic culture to develop an interdependent self-construal, viewing the self as embedded in the social context. As a result, they may have become more prone to influences from other social sources such as the media.

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<sup>12</sup> Overall misinformation acceptance across cultural groups was 52%.



It has also been argued in the literature on cultural self-construal that individuals from individualistic cultures view the self more as possessing unique dispositions than individuals from collectivistic cultures (Coşkan, Phalet, Güngör, & Mesquita, 2016; Markus & Kitayama, 1991, 2010). That proposed cultural difference in the extent at which the self is viewed as possessing unique dispositions might have accounted for the differences in misinformation endorsement observed in the current study. Broadly, individuals who view themselves as not possessing sufficient internal attributes are less likely to rely on their own memories in the recount of events (Frenda et al., 2011). It is likely that because individuals from cultures with an independent self-construal view the self as more unique, they are more likely to rely more on their own memory and discount information from other sources in their memory accounts. Conversely, because individuals from collectivistic cultures may not view the self more as unique compared with individuals from individualistic cultures (Markus & Kitayama, 2010), they may be less likely to rely solely on their memory in their account of events they have witnessed. They may not discount information from other sources in their memory accounts. Consequently, they may be more likely to yield to post-event information from other secondary sources, compared to individuals from collectivistic cultures.

Related to the above, cultural differences in self-presentation could play a role in the extent of misinformation endorsement. Because individuals from individualistic cultures may be inclined to view the self as more unique (Coşkan et al., 2016), it could result in self-enhancement, the tendency to become less-restrained and see oneself in a more positive light (Yamagishi et al., 2012a). Individuals from collectivistic cultures, on the other hand, have been argued to engage more in self-effacement, the tendency to be modest and more restrained (Takata, 2003; Yamagishi et al., 2012a). This difference in self-presentation across cultures has been argued to play a role in low-confidence memory reports among mock

witnesses from collectivistic cultures (Anakwah et al., 2020a). Thus, it could be that individuals from collectivistic cultures were more likely to incorporate suggested details in their eyewitness memory reports because they were not certain about their memory of the witnessed event. This speculation is consistent with previous findings showing that witnesses with low confidence about their memories are more susceptible to misinformation (Van Bergen et al., 2010). Future research should explore the role of low-confidence memory reports in susceptibility to post-event information across cultures.

Although cross-cultural differences in misinformation endorsement were observed under the recognition test, such differences were not present in the free recall report. Overall, 18% of the sample reported at least one item of misinformation in the free recall (Ghana = 20%; UK = 16%). It is possible that during the free recall, mock witnesses from collectivistic culture engaged in more stringent memory regulation. Mock witnesses from collectivistic cultures might have withheld details that could contaminate their accounts to enhance the accuracy of reported details. That may also explain why mock witnesses from collectivistic culture reported fewer incorrect details in free recall than mock witnesses from individualistic cultures. That finding is in line with previous research showing mock witnesses from collectivistic cultures reported less incorrect details than those from individualistic cultures (Anakwah et al., 2020a). Mock witnesses from collectivistic cultures should be encouraged to use memory regulation strategies to enhance their memory reports.

Finally, cultural differences were observed in the memory reports generated in the current study. Mock witnesses from individualistic cultures reported more details than those with a collectivistic cultural background. That finding is in line with previous research (Anakwah et al., 2020; Leal et al., 2018; Wang, 2004). Cultural differences in elaborate memory reports could be accounted for by socialisation practices and reporting norms in the

respective cultures. Individualistic cultures engage in more explicit reporting, compared to individuals from collectivistic cultures where communication can be more implicit (Hall, 1976; Leal et al., 2018; Wang, 2004). This cultural difference has been argued to reflect in eyewitness memory reporting, where individuals from individualistic cultures in the attempt to be more explicit, provide more details in their memory reports (Anakwah et al., 2020a). Related to this is the self-enhancing tendency of individuals with individualistic cultural background, which may lead to more elaborate or enhanced memory report, compared to individuals from collectivistic cultures. Thus, it is more likely that individuals from collectivistic cultures may be more inclined to engage in modest responses, due to the self-presentation norm predominant in such cultures (self-effacement).

A potential limitation of the current study is that the time interval before asking participants to provide memory reports was quite short. In real-life situations, it sometimes takes days before witnesses are called on to give an account. Thus, in instances where eyewitnesses give accounts days after exposure to the post-event information, it is not clear whether the cultural difference in misinformation endorsement would persist or fade with time. Future cross-cultural research on the misinformation effect should ask participants to give memory reports days after receiving the post-event misinformation. There was also no manipulation check to assess whether participants did indeed read the PEI. However, because participants took part in the study individually and in-person (i.e., in the presence of the researcher), they were required to notify the researcher when they finish reading the PEI. Thus, even though there was no manipulation check, it is less likely this might have affected the outcome of the research. It is also possible that the presence of the experimenter might have played a role in misinformation acceptance, especially for mock witnesses from the collectivistic cultural group. That is because individuals from collectivistic cultures are more

sensitive to power differentials (Anakwah et al., 2020a; Piyush Sharma, 2010). Hence, the acceptance of the misinformation could be due to the mere presence of the experimenter. Future research should explore whether, in a situation where the experimenter is not present during testing, misinformation acceptance would still be found. It would also be interesting for future research to examine the role of authority in the acceptance of misinformation across cultures. Specifically, future research should examine whether mock witnesses across cultures would accept misinformation when it is directly coming from an authority figure (e.g., investigator).

### **Conclusion**

We examined the misinformation effect across cultures. Our results show that misleading PEI impairs memory performance across cultures. Mock witnesses regardless of their cultural background are more susceptible to misleading information about peripheral details than central details. We also found that mock witnesses with collectivistic cultural background endorse misleading information more than those with individualistic background. However, this difference in misinformation endorsement disappears during free recall tasks. These findings provide valuable insights for investigative interviews in cross-cultural contexts.

**Chapter 5: The effect of authority on eyewitness  
memory reports across cultures**

### **Abstract**

The culture in which individuals have been socialised can impact on both behaviour and psychological processes. Using the power distance cultural framework, we examined whether eyewitness memory reports provided by individuals from different cultural backgrounds are affected by whom those reports are provided to, in this case an authority figure or a peer. We sampled participants ( $N = 115$ ) from high and low Power Distance (PD) cultures. In a 2 (Cultural orientation: high PD vs. low PD) X 2 (Reporting context: Police vs. Peer) design, participants viewed a mock crime event and later provided free and cued recalls. High PD culture mock witnesses reported similar amount of details when reporting to police and a peer. Low PD culture mock witnesses reported more details when reporting to police than when reporting to a peer. Mock witnesses from low PD cultures provided more details than high PD culture mock witnesses, irrespective of reporting context. Our findings provide insight into the extent to which reporting to an authority figure in an investigative context may affect the content of eyewitness memory reports.

**Keywords:** Eyewitness memory reports, Power distance, culture, investigative interview

## **Introduction**

Detailed eyewitness reports are crucial in police investigations as well as legal proceedings. In particular, detailed reports can provide valuable leads during investigations. As such, accounts that are sparse or lacking in detail can frustrate investigative efforts and have implications for judicial decisions in criminal prosecutions. Given the crucial role of eyewitness evidence in dispensing justice (Wells et al., 2020), researchers have investigated how best to elicit detailed accounts from eyewitnesses (e.g., Dando et al., 2018; Fisher, Geiselman, & Amador, 1989; Gabbert, Hope, & Fisher, 2009). Because interviewers are increasingly likely to encounter people from different cultures in the conduct of investigations, the need to improve understanding in eliciting details from eyewitnesses in cross-cultural contexts is clear (Anakwah et al., 2020a; de Bruine et al., 2018; Hope & Gabbert, 2019). As individuals, eyewitnesses have been socialised into their respective cultures, hence, attendant cultural dynamics may play out in social situations, such as the investigative context. In eyewitness interviews, the audience for the account provided by the witness is typically an authority figure, such as a police investigator (McCallum, Brewer, & Weber, 2016). Different cultures have different norms regarding relating or interacting with authority figures (Hofstede, 2011). It is not clear whether or how such dynamics will impact on the nature or content of reports from memory in an investigative context. In the current research, we examined whether there is any preliminary evidence for an authority effect in the eyewitness memory reports provided by eyewitnesses from different cultures.

### **Authority and eyewitnesses**

Authority is characterised by an influence that one social actor exerts over another (Morselli & Passini, 2011). It has been argued to determine the outcome of social interactions (Cialdini, 2013; Milgram, 1963; Plazinić, Banjac, & Joksimović, 2019). According to

Cialdini (2013), because individuals are socialised right from birth to obey authority figures, authority can exert a powerful influence on them. The influence by authority may be subtle or direct and permeates other aspects of society, including the legal system. Indeed, in law enforcement and other investigative contexts, interviews are conducted by investigators who are accorded an authority status. The perceived authority in investigative contexts may impact on the amount of information an interviewee is willing to provide. Specifically, research suggests that authority influences informational outcomes within an investigative interview context (Goodman-Delahunty & Howes, 2016). In one study, participants took part in a mock crime and later provided written statements and were interviewed in a high or low authority context (Matsumoto & Hwang, 2019). Authority in that study was manipulated by using indirect trappings of authority. Specifically, in the high authority condition, the interviewer was formally dressed in a suit, tie, and had a photo ID. There were also two certificates from the law enforcement agency that hung on the wall of the interview room. Both certificates bore a fictitious name of the interviewer and attested to the interviewer's competence. Also on the wall of that interview room was a photoshopped image of the interviewer with a well-known law enforcement official. In the low authority condition, the interviewer wore a plain white shirt and had no photo ID. The low authority condition also had a certificate on the wall but the inscriptions on it were unintelligible. Results revealed that the participants in the high authority condition provided more explicit details in both verbal and written statements, with large effect size.

The results of research examining the effects of authority on memory reports have been inconsistent. When asked to provide memory reports of a short story either to an experimenter or a co-participant, participants in both conditions did not differ in detail provision (Hyman, 1994). Similarly, McCallum et al. (2016) found mock witnesses did not



differ in informativeness when providing their reports in either a high authority (police) or a low authority (an experimenter) condition. McCallum et al. (2016) noted, however, that the mock witnesses in their study might have perceived both the police and experimenter as experts. Indeed, in this example, both scenarios may be considered as involving an authority, hence the ensuing social dynamics when interviewing mock witnesses may have impacted information elicitation to a similar degree.

The social dynamics when individuals from different cultures are being interviewed by an authority figure may vary (Ghosh, 2011; Goodman-Delahunty & Howes, 2016). That could have implications for informational outcomes during investigative interview in cross-cultural settings. That is because, information elicited during investigative interviews of witnesses is not only determined by cognitive processes, such as memory, but also by the social dynamics between the interviewer and interviewee (Abbe & Brandon, 2013; Fisher, Milne, & Bull, 2011). Given that cultural norms in interacting with authority figures differ, the social dynamics present when a police investigator is interviewing eyewitnesses from different cultures may not be the same across witnesses. It is, therefore, reasonable to argue that authority might impact information elicitation differently across witnesses with different cultural backgrounds.

### **Authority and memory reports across cultures**

An individual's cultural background may impact social interactions with authority figures (Hofstede, 2011; Khatri, 2009). The cultural dimension of power distance sheds light on how the perceived inequality in society might affect social interactions (Hofstede, 1983). Power distance refers to the extent to which members of a society accept and perceive inequality in power, prestige, and wealth (Oyserman, 2006). Cultures with high power distance endorse hierarchy in social relationships, whereas that is not the case for cultures

with low power distance. In high power distance cultures, there usually exists a communication gap between subordinates and authority figures (Ghosh, 2011; Khatri, 2009). This hierarchy in communication norms can make it difficult for subordinates to express their views to superiors (Gosh, 2011). Specifically, Ghosh (2011) suggests that in cultures with high power distance, free and spontaneous communication may well be inhibited.

The cultural dimension of power distance is associated with the cultural dimension of individualism-collectivism (Minkov et al., 2017). The individualism-collectivism cultural dimension concerns the extent to which individual members of a cultural group are considered integrated in (or separate from) their social context (Hofstede, 2011). In individualistic cultures, the relationship between individual members is conceptualised as loose, whereas in collectivistic cultures a tighter relationship among individual members of the cultural group is predicted (Hofstede et al., 2010). It has been argued that individuals from individualistic cultures prioritise their own thoughts, opinions, and view the self as more unique (Markus & Kitayama, 2010; Wasti, Tan, Brower, & Önder, 2007). In contrast, it has been argued that individuals from collectivistic cultures subordinate their opinions and preferences to that of the social group, in an effort to maintain group harmony (Wasti et al., 2007). It has been proposed that this may result in cultural differences in self-presentation, where individuals socialised in collectivistic cultures show self-effacement (modesty), whereas those socialised in individualistic cultures show self-enhancement (self-expression; Takata, 2003). These self-presentational differences may have implications for cultural differences in confidence in performance (Heine et al., 2000). For example, when asked about how well they performed on a test, Japanese (collectivist) participants were reluctant to accept they performed better than their average classmate, whereas Canadian (individualist)

participants refused to conclude that they performed worse than their average classmate (Heine et al., 2000).

The individualism-collectivism cultural dimension has also been argued to shape the content of memory reports (Anakwah et al., 2020a; Anakwah, Horselenberg, Hope, Amankwah-Poku, & van Koppen, 2020b; Wang, 2006). Such research has shown a consistent pattern of underreporting among individuals socialised in collectivistic cultures relative to counterparts from individualistic cultures. For example, in one study using a mock witness paradigm, participants sampled from Ghana (collectivistic culture) and the Netherlands (individualistic culture) provided a free recall account and answered questions about a crime event. Mock witnesses socialised in the collectivistic culture reported fewer details than those socialised in the individualistic culture, who provided more elaborate memory reports (Anakwah et al., 2020a). In another study examining the effects of acculturation using a similar paradigm, it was found that migrant mock witnesses with a collectivistic cultural background who now live in an individualistic culture provided more elaborate memory reports than mock witnesses still living in the native collectivistic culture (Anakwah et al., 2020b). In both of these studies, it may be that cross-cultural differences in relating with authority figures could account for the underreporting among witnesses living in their native collectivistic culture. Specifically, and as argued by Anakwah et al. (2020a), it may be that mock witnesses perceived the experimenter as an expert, hence, impeding spontaneous reporting for mock witnesses socialised in collectivistic cultures. In line with that argument, it was also found in that study that mock witnesses from the collectivistic cultural group scored higher on vertical collectivism (endorsement of hierarchy in social relationships) than mock witnesses from the individualistic cultural group. Thus, due to the perceived power status of

the interviewer, interviewees with cultural backgrounds where hierarchy in social relationships is emphasised may not spontaneously provide detailed reports.

Differences in the effects of authority on reporting across cultures may emerge due to socialisation practices. Wang (2006) argued that in childrearing practices in most collectivistic cultures, it is normative to emphasise obedience, respect, and fear of authority figures in social relationships (Wang, 2006). In a study involving Chinese and American mothers interacting with their respective children, Wang (2006) noted that the conversation between a Chinese mother and her child, focused on reinforcing the mother's position as an authority figure, with the mother directing the course of the conversation whereas this did not tend to be the pattern for North American mothers. Subsequently, American children provided more elaborate reports than Chinese children when sharing memory reports with their mothers. Burns and Radford (2008) made a similar observation with a sub-Saharan African sample. In that research exploring parent-child interaction among Nigerian families, parent-child dyads playing and talking in their home contexts were observed. The study showed conversations between the mothers and their respective children were instructional and often involve directive talk. The authors argued that the use of instructional talk by Nigerian mothers when conversing with their children was ingrained in cultural norms. Specifically, they indicate that such cultures specify the role of adults (authority figures) and children when engaging in conversations. For that reason, the authors note the need to take cultural contexts into account when evaluating such interactions. Thus, sensitivity to authority status during social interactions with authority figures may differ across cultures in view of differences in socialisation practices.

### **The current study**

Efforts at eliciting detailed eyewitness memory reports may be inhibited if there is a limited understanding of whether cultural differences in relating to authority figures (power distance) impacts reporting. To date, no research has been conducted on how the cultural dimension of power distance could impact the information reported by eyewitnesses from different cultures. In view of the increasing cross-cultural contacts within the criminal justice system, it is necessary to examine whether the cultural dimension of power distance could impact the details reported by witnesses.

Mock witnesses were sampled from Ghana and the Netherlands. On Hofstede's Power Distance Index, Ghana and the Netherlands score 80 and 38, respectively (where high scores indicate high power distance). Thus, these two countries represent high and low power distance cultures respectively. Participants in the role of mock witnesses viewed a crime event and later provided free and cued recall reports. With respect to reporting context, we expected that mock witnesses from the high PD culture would report more correct details to a peer than to the police on the grounds of the power distance cultural framework (Ghosh, 2011; Hofstede, 2011). Specifically, because individuals socialised in high PD cultures are more sensitive to hierarchy in social relationships, their memory reports to authority figures were expected to be impeded when reporting to a police detective (Ghosh, 2011). This was not expected for mock witnesses from low PD culture who, on the grounds of the power distance cultural framework, we predicted would report a similar amount of details to police and peer (Hofstede, 2011). Thus, because hierarchy in social relationships is less emphasised in low PD cultures, we expected that regardless of the reporting context, witnesses with low PD cultural background would report the same amount of details. Finally, based on research by Anakwah et al. (2020), we predicted that mock witnesses from low PD cultures would

report more correct details than mock witnesses from high PD cultures, irrespective of reporting context.

## Methods

### Participants and design

A total of 115 participants were sampled for the study. The participants were recruited from Ghana ( $n = 66$ ,  $M_{age} = 20.03$  years,  $SD = 1.88$ ) and the Netherlands ( $n = 49$ ,  $M_{age} = 22.84$  years,  $SD = 2.44$ ). All participants in both countries had a university-level education and were also proficient in the English language.<sup>13</sup> Participants in Ghana were recruited through announcements in lecture halls. Participants in the Netherlands were recruited by advertisements on university campus. Participants who volunteered for compensation received a €5 shopping voucher for participants in the Netherlands and GHC10 voucher for phone credit, for participants in Ghana. Some participants opted to participate without compensation.

The design was a 2 (Cultural orientation: High Power Distance, Low Power Distance) X 2 (Reporting context: Police, Peer) between-subjects design. The independent variables were cultural orientation and reporting context. The dependent variables were the number of correct details reported, the accuracy of details reported (proportion of correct details relative to the total number of details), unanswered questions, and confidence about the overall report in free and cued recall.

### Materials

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<sup>13</sup> Participants across cultures were proficient in English. The official language in Ghana is English, which is the medium of instruction from basic to tertiary level of education.

***Stimulus event.*** Stimuli for the study was a recording of a mock crime about a theft in a travel agency. In the event, a courier wearing a motorcycle helmet and holding a parcel walks towards a travel agency. When the courier enters the office, she delivers the parcel to the receptionist, who signs for it. After signing for the parcel, the receptionist enters another room to fetch a glass of water while the courier is still present. As the receptionist enters the room, the courier quickly picks a laptop on the office desk and hurriedly leaves the office. Upon return with the glass of water, the receptionist realises the courier has left the office. As she sits down, she notices the laptop is no longer on the desk. The receptionist quickly rushes out of the office and sees the courier outside with the laptop. The receptionist raises an alarm by shouting. As the courier runs away, she bumps into a woman with shopping bags, making the shopping bags fall to the ground. The courier continues to run until she gets to a nearby garden where no one was present at scene. She removes her helmet, throws it into the garden, and leaves the scene. The duration of the event is approximately 1 minute 30 seconds. The recording, used with permission, is available at:

<https://www.youtube.com/watch?v=D0GwhUEfMgA>

***Personal Cultural Orientation Scale*** (Piyush Sharma, 2010). This scale measures several dimensions of cultural orientation. For the purposes of our study, the Power and the Social Inequality sub-scales were used to measure self-reported power distance (Sharma, 2010). These two sub-scales comprise four items each. Sample items on the power sub-scale are '*I find it hard to disagree with authority figures*' and '*It is difficult for me to refuse a request if someone senior asks me*'. Sample items on the social inequality sub-scale are '*It is difficult to interact with people with different social status than mine*' and '*A person's social status reflects his/ her place in society*'. Items on the scale are measured on a 7-point Likert

scale (1 = *strongly disagree*; 7 = *strongly agree*). Reliability for the cultural dimensions (subscales) ranges from .72 to .85 (Sharma, 2010).

## **Procedure**

Participants in the study were tested individually. After giving consent for participation, participants viewed the mock crime and then completed a filler task (visual illusion task) for 10 minutes. Participants were then asked to provide a written free recall report about the event they had witnessed. Participants in the police condition were told to assume they were reporting what they had witnessed to a police investigator. Participants in the peer condition were told to assume they were reporting what they had witnessed to a friend. Participants in both conditions were instructed to be as accurate and detailed as possible in their reports. Participants had up to 10 minutes to give their written free recall report, in line with previous research (Karpicke & Roediger, 2007; Zaromb & Roediger, 2010). They were also informed that should they finish before the 10 minutes elapsed, any remaining time would still be available to them before moving to the next task. All participants across groups completed their reports before the 10 minutes elapsed. Following the free recall report, participants were asked to rate their level of confidence in their overall report on a scale of 1 (not at all confident) to 10 (very confident). Participants then completed a cued recall task in which they were asked six questions about the event (e.g., ‘What was the courier wearing?’ and ‘What items were on the employee’s desk?’). There was no time restriction on cued recall questions. At the outset, they were reminded again of the audience for these answers (police or peer) and they were instructed to be accurate and detailed as possible in their answers and to avoid guessing. After responding to the cued recall questions, participants rated their level of confidence in their overall cued recall report, on a scale of 1



(not at all confident) to 10 (very confident). Participants then completed the cultural orientation scale (measures of Power and Inequality) and provided demographic information. All instructions and questions in the study were in English. Participants were debriefed and thanked for their participation after completion of the procedures. The study received ethical approval from institutional review boards in Ghana and the Netherlands.

### **Coding**

A detailed coding template developed by the first author based on the target event which we used in a previous study was used in coding the transcripts. Items coded as correct were items that were present in the filmed event and rightly described as such by participants (e.g., describing a white desk in the office). Items were coded as incorrect if the description was discrepant with what was in the film event (e.g., describing the office desk as brown, when in fact it was white). Vague (e.g., she was average height) and subjective responses (e.g., the man was handsome) were not coded. 'Don't know' or 'Don't remember' responses were coded as unanswered questions. 'Don't know' response type has also been referred to as 'Withheld details' in the metacognition literature (Koriat & Goldsmith, 1994, 1996). In this study, we used the term 'unanswered questions' for the avoidance of confusion. A second coder coded 22% of the transcripts. We found high inter-coder reliability (ICC) for correct details both in free recall (.96) and cued recall (.89).

## **Results**

### **Free recall**

There was a significant main effect of cultural group for the total number of correct details reported in free recall,  $F(1, 113) = 52.78, p < .001, \eta_p^2 = .32$ . Mock witnesses from the Netherlands ( $M = 39.14, SD = 12.13$ ) reported significantly more details in their free recall

reports than mock witnesses from Ghana ( $M = 25.36$ ,  $SD = 9.33$ ) despite both groups receiving exactly the same reporting instructions. The main effect of reporting context on the total number of correct details reported was not significant,  $F(1, 113) = 3.36$ ,  $p = .07$ ,  $\eta_p^2 = .03$ . There was, however, a significant interaction effect between cultural group and reporting context for the total number of correct details reported, albeit a small effect,  $F(1, 113) = 5.87$ ,  $p = .02$ ,  $\eta_p^2 = .05$ . Mock witnesses from the Netherlands reported more correct details when reporting to police than when reporting to a peer ( $p = .02$ ). Reports provided by mock witnesses from Ghana did not differ in the number of correct details reported to either police or a peer ( $p = .62$ ). See Table 5.1.

Table 5. 1

*Mean (Standard Deviation) for correct details, accuracy rate, unanswered questions, and confidence ratings in the respective conditions by cultural group in free recall and cued recall*

		Ghana		The Netherlands	
		Police	Peer	Police	Peer
Free Recall	Correct details	24.79 (7.88)	25.94 (10.67)	43.73 (12.58)	35.41 (10.57)
	Accuracy rate	.98 (.03)	.98 (.03)	.98 (.02)	.98 (.02)
	Confidence	8.51 (1.12)	8.70 (1.21)	7.91 (.97)	8.37 (1.01)
Cued Recall	Correct details	12.39 (4.12)	11.21 (4.46)	20.41 (6.67)	16.81 (4.46)
	Accuracy rate	.89 (.13)	.90 (.10)	.95 (.05)	.92 (.07)
	Confidence	8.06 (1.25)	8.12 (1.41)	7.18 (1.26)	7.33 (1.30)
	Unanswered questions	.39 (.79)	.45 (.71)	.77 (.61)	.70 (.82)

The main effect of culture on the accuracy rate of reported details was not significant,  $F(1, 113) = .19$ ,  $p = .67$ ,  $\eta_p^2 = .002$ . The accuracy rate for free recall was high for each group

(Ghana –  $M = .98$ ,  $SD = .03$ ; the Netherlands –  $M = .98$ ,  $SD = .02$ ). The main effect of reporting context on the accuracy of reported details was also not significant  $F(1, 113) = .07$ ,  $p = .80$ ,  $\eta_p^2 = .001$ . The interaction between cultural groups and reporting context was also not significant  $F(1, 113) = .54$ ,  $p = .47$ ,  $\eta_p^2 = .01$ .

We conducted an exploratory analysis on the confidence in reported details in free recall. There was a significant main effect of cultural group on confidence in overall report for free recall reports,  $F(1, 113) = 5.06$ ,  $p = .03$ ,  $\eta_p^2 = .04$ . Mock witnesses from Ghana ( $M = 8.61$ ,  $SD = 1.16$ ) had more confidence in their free recall reports than mock witnesses from the Netherlands ( $M = 8.16$ ,  $SD = 1.01$ ). Reporting context did not have a significant effect on confidence in free recall reports,  $F(1, 113) = 2.41$ ,  $p = .12$ ,  $\eta_p^2 = .02$ . The interaction between cultural group and interviewing condition was not significant,  $F(1, 113) = .45$ ,  $p = .50$ ,  $\eta_p^2 = .004$ .

### **Cued recall**

There was a significant main effect of cultural group on the total number of correct details reported in cued recall,  $F(1, 113) = 54.64$ ,  $p < .001$ ,  $\eta_p^2 = .33$ . Mock witnesses from the Netherlands ( $M = 18.43$ ,  $SD = 5.79$ ) reported significantly more correct details than mock witnesses from Ghana ( $M = 11.80$ ,  $SD = 4.30$ ). There was a significant main effect of reporting context for the total number of correct details reported  $F(1, 113) = 6.72$ ,  $p = .01$ ,  $\eta_p^2 = .06$ . Mock witnesses reported more correct details when reporting to a police investigator ( $M = 16.40$ ,  $SD = .4.97$ ) than when reporting to a peer ( $M = 14.01$ ,  $SD = 4.90$ ). The interaction effect between cultural group and reporting context was not significant  $F(1, 113) = 1.72$ ,  $p = .19$ ,  $\eta_p^2 = .02$ .

The main effect of cultural group on the accuracy of reported details was significant,  $F(1, 113) = 6.19, p = .01, \eta_p^2 = .05$ . Responses to cued recall questions provided by mock witnesses from the Netherlands ( $M = .94, SD = .06$ ) were more accurate than responses provided by mock witnesses from Ghana ( $M = .89, SD = .11$ ). Both the main effect of reporting context,  $F(1, 113) = .40, p = .53, \eta_p^2 = .004$ , and the interaction between cultural group and reporting context on the accuracy of details were not significant,  $F(1, 113) = .93, p = .34, \eta_p^2 = .01$ .

The main effect of cultural group on unanswered questions was significant,  $F(1, 113) = 4.97, p = .03, \eta_p^2 = .04$ . Mock witnesses from the Netherlands ( $M = .73, SD = .73$ ) left more questions unanswered than mock witnesses from Ghana ( $M = .42, SD = .75$ ). However, it should be noted that the number of unanswered questions was very small, less than one on average. The main effect of reporting context on unanswered questions was not significant,  $F(1, 113) = .001, p = .98, \eta_p^2 = .000$ . The interaction between cultural group and reporting context was also not significant,  $F(1, 113) = .21, p = .65, \eta_p^2 = .002$ .

Finally, there was a significant main effect of cultural group on confidence in overall cued recall reports,  $F(1, 113) = 11.30, p = .001, \eta_p^2 = .09$ . Mock witnesses from Ghana ( $M = 8.09, SD = 1.32$ ) were more confident in their cued recall reports than mock witnesses from the Netherlands ( $M = 7.27, SD = 1.27$ ). The main effect of reporting context on confidence in cued recall reports was not significant,  $F(1, 113) = .18, p = .67, \eta_p^2 = .002$ . The interaction between cultural group and reporting context on confidence in cued recall reports was not significant,  $F(1, 113) = .03, p = .86, \eta_p^2 = .000$ .

### **Self-reported power distance**

On the power dimension of the cultural orientation scale, participants from Ghana ( $M = 16.12$ ;  $SD = 5.35$ ) and the Netherlands ( $M = 15.63$ ;  $SD = 4.19$ ) did not significantly differ in their ratings,  $t(113) = .53$ ,  $p = .60$ ,  $d = .10$ . There was, however, a significant difference between participants from Ghana and the Netherlands on the social inequality dimension of the cultural orientation scale,  $t(113) = 8.29$ ,  $p < .001$ ,  $d = 1.58$ , with participants from Ghana ( $M = 17.24$ ,  $SD = 4.19$ ) perceiving more social inequality than participants from the Netherlands ( $M = 10.98$ ,  $SD = 3.74$ ).

### Discussion

We investigated whether there is what might be described as an authority effect in the eyewitness memory reports provided by witnesses from different cultural backgrounds. In our sample of participants drawn from high and low power distance (PD) cultures, the reports provided by mock witnesses from the high PD culture did not differ in terms of the amount of information reported irrespective of the reporting context. However, mock witnesses from the low PD culture reported more details when told the audience for their report would be a police investigator than when told it would be a peer. Irrespective of reporting context, mock witnesses from the low PD culture reported more details in their eyewitness memory reports than mock witnesses from the high PD culture. We also found mock witnesses from the high PD culture were more confident in their memory reports than mock witnesses from the low PD culture.

Mock witnesses from the high PD culture reported the same amount of details irrespective of who they were reporting to. Although this is not consistent with our hypothesis that such witnesses would provide less information when reporting to an authority figure, it is an interesting outcome, particularly in light of the pattern observed for low PD mock witnesses. However, perhaps in the absence of relevant previous literature to draw on

in this particular context, we failed to take account of the effect of another important factor. In a typical forensic setting involving a high-stakes situation, one would expect that a premium would be placed on detailed information provision, unlike any ordinary situation like reporting to a friend. That speculation is consistent with the finding that mock witnesses from the low PD culture reported more details when reporting to police than to a peer. As this was not the case for sub-Saharan African mock witnesses, we speculate the perceived authority might have impaired providing detailed reports to the police. This speculation is in line with the argument that high PD could impede free and spontaneous communication (Ghosh, 2011). In fact, in a previous study where mock witnesses from a collectivistic culture provided less detailed memory reports, it was also observed that they endorsed hierarchy in social relationships, compared to mock witnesses from an individualistic culture, who reported more details (Anakwah et al., 2020a). Consistent with that study, we found in the present study that mock witnesses from the high PD (collectivistic) culture perceived more social inequality than mock witnesses from the low PD (individualistic) culture. Essentially, high PD mock witnesses were more likely to indicate the existence of hierarchy in social interactions. There is the need for investigative professionals to put in place measures to reduce interviewees' sensitivity to power dynamics that may impair reporting during investigative interviews. Future research should examine how the authority effect on information elicitation in forensic settings can be mitigated, especially for witnesses from high PD cultures.

The self-enhancing tendency, argued to be a predominant self-presentational norm among individualistic cultures (Yamagishi et al., 2012a), may have accounted for the differences in memory reports provided to police and a peer, by mock witnesses from the low PD (individualistic) culture. Mock witnesses from individualistic culture reported more

details when reporting to a police detective, a more formal context than when reporting to a friend, an informal context. These two scenarios (police and friend) involve different stakes and might have led individuals from the individualistic culture to optimise their reports consistent with the stake or scenario involved. Thus, with higher stakes involved (reporting to police), the individualistic culture mock witnesses were motivated to adjust their self-presentation accordingly, and thus, engaged more in self-enhancement. Hence, for individuals from individualistic cultures, the motivation to be self-expressive is likely to be high in a more formal context. That speculation is in line with previous research showing that in formal settings, individuals are more likely to provide more useful information than in informal settings (Martín-Luengo, Shtyrov, Luna, & Myachykov, 2018). Thus, because reporting to police assumes a formal setting, we speculate this may have facilitated detailed reporting more than an informal scenario such as reporting to a friend, for mock witnesses from the low PD (individualistic) cultural group.

The observed differences across cultures in optimising details provided to police may also reflect different experiences and attitudes towards the police in the respective countries. For example, excesses in policing such as police brutality, human rights abuses, and corruption may vary across countries. It has been argued that such excesses tend to be high in developing countries than developed countries (Tankebe, 2010), most of whom fall within the individualistic and collectivistic cultural dimensions, respectively (Hofstede et al., 2010). It could be that these variations in police experiences may lead to different levels of trust in police and institutions across cultures. Indeed it has been argued that in many high PD cultures, there is weak trust in institutions (Doney, Cannon, & Mullen, 1998). Consistent with that argument, it has been demonstrated that compared to America (low PD culture), confidence in police in South Korea (high PD) is low (Boateng, Lee, & Abess, 2016). Trust

facilitates motivation and co-operation (Zanini & Migueles, 2018), therefore, a low level of trust in the police may have implications for unwillingness to cooperate as witnesses in investigative contexts (Papp, Smith, Wareham, & Wu, 2019; Tankebe, Reisig, & Wang, 2016). When cooperation is lacking in investigative interviews, information disclosure may be minimal (De La Fuente Vilar et al., 2020). Thus, differences in experience and levels of trust in the police across cultures may account for the observed differences in optimising reports provided to the police. Future research should investigate whether police trust plays any role in the provision of eyewitness memory reports across cultures.

Mock witnesses from the low PD (individualistic) culture reported more details than mock witnesses from the high PD (collectivistic) culture, irrespective of the reporting context. This finding is in line with previous work showing mock witnesses from individualistic cultures report more elaborate memory reports than those from collectivistic cultures (Anakwah et al., 2020a). Communication in collectivistic cultures has been argued to be high in context, where many things are not explicitly communicated (Hall, 1976). According to Hall (1976), in high context (collectivistic) cultures where the relationship between individuals is tight, communication is not explicit and many things tend to be left unsaid, allowing the context to communicate what is implied. Thus, in their memory reports, mock witnesses from collectivistic cultures might not be spontaneously explicit and might assume their audience to have some prior knowledge or use some contextual cues to grasp the message. Conversely, as communication in low context (individualistic) cultures tend to be more explicit, mock witnesses from individualistic cultures might have spontaneously provided elaborate memory reports. This is consistent with previous research showing individuals from collectivistic cultures provide generic responses, compared with those from individualistic cultures (Wang, 2004).



Mock witnesses from the high PD culture gave higher confidence ratings for their memory reports than mock witnesses from the low PD culture. It is possible that even though mock witnesses from the high PD cultural group underreported details, they were certain about the accuracy of their memory reports. In line with this speculation, we found that although mock witnesses from the high PD culture reported fewer details than low PD mock witnesses, the former did not differ from the latter in the accuracy of reported details for free recall. Nevertheless, during cued recall, mock witnesses from low PD cultures seemed to be more accurate. That difference in the cued recall may be because low PD mock witnesses may have engaged more in memory regulation during cued recall where they had the option to withhold (refrain from answering) or provide answers to questions. Consistent with that speculation we found more questions were left unanswered by low PD mock witnesses than high PD mock witnesses.

There are some limitations associated with the current study. The instruction to mock witnesses to provide a written recall in the respective scenarios might not be strong enough to induce the hypothesised effect. Although we argue the similar amount of details reported by collectivistic cultural mock witnesses to police and peer could be another manifestation of authority effect (i.e, lack of enhanced memory report to police), a stronger manipulation such as a live interviewer might have yielded an authority effect in the hypothesised direction (i.e., impeding memory reports of high PD mock witnesses to police more than to a peer). Future research should use a live interviewer, playing the appropriate role, in the respective conditions. Having said that, our methodological approach is in line with previous research showing an authority effect even under subtle or implicit operationalisations of authority (Matsumoto & Hwang, 2019). The use of an urban (university) collectivistic sample might have also weakened the authority effect. Rural collectivistic cultures have been argued to be

more collectivistic than urban collectivistic populations (Ma et al., 2015; Rooks et al., 2016). It makes sense, therefore, that among collectivistic cultures, power distance would be higher among rural populations than urban populations. Future studies should examine the authority effect further by including a rural sample. Another limitation is that the sample size on which our findings are based on is relatively small. This limits the generalisability of our findings. Nevertheless, our findings provide some initial evidence on how authority status impacts witnesses with diverse cultural backgrounds differently. Future research should explore this further with a larger sample size.

### **Conclusion**

Our aim in this study was to examine whether reports from memory about crime events provided by witnesses from different cultural backgrounds would differ as a function of who they are reporting to. Specifically, we wanted to find out whether an authority reporting context would impact eyewitness memory reports differently than a non-authority context across cultures. We sampled mock witnesses from western Europe and sub-Saharan Africa, representing low PD and high PD cultures, respectively. Our results suggest authority may play a role in cultural differences in eyewitness memory reports. Specifically, the results show while reporting to an investigator may facilitate elaborate memory reporting for witnesses with low PD cultural background, it may impede memory reporting for witnesses with a high PD cultural background. Findings from this research provide initial insight for investigative professionals eliciting memory reports in cross-cultural contexts, on how power dynamics may impact informational outcomes. Future research is needed on how best to minimise perceived power differentials in cross-cultural investigative interviews.

## **Chapter 6: General Discussion**

## **Introduction**

Information obtained from eyewitnesses is an important piece of evidence in criminal prosecutions (Wells et al., 2020). In an era of increased migration and globalisation, investigative and legal practitioners inevitably handle eyewitness memory reports obtained in cross-cultural contexts. Eliciting eyewitness memory reports in cross-cultural settings can be challenging if insight into culturally determined reporting norms is limited. Previous research has documented cultural influences in behaviour and cognitive processes. Given that the culture in which individuals are socialised may play a role in shaping their behaviour and cognition, research in eyewitness memory must examine whether there are variations in eyewitness memory reports across cultures. That is particularly important given that, to date, most of the conclusions drawn from research in eyewitness memory has been based on work with western samples. The programme of research conducted for this doctoral thesis makes a novel contribution to the field of eyewitness memory by going beyond examining eyewitness memory performance in western cultures in order to understand how individuals socialised in sub-Saharan African cultures formulate their eyewitness memory reports. Thus, the programme of research is the first to examine comprehensively, cultural differences in the content and nature of eyewitness memory reports.

The overarching aim of the programme of research reported for this thesis was, primarily, to find out whether there are cultural differences in eyewitness memory reports. Across four empirical studies, there was consistent evidence of underreporting of details among sub-Saharan African mock witnesses in comparison to Western European mock witnesses. Overall, the research provides evidence that eyewitness memory reports may be shaped by culturally determined reporting norms of the witness. In this chapter, a summary

and consolidation of the findings from this programme of research is presented. This is followed by a discussion on the scope and generalisability of the findings. Afterwards, theoretical considerations, as well as methodological considerations and future research directions, are presented. Following that is a discussion about the implications of the findings. Finally, challenges involved in conducting cross-cultural research will be explored.

### **Summary of findings**

**Cultural differences in eyewitness memory reports.** The goal of the first experiment reported in the thesis (Chapter 2) was to provide some initial insights into whether the eyewitness memory accounts provided by people from different cultures differ in terms of content or other aspects. Previous research on cross-cultural cognition demonstrated that individuals may be prone to prioritise either central or contextual details in their memory reports, depending on their cultural orientation. Based on work on cultural differences in holistic-analytic cognition, it was expected that mock witnesses with a collectivistic cultural background would report more contextual details than mock witnesses with an individualistic cultural background, who were expected to report more central details than mock witnesses with collectivistic orientation. The results indicated that irrespective of their cultural background, witnesses report central details more than contextual details in their eyewitness memory reports.

Although mock witnesses across cultures did not differ in reporting specific types of details, the results described in Chapter 2 showed cultural differences in elaborate memory reporting. In that novel contribution, I found that mock witnesses with a collectivistic cultural orientation report fewer details in their eyewitness memory reports than mock witnesses with an individualistic cultural orientation, in both free and cued recall. That observed cultural difference in eyewitness memory reporting can be attributed to culturally determined

reporting norms. For instance, it has been argued that communication in collectivistic cultures tends to be more implicit, where many things are left unsaid, unlike individualistic cultures where explicitness is valued more (Hall, 1976). Hence, it is perhaps unsurprising that the eyewitness memory reports provided by individuals with an individualistic cultural background contained more explicit descriptions of event details than descriptions provided by individuals with a collectivistic cultural background.

The cultural differences in eyewitness memory reports could also be accounted for by self-presentational differences across cultures, with individualistic cultures emphasising self-expression more than collectivistic cultures, where modesty in self-presentation tends to be the norm (Heine et al., 2000; Yamagishi et al., 2012a). Modest reporting norm is also demonstrated by the fact that mock witnesses from the collectivistic cultural group withheld more details than those from the individualistic cultural group. It could be that mock witnesses from collectivistic cultures withheld details they were unsure about, accounting for the underreporting of details. It has been argued in a framework on the strategic regulation of memory that individuals opt not to report details they are uncertain about to enhance the accuracy of reported details (Koriat & Goldsmith, 1996). That memory regulation strategy was effective in minimising the reporting of incorrect details among the sub-Saharan African mock witnesses, as the results also show that they reported fewer incorrect details than mock witnesses from the individualistic cultural group. Hence, while details were underreported by mock witnesses from collectivistic cultures, it was at the expense of reporting incorrect details in their eyewitness accounts. That finding suggests that the threshold for reporting correct details by witnesses from collectivistic cultures seems to be relatively strict in comparison to witnesses from individualistic cultures.

The findings presented in Chapter 2 also showed the tendency for an own-cultural-setting effect in the reporting of crime scene information. Mock witnesses with collectivistic cultural orientation were likely to report more correct central details in their free recall for crimes witnessed in their own cultural setting than those witnessed in a different cultural setting. However, the own-cultural-setting effect for witnesses with collectivistic cultural background seems to disappear in a cued recall, as they report the same amount of correct central details, regardless of the setting, in response to cued recall questions. Interestingly, in the cued recall, witnesses with the individualistic cultural background reported more details for crimes witnessed in their own-native setting than a non-native setting, but not for free recall. In free recall, individualistic mock witnesses did not differ in the reporting of correct central details for their own-native setting and a non-native setting.

**Acculturation effect.** Given that socialisation in a cultural context impacts the content of eyewitness memory reports, the focus of the second experiment (Chapter 3) was on examining whether migrating and adapting to a culture different from one's native culture shapes eyewitness memory reporting. The results showed that migrant witnesses with collectivistic cultural backgrounds living in individualistic cultures provided more elaborate memory reports than those living in their native culture. In fact, migrants were more likely to provide detailed reports the longer their duration of residence in the host culture. The finding that adapting in a cultural environment has an impact on the content of memory reports is consistent with findings presented in Chapter 2 showing that socialisation in individualistic cultures leads to more elaborate memory reporting. Thus, the results presented in Chapter 3 demonstrate that migrants adapt to the reporting norms of their host culture over time. As in Chapter 2, the results presented in Chapter 3 also demonstrate that regardless of the culture a

witness is socialised in, central details are reported more than contextual details in their eyewitness memory reports.

**The misinformation effect.** The aim of the research presented in Chapter 4 (Experiment 3) was to examine whether witnesses socialised in different cultures are susceptible to misinformation about particular types of detail (i.e., central versus contextual detail). Based on work showing cross-cultural differences in holistic-analytic cognition, I sought to specifically find out whether individuals socialised in individualistic cultures are more susceptible to misinformation about contextual details, whereas those socialised in collectivistic cultures are more susceptible to misinformation about focal details. The results showed memory was impaired to the same extent for mock witnesses irrespective of culture, following exposure to misleading post-event information. I also found that irrespective of cultural background, memory impairment after exposure to misleading post-event information was more pronounced for contextual details than central details. Nevertheless, the results showed that while misinformation acceptance permeates across cultures, witnesses from collectivistic cultures are more likely to accept suggested details, compared with witnesses from individualistic cultures. That tendency may be attributed to the cultural construal of the self in collectivistic cultures, where the self is viewed as integrated with the social context (Markus & Kitayama, 1991, 2010). An interdependent view of the self could increase the likelihood that witnesses socialised in such cultures will prioritise information from other social sources in their eyewitness accounts. Hence, in their account of witnessed events, they may become more susceptible to incorporating information from social sources such as co-witnesses.

Although the results of the experiment presented in Chapter 4 showed cultural differences in the acceptance of misinformation in a recognition task, the results suggested



that differences in misinformation endorsement disappear in free recall. Witnesses from collectivistic cultures appear to engage more in memory regulation by sieving out details that may compromise accuracy in their free recall (Koriat & Goldsmith, 1996). In line with this, the results in Chapter 4 also showed that witnesses from collectivistic cultures report fewer incorrect details in free recall than witnesses from individualistic cultures. However, the results showed again in Chapter 4 that witnesses with individualistic cultural backgrounds provide more elaborated memory reports in their eyewitness accounts. That finding replicates the results presented in Chapters 2 and 3.

**The authority effect.** The experiments reported in Chapters 2, 3 and 4 show that individuals socialised in collectivistic cultures tend to underreport details in their eyewitness memory reports in comparison to individuals socialised in individualistic cultures. One factor that might account for the cultural differences in elaborate memory reporting is cultural differences in relating with authority figures. It has been argued that cross-cultural differences in interacting with authority figures could have implications for cultural differences in spontaneous and elaborate memory reporting (Ghosh, 2011; Wang, 2006). Accordingly, in Chapter 5 (Experiment 4), I sought to find out whether the mere fact of reporting to an authority figure (interviewer) might account for variations in eyewitness memory reports across cultures. Based on the power distance (PD) cultural framework (Hofstede, 1983, 2011), I sampled mock witnesses from cultures representing high PD and low PD cultures. They were asked to provide memory reports of a mock crime to either a peer or a police officer. The results showed that witnesses from individualistic (low PD) cultures provide more elaborate memory reports when reporting to a police detective than when reporting to a friend. However, witnesses from collectivistic (high PD) cultures report the same amount of details, regardless of whether they are reporting to a peer or a police

detective. The elaborate memory report when reporting to police may be grounded in self-presentational norms in individualistic culture (Yamagishi et al., 2012a). It has been argued that individuals from individualistic cultures are more responsive to the social environment and look for avenues to assert their unique dispositions (Markus & Kitayama, 1991, 2003). When reporting in a formal context such as a forensic setting, witnesses from individualistic cultures may be more likely to adjust their self-presentation, engaging more in self-enhancement, than when reporting in an informal context.

As with experiments reported in Chapters 2 - 4, the findings reported in Chapter 5 indicate that witnesses from collectivistic cultures report fewer details than witnesses from individualistic cultures. However, the results in Chapter 5 also showed accuracy rates across cultures did not differ in free recall. That finding supports the earlier argument that although mock witnesses from collectivistic cultures underreport details, they may have engaged in memory regulation to enhance the accuracy of reported details. Nevertheless, the accuracy rate was higher for mock witnesses from individualistic cultures than those from collectivistic cultures, in cued recall. Mock witnesses from individualistic cultures left more questions unanswered in cued recall than mock witnesses from collectivistic cultures. The results described in Chapter 5 suggest that the PD cultural dimension may account for cultural differences in elaborate memory reporting.

### **Theoretical considerations**

**Analytic-holistic cognition.** Findings from this programme of research challenge one of the dominant frameworks in cross-cultural cognition. Proponents of the framework on cultural differences in holistic-analytic cognition suggest that individuals from cultures that emphasise the independent self-construal develop analytic cognition, whereas individuals from cultures that emphasise the interdependent self-construal develop a holistic cognition

(Markus & Kitayama, 1991, 2010; Masuda & Nisbett, 2001). As a result, they argue individuals with the individualistic cultural background are more likely to encode and recall more focal details, whereas those with a collectivistic background are more likely to encode and recall more contextual details. The holistic-analytic cognition proposal has been a dominant framework in the study of culture and memory (Gutchess & Sekuler, 2019). Indeed previous research has provided evidence consistent with the holistic-analytic cognitive styles in the respective cultures (Huang & Park, 2013; Kitayama et al., 2003; Masuda & Nisbett, 2006).

Interestingly, findings from this programme of research show that individuals are most likely to recall more focal details, regardless of their cultural orientation. That suggests that the proposed framework on the cultural difference in holistic-analytic cognitive style may have limited applicability across contexts. For example, it could be that the framework may not be applicable within the forensic context as demonstrated in Chapters 2, 3, and 4. That is because in any crime event, witnesses are more likely to focus on the actual event instead of other events in the background. Further development of the framework is needed to specify the scope of applicability and under what conditions or contexts the cultural differences in holistic-analytic cognition may be generalisable.

**Self-presentation.** The results showing cultural differences in elaborate memory reporting seem to support cultural differences in self-presentation, as posited in the self-construal theory. According to the independent-interdependent self-construal, self-presentational patterns across individualistic and collectivistic cultures differ, as the respective cultures predispose individuals to self-enhance and self-efface, respectively (Markus & Kitayama, 1991; Takata, 2003). For example, individuals socialised in individualistic cultures have been argued to view the self as unique (Markus & Kitayama,

2003). As a consequence, they become more responsive to the social environment in which they find themselves, as they look for avenues to assert that uniqueness (Markus & Kitayama, 1991). That predisposition has been argued to make individuals from individualistic cultures more self-expressive, what has been referred to as self-enhancement (Yamagishi et al., 2012a). In this programme of research, mock witnesses with an individualistic cultural background provided more enhanced memory reports, compared to mock witnesses with a collectivistic orientation, who underreported observed details. Indeed, further evidence from this programme of research suggests that more details were withheld by mock witnesses from a collectivistic cultural background, who refrained from reporting details they were uncertain about than mock witnesses with an individualistic cultural background. That modest reporting pattern seems to be in line with the proposed self-effacing self-presentational style of collectivistic cultures. Future research should examine the extent at which cultural differences in the presentation of the self shape the content of memory reports.

**Power distance framework.** The results observed in this programme of research aligned with the power distance cultural framework, which predicts cultural differences in relating with authority figures. Specifically, whereas high PD cultures emphasise hierarchy in social relationships, in low PD cultures hierarchy is less emphasised (Hofstede, 2011). That difference has been argued to play a role in spontaneous and elaborate detail provision when interacting with authority figures (Wang, 2006). Our findings show that whereas individuals from low PD cultures provided more elaborate reports to a police detective than they did to a peer, those in high PD cultures did not differ in detail provision to police detective and peer. We argued that the differences could be accounted for by an authority effect, in line with the PD framework. Indeed our results also showed individuals in high PD cultures perceive more

inequality (Chapter 5) and also endorse hierarchy in social relationships (Chapter 2) than individuals in low PD cultures.

The observed differences in the authority effect on eyewitness memory reports across cultures may also be linked to self-presentation. It could be that interacting with an authority figure may enhance or impede self-presentation across the respective cultures. Thus, it is possible these two concepts (power distance and self-presentation) may be linked in explaining cultural differences in memory reporting. Specifically, while individuals with an independent self-construal are likely to see the self as unique, that uniqueness is likely to be most asserted in a formal setting such as interacting with or reporting to an authority figure than it is to be asserted when interacting with a peer. It is, therefore, proposed that even in cultures that emphasise the independent self-construal, the extent of self-enhancement may vary across situations and could be a function of who individuals are interacting with. Specifically, there is the possibility of extreme/ enhanced self-effacement when individuals from such cultures are interacting with authority figures than when interacting with a peer. Similarly, in cultures where the interdependent self-construal is emphasised, the extent of self-effacement may vary and could be a function of who individuals from such cultures are interacting with. Based on previous work and findings from the current programme of research, I propose a cross-cultural memory reporting model (Figure 6.1).

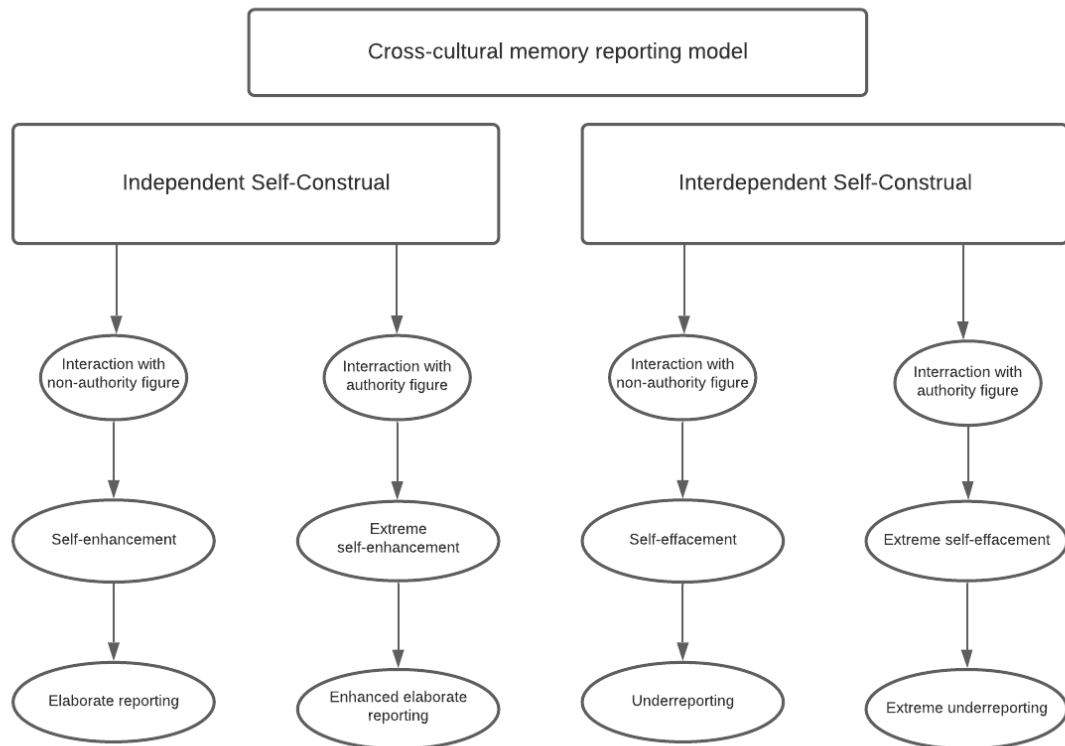


Figure 6. 1. The proposed model shows differences in memory reporting across cultures. For each culture, the degree of self-presentation and content of memory reports further vary depending on who an individual is reporting to.

The proposed model suggests that when individuals from cultures that emphasise the independent self-construal are interacting with or reporting to a non-authority figure (e.g., a peer), the self-presentational pattern they are likely to engage in is the normal self-enhancement, consistent with the self-presentational style of that culture. Eventually, that self-enhancement may lead to the normal elaborate memory reporting, consistent with the general reporting model of that culture. However, when reporting to an authority figure, (e.g., police detective), they are likely to adjust their self-presentation and engage in an extreme form of the self-presentational pattern consistent with that culture (extreme self-enhancement). It is proposed that, that extreme form of self-enhancement may also lead to an

enhanced form of elaborate reporting. For individuals socialised in cultures that emphasise the interdependent self-construal, the model proposes a pattern of memory reporting that is different from individuals socialised in cultures where the independent self is emphasised. Specifically, it is proposed that when reporting to a non-authority figure (e.g., a peer) the normal self-presentational pattern consistent with that culture would be shown (i.e., self-effacement), which would then lead to underreporting of detail, the general reporting model of that culture. It is further proposed that when reporting to an authority figure, individuals with an interdependent self-construal will engage in an extreme form of the self-presentational pattern consistent with that culture (i.e., extreme self-effacement). That extreme form of self-effacement may impede memory reporting, thus, leading to an extreme form of underreporting. Future research should test this proposed model and, indeed, explore the boundaries of this proposed model, across individualistic and collectivistic cultures.

**Misinformation acceptance and self-construal.** The research on the misinformation effect across cultures also seems to provide support for the self-construal theory. The theory posits that whereas individuals socialised in individualistic cultures view the self as separate from the social context, those socialised in collectivistic cultures view the self as integrated with the social context (Markus & Kitayama, 1991). Findings from this programme of research show that compared to individuals from individualistic cultures, individuals from collectivistic cultures were more susceptible to accepting misleading post-event information from a social source (i.e., media). According to the self-construal theory, individuals socialised in collectivistic cultures are more likely to prioritise the opinions of others than those socialised in individualistic cultures (Hofstede, 2001; Markus & Kitayama, 1991; Triandis et al., 1988). It might be argued that the view of the self as less embedded within the

social context may also account for misinformation resistance among mock witnesses from individualistic cultures, compared with collectivistic cultural mock witnesses.

It is clear from the above that findings from this programme of research may have important theoretical implications. While the findings provide general support for the self-construal theory, there is the need for work in cross-cultural cognition to expand and revise propositions on how culture shapes memory and the context of applicability specified.

### **Scope and generalisability of the current programme of research**

The current thesis fills an important gap in eyewitness memory literature. The vast majority of experiments on eyewitness memory have largely been conducted with mock witnesses from Western cultures. Generalising findings conducted with western samples to other non-western contexts can be problematic, as previous research has shown that cognitive processes may not be universal (Huang & Park, 2013; Kitayama et al., 2003). The scope of the current thesis, thus, differs from previous research in eyewitness memory, by going beyond western cultures and taking a cross-cultural perspective. Specifically, the programme of research takes an important step by comparing eyewitness memory reports provided by mock witness participants drawn from both western and sub-Saharan African cultures to examine how the cultural background of witnesses may shape eyewitness memory accounts. The experiments reported in this dissertation also differ from previous research on cross-cultural cognition in that, research on cross-cultural cognition has largely focused on drawing comparisons between East Asian and North American samples (Duffy, Toriyama, Itakura, & Kitayama, 2009; Huang & Park, 2013; Nisbett & Masuda, 2003; Nisbett & Miyamoto, 2005; Wang, Song, & Kim Koh, 2017). Thus, in the current research, the focus lay on comparing samples drawn from sub-Saharan Africa and Northern Europe.



Of course, it could be argued that findings reported in this thesis only apply to sub-Saharan Africans and Western Europeans, as that was the focus of comparison. Indeed, this is a limitation of the current programme of work. Nevertheless, these regions represent the collectivistic and individualistic cultural orientations. For example, on Hofstede's Individualism Index, which is on a continuum of 0 to 100, African countries such as Ghana, Kenya, Tanzania, Malawi, and Nigeria have an individualism index ranging between 15 – 30; whereas Western European countries such as Germany, The Netherlands, Sweden, and United Kingdom have index scores ranging between 80 to 91 (Hofstede, 1983; Hofstede et al., 2010). In a recent study by Minkov et al. (2017) examining 56 countries, the UK, The Netherlands, and other European countries featured among the top 10 individualistic countries, while sub-Saharan African countries featured in that study (e.g., Nigeria, Kenya, and South Africa) were among the 10 most collectivistic. Hence, even though the focus of this programme of research was sub-Saharan Africa and Western European comparison, these cultures are predominantly collectivistic and individualistic in orientation, respectively.

While replication of the experiments reported in this programme of research in other collectivistic cultures is encouraged, the findings may still be generalizable to cultures falling on the same cultural dimension. For example, our finding showing that individuals from sub-Saharan Africa underreport details in their eyewitness memory reports is consistent with previous studies on autobiographical memory conducted with East Asian and North American samples, representing collectivistic and individualistic cultures, respectively (e.g., Ross & Wang, 2010; Wang, 2004). Specifically, these studies also show that individuals from East Asia report fewer details in their autobiographical memory reports than individuals from North America. In view of the consistency in findings of the current study with studies in autobiographical memory conducted with Asian and North American samples, I argue that

findings from the current study may be generalizable to other collectivistic and individualistic cultures.

The current findings also highlight the possibility of within-cultural differences in eyewitness memory reporting. In the results described in Chapter 2, mock witnesses from the urban collectivistic cultural group reported more details than those from the rural collectivistic cultural group. A similar pattern has been reported in research on autobiographical memory reports, where children from rural collectivistic cultures report fewer details than children from urban collectivistic cultures (Göz, Çeven, & Tekcan, 2017). With the exception of the experiment reported in Chapter 2, all the collectivistic samples in this programme of research were urban collectivistic samples. Hence, it could be argued that findings reported in Chapters 3 through 5 may be more generalizable in terms of urban collectivistic cultures. However, considering that in those experiments, differences were still observed between individualistic and the urban collectivistic sample, it seems plausible to argue that the difference may have been more pronounced between rural collectivistic and individualistic sample, should those experiments have included rural collectivistic samples. For example, it is likely the authority effect may be more pronounced for rural collectivistic samples than an urban collectivistic sample. Similarly, the tendency for misinformation acceptance may be higher for rural collectivistic samples than an urban collectivistic sample. This is because previous work shows rural areas tend to be more collectivistic than urban areas (Göz, Çeven, & Tekcan, 2017; Ma et al., 2015) among collectivistic cultures (where hierarchy is emphasised and the interdependent self is predominant). Consequently, hierarchy and reliance on social sources of information may be more pronounced in rural collectivistic cultures than urban collectivistic cultures.

Migrating and adapting in a new cultural environment may impact behaviour and cognition (Berry et al., 2006; Hsu, 2010; Wang, 2008). For that reason, findings reported in Chapter 2, as well as Chapters 4 and 5, should be generalised with caution to witnesses with a collectivistic cultural background who have lived in an individualistic culture for an extended period of time. Indeed, the results presented in Chapter 3 suggest that as migrants adapt in their host culture, their eyewitness memory reports may differ from those of individuals in their home culture. In particular, it is worth noting that these initial results suggest that migrants with longer durations of residence in an individualistic culture provided more elaborate memory reports. Thus, the results described in Chapter 3 on the misinformation effect, and Chapter 4 on the authority effect might have limited generalisability to migrants with longer durations of residence in the host culture. However, it is possible that the content of eyewitness memory reports of migrants who have lived in the host culture for a relatively short period might be more similar to those of individuals living in their home culture, as the former have not spent a significant amount of time adapting in the host culture. The level of migrants' adaptation may also depend on the extent to which they engage with the host culture (Chioneso, 2008). During investigative interviews, it may be helpful to assess migrants' adaptation to the host culture, using a cultural adaptation inventory, to determine the extent of acculturation.

The current programme of research concerns applied memory performance and is located within the forensic context. Previous research on cross-cultural cognition has been conducted outside the forensic context. Specifically, in previous research, scenes used included animated vignettes of underwater scenes (Masuda & Nisbett, 2001; Senzaki et al., 2014), layouts of coloured blocks (Boduroglu et al., 2009), artistic representations (Istomin et al., 2014; Masuda, Gonzalez, et al., 2008), pictures of streets (Miyamoto et al., 2006), and

Facebook profile photographs (Huang & Park, 2013). Thus, the majority of previous research typically used neutral scenes as stimuli, and results generally show cultural differences in holistic-analytic cognition. Specifically, it has been suggested in those studies that individuals from individualistic cultures attend and report more focal details than individuals from collectivistic cultures, who attend to and report more contextual details than those from individualistic cultures (Gutchess & Indeck, 2009; Istomin et al., 2014). In the current programme of research, crime scenes and incidents constituted the experimental stimuli. Interestingly, and in contrast to research using neutral stimuli, the results reported in Chapters 2 to 4 showed that compared to contextual details, central details for crime scenes and events are reported the most, irrespective of a witness' cultural background. The unusual, negative and perhaps threatening nature of crime scenarios makes it more likely that memory reports about such events should consist of central details. Hence, from what we have learned from studies in a forensic context and what studies involving non-forensic scenarios show us, it would be safe to conclude that previous research using neutral scenes does not generalise well to the forensic context and vice versa.

### **Methodological considerations and future research**

In this programme of research, I undertook an important step to examine whether there are cultural differences in eyewitness memory reports. Four experiments were conducted to address the overarching research question. It is important to mention that these experiments are not without limitations. In this section, I discuss limitations associated with the current programme of research and also make recommendations for future research.

**Sample.** It is important to note that some of the experiments reported consisted only of student samples. For instance, the experiments reported in Chapters 4 (misinformation effect) and 5 (authority) were conducted with university students in Ghana, the Netherlands,

and the United Kingdom. While it was important to ensure that the sampled population in the three different countries were matched in terms of educational level, it could be argued that the student sample may not be representative of the general population (Hanel & Vione, 2016). Nevertheless, the finding for the experiments conducted solely with student samples was consistent with findings for experiments where participants were sampled from the general population (e.g., Experiments 1 and 2). It would still be necessary for future research to examine the misinformation effect as well as the authority effect across cultures, with samples drawn from the general population.

**Ecological validity.** The stimuli used in the current programme of research involved static stimuli and video recordings. The dynamics of real-life events may not necessarily be the same as a mock witness situation. For example, it is possible that a mock crime paradigm may not have the same emotional impact as in a real-crime situation (Christianson, 1992). It should be noted, however, that previous research mimicking real-life scenarios has shown the possibility of cultural differences within the forensic setting. For example, in research examining the forensic accounts of Native American (Navajo) children and mainstream-culture American children, researchers enacted a staged event with the children (Lindstedt, 2000). The findings from that research suggest that the content of forensic narratives of native American children differ from that of mainline American children. Nevertheless, it would be necessary for future research to extend the experiments reported in this programme of research to field settings. Future work should also include archival research involving witness statements to examine cultural differences in the content of eyewitness memory reports across cultures.

Also inherent in mock witness scenarios is a short retention interval which may not mimic real-life situations. Participants in this programme of research provided memory

reports of witnessed incidents a few minutes after exposure to the stimuli. In real-world scenarios, eyewitnesses may be interviewed about the witnessed event after an extended period of time. However, in research on autobiographical memory reports that involved recounting personally experienced childhood events, cultural differences were observed (Wang & Ross, 2005). Retention interval in such autobiographical memory studies span from the time of the childhood personal life experience to the period those studies were conducted (adulthood). Hence, individuals from different cultures may still differ in their memory reports even after longer retention intervals. In fact in the research by Lindstedt (2000), differences in the children's forensic narratives were still observed, even after months of experiencing the staged event. Thus, even though the mock witness paradigm used in the current programme of research may not mimic real-life scenarios in view of the short retention interval, findings from this programme of research replicate findings of previous research with longer retention intervals. Future research examining eyewitness memory reports across cultural groups should use longer retention intervals.

It is also important to mention that the use of a mock witness paradigm helped in achieving control that would not have otherwise been attained in a field setting. Using an experimental design in this programme of research helped hold constant variables that could have confounded results, across cultural groups. Also, the use of the same procedure and instructions across cultural groups helped to achieve experimental control. Nevertheless, it is important for findings from this programme of research to be replicated in field settings.

**Comparing groups.** The experiment on acculturation compared migrants from eight sub-Saharan African countries with migrants from a specific sub-Saharan African country (i.e., Ghana). Because those migrant participants were from different sub-Saharan African countries, it could be argued that it is problematic comparing them with participants from a

specific sub-Saharan African country. However, our cultural dimension of focus was the individualism-collectivism cultural dimension (Hofstede, 2011; Hofstede, Hofstede, & Minkov, 2010; Kim & Kim, 2016). Countries in Western Europe, North America, and Australia have been shown to be more individualistic in character, whereas countries in Asia, sub-Saharan Africa, and Latin America have a more collectivistic orientation (Hofstede et al., 2010; Markus & Kitayama, 1991; Matsumoto, 1999; Matsumoto et al., 2008). Thus, although migrant participants sampled from Western Europe were from different sub-Saharan African countries, the countries they originated from fall within the same cultural orientation.

Previous research on acculturation and cross-cultural psychology focusing on the individualism-collectivism cultural dimension has examined countries with similar cultural orientation under the same cultural classification (e.g., Amer, Ngo, & Hasher, 2017; Jobson, 2009; Millar, Serbun, Vadalía, & Gutchess, 2013; Mok & Morris, 2009; Norenzayan, Smith, Kim, & Nisbett, 2002; Taylor, Lerner, Conchie, & Menacere, 2017; Wang, 2009). For example, in research on cultural differences in autobiographical memory reports, participants falling under the collectivistic classification originated from Asia, Africa, Middle East, and Latin America, whereas those with individualistic classification were from Australia, Western Europe, and North America (Jobson, 2009). Thus, our sub-Saharan African sample falls within the cultural dimension of interest, as participants had a collectivistic cultural background. Future research comparing migrants from a specific country with those living in their home country would also shed more light.

**Longitudinal design.** Longitudinal design may have been more methodologically robust for tracking how culture shapes the content of eyewitness memory reports of migrants overtime. It is worth noting, however, that in the absence of longitudinal data, previous studies have used either duration of residence in the host culture, age of migrating to the host

culture, or group differences as a proxy for acculturation (e.g., Berry, Phinney, Sam, & Vedder, 2006; Cheung, Chudek, & Heine, 2011; Chudek, Cheung, & Heine, 2015; Wang, 2013; Wang & Ross, 2005). For example, in their study examining the acculturation of immigrants in 13 countries, Berry et al. (2006) used migrants' duration of residence in the new culture as a means of examining differences in adaptation over time. In this dissertation, besides group differences, the duration of residence in the individualistic cultural environment was used as a proxy for examining acculturation. It will be important, nonetheless, for future research to use a longitudinal design to track migrants' acculturation and eyewitness memory reports over a time period, from the time of arrival in the host culture.

**Within cultural variations.** It is also possible that there might be within-country differences in the level of the predominant cultural orientation. For instance, it has been shown in research that although Cameroon, West Africa, is collectivistic in cultural orientation, Northern Cameroon tends to be more collectivistic than Western and Central Cameroon (Pirttilä-Backman, Kassea, & Ikonen, 2004). Some have argued such within-cultural variation may be due to differences in dominant ecocultural practices in different regions of a country (Istomin, Panáková, & Heady, 2014). For example, individuals socialised in sedentary agricultural settings have been argued to be likely to resort to more interdependence, as they require harmonious group collaboration and cooperation for survival (Uskul, Kitayama, & Nisbett, 2008). Hence, dominant practices within particular regions in a country might lead to within cultural variations in the degree of predominant cultural orientation. The experiments reported in this programme of research mostly did not focus on within-group comparisons. Hence, it could be argued that the generalisability of the findings may be limited. However, in Experiment 1, eyewitness memory reports provided by both



mock witnesses from rural (farming) and urban centers of the collectivistic cultural group were compared. That experiment showed witnesses from urban collectivistic cultures report more details than witnesses from rural collectivistic cultures. As the experiments on acculturation, misinformation, and the authority effect did not include a rural collectivistic sample, it would be interesting for future research to sample from rural collectivistic cultures. It is worth noting that even for the experiment in this dissertation where mock witnesses from the collectivistic cultural group were sampled from only urban areas, some differences between the urban collectivistic sample and the individualistic culture were observed.

**Individual-level differences.** Aside from the possibility of different regions of a country varying in the degree of the predominant cultural orientation, there could also be variations at the individual level in the intensity of cultural variables. Research in cross-cultural psychology has done little to examine the degree of intensity of cultural variables at the individual level. It may be the case that although there are cultural differences in behaviour and psychological functioning, the intensity of specific constructs may further vary across individuals. For example, the degree of underreporting within the same cultural group may vary from person to person. As such, while being sensitive to an interviewee's cultural background, it may also be helpful for investigators not to lose sight of possible differences at the individual level and work within groups to identify optimal ways of eliciting memory. However, more research is needed to test these propositions. Hence, future research should examine the extent to which there are individual variations in the content of memory reports within cultural groups.

### **Implications of the current research**

In an increasingly globalised world, it is inevitable that eyewitness memory reports will be obtained in cross-cultural contexts (De Bruïne, Vredeveltdt, & Van Koppen, 2018;

Hope & Gabbert, 2019). Yet there is limited knowledge about how culture shapes report from memory about witnessed events. The experiments reported in this programme of research provide a novel contribution in the eyewitness memory literature and show consistent evidence that cultures differ in the nature of their eyewitness memory reports. In this subsection, I discuss the potential implications of the findings from this programme of research for the wider forensic context. Specifically, I discuss the implications these findings may have for applied settings including law enforcement contexts, counter-terrorism contexts, and asylum seeker contexts.

**Deception detection.** Investigators often have to determine whether an interviewee is lying or telling the truth. Research on deception detection has shown that amount of details is one of the cues in identifying truth-tellers from liars in law enforcement contexts. However, findings reported in this dissertation show that using the amount of details reported as a diagnostic cue in detecting deception may be weakened in cross-cultural settings. Across four studies in the current thesis, mock witnesses from collectivistic cultures provided fewer details than mock witnesses from individualistic cultures. In fact, Leal et al. (2018) observed that cultural differences in detail provision could lead to incorrectly interpreting such differences as cues to deception. They also found in that study that although truth-tellers generally provided more details than lie-tellers did, participants from the individualistic cultural group provided more details than those from the collectivistic cultural group. Leal et al. (2018) argued that while detailed information could help in distinguishing truth-tellers from lie-tellers, caution should be exercised when making such determination in cross-cultural contexts. Similarly, it has been argued that cues to deception deteriorate when made cross-culturally (Taylor, Larner, Conchie, & Menacere, 2017). Taylor et al. (2017) provided evidence that linguistic cues to deception are not consistent across cultures. Law enforcement

officials would need to be culturally sensitive when using the amount of details reported as credibility indicators during cross-cultural investigative interviews.

**True and false intentions.** Besides law enforcement contexts, findings from this programme of research may have implications for diagnosing true and false intentions in counter-terrorism contexts. Results from previous research show that suspects with true intentions also provide more details than those with false intentions (Granhag, Mac Giolla, Sooniste, Strömwall, & Liu-Jonsson, 2016; Mac Giolla & Granhag, 2015). It has been reasoned that because truth-tellers have experienced the event, they are able to elaborate more on details they provide, making them different from lie-tellers, who rehearse ahead about what to say. However, findings from this programme of research suggest that the provision of fewer details is not always an indicator that an individual has not witnessed or experienced the event in question. Detail elaboration may vary depending on the cultural background of a target. As shown in the current thesis as well as in research on autobiographical memory reports (Ross & Wang, 2010; Wang, 2001; Wang & Ross, 2005), individuals from individualistic cultures spontaneously provide more detailed and elaborate information than individuals from collectivistic cultures. Hence, there is a need for cultural sensitivity in counter-terrorism contexts in the use of detail provision as a marker of true or false intentions.

**Fabricated rape allegations.** It has also been shown that one of the indicators of fabricated rape allegations is the simplicity of the story and the lack of explicit details (De Zutter, Horselenberg, & Van Koppen, 2017). False complainants of rape have been argued to adopt a strategy of constructing a story that is concise and general (Marshall & Alison, 2006). While that might generally be the case, that diagnosticity may be weakened when made in cross-cultural settings. Across the experiments in this programme of research, mock

witnesses with a collectivistic cultural background provided less elaborate memory reports than mock witnesses with individualistic cultural background. A rape victim with a collectivistic cultural orientation may not spontaneously provide elaborate details when recounting their experience. Their story about the abusive incident might be less elaborate, concise, and lacking in detail, due to reporting norms in such cultures. It has been argued that each culture creates a model of what life history or personal storytelling should look like, leading to response bias (Wang & Ross, 2005). Consequently, distinguishing true from false allegations of rape in a cross-cultural context might be challenging. Using detail to assess the credibility of a rape victim's account in cross-cultural settings may lead to overlooking allegations of true abuse and wrongly accusing them of false allegations. Thus, findings from this programme of research provides valuable insight for the investigation of rape allegations in cross-cultural contexts. It would be necessary for future research to explore the evaluation of true and false rape claims in cross-cultural settings.

**Assessing credibility in asylum seeker contexts.** The accounts provided by asylum seekers are an important piece of evidence in asylum decision making (Jobson, 2009; Van Veldhuizen, Horselenberg, Landström, Granhag, & Van Koppen, 2017). Individuals fleeing persecution and seeking asylum are interviewed about many aspects of their lives and previous experiences, and decisions on their asylum claims may be made on the basis of these interviews (Herlihy, Jobson, & Turner, 2012). Among the evidence gathered in such interviews are their memory reports pertaining to descriptions about certain landmarks in the village or country of origin (Van Veldhuizen et al., 2018). One of the markers of credibility in such interviews is the level of detail of the information provided. When an applicant's account lacks sufficient detail, he or she may be deemed uncredible (Jobson, 2009). As most migrants are from collectivistic cultures such as Africa and Asia (Birman & Simon, 2013;

United Nations Population Division, 2019), many migrants may not be spontaneously explicit in their reports about their experience. As a result, genuine asylum seekers are at risk of being denied asylum on the basis that they do not meet the (culturally insensitive) credibility indicator.

Findings reported in this thesis provide evidence of the need to reconsider detail provision as an indicator in assessing credibility in asylum seeker contexts. At the very least, it would be necessary to develop effective interview strategies that facilitate detailed information provision in asylum seeker contexts. It has been suggested that immigration officials should adopt interview strategies that would enable asylum seekers to provide elaborate details (Jobson, 2009; Van Veldhuizen, Horselenberg, Landström, Granhag, & Van Koppen, 2017). Indeed, strategies to enhance elaborate memory reports in asylum seeker and other cross-cultural settings are needed. Future research should examine culturally sensitive techniques for eliciting information in cross-cultural contexts.

**Memory elicitation and power distance.** It may be necessary to give considerations to an interviewees' perceived power distance when eliciting memory reports in cross-cultural settings. The current findings seem to suggest that perceived authority may impede eyewitness memory reports of witnesses with collectivistic cultural background. Mock witnesses with collectivistic orientation seemed to perceive high PD in social relationships than mock witnesses with individualistic cultural orientation. Unsurprisingly, the results also showed whereas reporting to police detectives enhances information provision among witnesses from individualistic cultures, reporting to authority seems to impede information provision among witnesses from collectivistic cultures. Hence, interviewing strategies to enhance detailed provision in cross-cultural settings may need to take the cultural factor of power distance into account. In fact, it has been argued that best practices in police interviews

may be compromised when that cultural factor (power distance) is not taken into consideration (Sumampouw, Otgaar, La Rooy, & De Ruiter, 2020).

When interviewing witnesses from high PD cultures, it may be necessary for interviewers to use techniques that seek to minimise any power imbalance to enhance information elicitation. Effective rapport building may help minimise the impact of authority in eliciting eyewitness memory reports. When an effective rapport is developed, an atmosphere may be created where free and spontaneous communication is facilitated. This calls for an understanding of the best ways of building a friendly and effective rapport with interviewees with high PD cultural backgrounds. It has been argued that investigators need to be sensitive to cultural differences in establishing effective rapport (Evans, Meissner, Brandon, Russano, & Kleinman, 2010). Insight into culturally specific rapport building strategies may prove valuable in eliciting information in law enforcement and counter-terrorism contexts. It has been noted that in cross-cultural contexts, establishing an effective rapport may yield substantial response from the interviewee (Van Veldhuizen, 2018). Accordingly, it has been recommended for interrogators to be trained in building effective rapport with interviewees from different cultures (Kleinman, 2006). However, there is a paucity of research on effective ways of establishing rapport with interviewees with a high PD cultural background. Therefore, future research examining how rapport building impacts information elicitation across cultures would be a step in the right direction.

**Adapting current best practices for a wider cultural audience.** To enhance information retrieval in cross-cultural contexts, it may be helpful to pilot retrieval enhancing techniques in other cultures, particularly as many so-called ‘best practice’ interviewing protocols were developed in western contexts (Fisher, Geiselman, & Amador, 1989; Geiselman, 2012). As cognitive processes are not universal, piloting the interviewing

protocols in other cultures would be beneficial. Recent research has already begun examining the effectiveness of the Cognitive Interview (CI) in collectivistic samples. For example, the CI was piloted to examine its utility among Arab children (El Asam & Samara, 2015). It was found that the CI (compared with the Standard Interview) is effective in enhancing correct recall and reducing suggestive influences among the Arab sample. The authors indicate that although the Arab children provided generic reports when asked to report everything (free recall), they were able to provide elaborate and more specific details when they were carefully prompted and questioned. Thus, interview prompts that encourage witnesses to report as many details as possible may enhance detailed provision, especially for witnesses with a collectivistic cultural background. For example, the report everything phase of the CI asks witnesses to report every detail they remember, no matter how insignificant that might seem. With such prompt, a tendency to underreport details can be minimized. Specifically, and consistent with the notion of ‘transfer of control’ within the CI, it would also be beneficial for the interviewer to emphasise to the interviewee, right from the onset of the interview, that he or she (interviewer) was not there when the incident occurred so the interviewee should provide an elaborate report as possible.

It may also be helpful for interviewing techniques in cross-cultural contexts to set expectations for the level of completeness. This tactic may be helpful because the underreporting of details by collectivistic culture mock witnesses seem to suggest different expectations of detail completeness across cultures. Indeed, previous work has shown that the model for memory reporting across cultures may differ (Wang & Ross, 2005). It is likely that in the investigative interview context, an interviewer’s instruction for a witness to ‘report everything’ would yield a response consistent with the witness's expectation of the level of completeness. In that vein, it would be helpful for investigators to be explicit on the level of

detail that is expected from witnesses, especially for witnesses with collectivistic cultural background. That is to enable the interviewees to have a fair idea of what level of detail is expected of them. Future research on interviewing techniques in cross-cultural contexts should examine whether setting the level of detail completeness would enhance elaborate memory reporting.

Future work adapting or developing techniques for a wider cultural context should also consider how best to minimise the effect of suggested or misleading information. While leading questions should always be avoided in investigative interviews, it is especially important in the context of cross-cultural interviews. The findings from this programme of research suggest reporting of misleading post-event information may be more pronounced for individuals with a collectivistic cultural orientation. Hence, investigative interviews in cross-cultural contexts may take into account the need to ask witnesses about the source of their reports. Also, it may be helpful to instruct witnesses from the onset of an interview that the details they report should only be about what they witnessed themselves. Suggestive influences when interviewing witnesses from collectivistic cultures may also be reduced when efforts are made to reduce interviewees' sensitivity to power dynamics during investigative interviews. In Chapters 2 and 5, mock witnesses with collectivistic cultural backgrounds perceived more power distance, where they endorsed hierarchy in social relationships than mock witnesses with an individualistic orientation. This sensitivity may make witnesses with a collectivistic cultural orientation more susceptible to suggestive influence from the investigator. Future research should explore further on cultural differences in susceptibility to suggestive influences from authority figures.

### **Methodological challenges in conducting cross-cultural research**



Conducting cross-cultural research comes with its own peculiar challenges. In the current programme of research, participants were sampled from cultures in Western Europe and sub-Saharan Africa to examine cultural differences in eyewitness memory reports. In this section, I share some learning points about challenges involved in conducting cross-cultural research. I also propose solutions for consideration in mitigating some of these challenges inherent in cross-cultural research. As these challenges seem inevitable in research in cross-cultural psychology, sharing these insights and proposed solutions may help improve cross-cultural research in legal psychology.

**Response bias in cross-cultural survey instruments.** One of the methodological challenges in conducting cross-cultural research has to do with the issue of measurement in cross-cultural surveys. Such surveys usually involve asking participants to provide self-reports about a psychological or attitudinal construct (e.g., individualism, self-construal). Patterns of responding across cultures might differ, hence, the possibility of culturally biased response styles. Response styles that have been identified to compromise the validity of cross-cultural surveys include Acquiescence Response Style (ARS), Extreme Response Style (ERS), and Social Desirability Responding (SDR) (Baumgartner & Steenkamp, 2001; Johnson, Kulesa, Cho, & Shavitt, 2005; Krautz & Hoffmann, 2019). Acquiescence response style is the tendency of survey respondents to give upper limit responses when responding to a questionnaire (Kemmelmeier, 2016). ARS, thus, reflects a tendency to mostly agree to items on a questionnaire, rather than a response that reflects a true personally held opinion. Quite similar to ARS, ERS is the tendency to use middle ratings less and overuse either ends of a Likert scale (e.g., *totally agree* or *totally disagree*; Morren, Gelissen, & Vermunt, 2012). Besides ARS and ERS, Social Desirability Responding (SDR) can bias responses on cross-

cultural surveys. SDR is the tendency for survey responders to create a particular impression of themselves that may not necessarily be consistent with reality (Kemmelmeier, 2016).

These biases in responding have been shown to be culturally grounded and may confound cross-cultural comparisons in research (Bou Malham & Saucier, 2016; Middleton & Jones, 2000). For example, it has been shown that ERS, ARS, and SDR mostly tend to be stronger among a collectivistic than among an individualistic sample (Johnson et al., 2005). (Hofstede, 2011; Hofstede et al., 2010; Minkov et al., 2017). It has been suggested that one way of keeping ARS and ERS in check is using both reverse coded and positively coded items when constructing the survey instrument (Baumgartner & Steenkamp, 2001). It has also been proposed that SDR may be fixed by using measures that specifically access SDR in order to control for it in subsequent analysis (Domínguez Espinosa & Van De Vijver, 2014; Kemmelmeier, 2016). In hindsight, these measures to minimise culturally biased responding could have been factored into the survey for the current programme of research. Thus, to mitigate the challenge of culturally grounded responding patterns, future cross-cultural surveys should consider some of the recommended approaches.

**Normative sample of scale.** Another major challenge in conducting cross-cultural research is that some of the scales developed for cross-cultural surveys were developed with samples different from the population for the research. As a result, there could be differences in characteristics between the normative sample used in developing the scale and the study sample of interest. In fact, others have expressed concern about the use of measures of cultural orientation developed in non-African contexts for research in Africa, arguing such measures may have low psychometric properties (Pirttilä-Backman et al., 2004). The normative sample used in developing the cultural orientation scale by Triandis and Gelfand (1998), for example, were East Asian and American samples. While there may be similarities

to a large extent between East Asian and sub-Saharan African collectivism, there may be peculiarities to the respective collectivistic cultures. Indeed others have argued the possibility for different versions of collectivism to exist in the respective contexts (Adams & Dzokoto, 2003; Triandis, 2001; Triandis & Gelfand, 1998). Hence, items on measures of cultural orientation and other attitudinal measures might be context-sensitive. For instance, it has been argued that while the inter-correlations of the cultural orientation sub-scale are theoretically and conceptually sensible when used with an African sample, the items might not cover other topics or content domains needed to tap into African collectivism (Pirttilä-Backman et al., 2004). Because such scales were developed in different contexts, it could also be that when used in other contexts, participants may not comprehend some of the items or expressions used on the scale.

It is also worth noting that previous work shows the cultural orientation scale (Triandis & Gelfand, 1998) sometimes yields unexpected ratings, inconsistent with the country scores. For example, research on national cultures shows Switzerland is high on individualism (Country score of +105), whereas South Africa is low (Country score of -105; Minkov et al., 2017). However, in a study validating Triandis and Gelfand's (1998) cultural orientation scale in those two countries, participants from South Africa gave higher ratings on both individualism and collectivism than participants from Switzerland (Györkös et al., 2013).<sup>14</sup> Even though that study only sought to validate the scale in the respective countries without necessarily making cross-cultural comparisons, the observed differences in mean individualism and collectivism when making cross-cultural comparisons show possible lapses

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<sup>14</sup> The two countries significantly differed in their mean scores on individualism (Switzerland –  $n = 585$ ,  $M = 45.50$ ,  $SD = 9.49$ ; South Africa –  $n = 818$ ,  $M = 48.53$ ,  $SD = 10.37$ ) and collectivism (Switzerland –  $n = 585$ ,  $M = 55.97$ ,  $SD = 7.20$ ; South Africa –  $n = 818$ ,  $M = 57.15$ ,  $SD = 9.87$ ). An independent t-test analysis based on these means showed participants from South Africa scored significantly higher on individualism than participants from Switzerland,  $t(1401) = 5.59$ ,  $p < .001$ ,  $d = .30$ . South Africa also scored significantly higher on collectivism than Switzerland,  $t(1501) = 2.46$ ,  $p = .01$ ,  $d = .14$ .

in the use of the scale for cross-cultural surveys (Fiske, 2002). In the current programme of research, I found a pattern similar to the data reported by Györkös et al. (2013), as sub-Saharan Africans in this programme of research gave higher ratings for both individualism and collectivism compared to western Europeans. The higher ratings by the African participants on self-reported individualism and collectivism may also reflect response bias, as argued above. I recommend future studies use other scales on cultural orientation validated for making cross-cultural comparisons. It would also be necessary for future work to develop a scale for a particular context tapping into the cultural orientation of that context. That would help make such measures context-sensitive and cover content domains relevant for tapping into the cultural orientation of interest. It may also help address the potential problem of comprehending items on the scale.

**Language and meaning.** Language is another methodological challenge in the conduct of cross-cultural research. That is especially so if the comparison groups are not proficient in a common language, for which reason the study has to be conducted in different languages. In such situations, translation into a common language may lead to a loss of intended meaning or relevant details. It could even be that coding details in the respective languages might lead to disparities across groups and results might be confounded. In the experiments reported in this thesis, mock witnesses across cultures were proficient in English, which was the mode of instruction in the study. The official language in Ghana is English and is the medium of instruction and communication, from primary to tertiary level. Nevertheless, in Experiment 1 where a few of the rural Ghanaian sample had limited comprehension of English, I engaged the service of a linguist who is a doctoral-level student and an expert in the local language to help with translation. Also, a bilingual research assistant who is indigenous to the locality translated the responses of those rural participants into English for coding. While these approaches may not be entirely adequate in ruling out language

confound, they are very important steps adopted in this programme of research in addressing language challenges. Future cross-cultural research might use such an approach in handling language challenges.

Another approach to mitigating language challenge that future cross-cultural research might consider is cross-translations. An example of such an approach was used in research that examined the context-sensitivity of Japanese and Americans (Masuda & Nisbett, 2001). Responses in that research were in the English language for American participants and Japanese language for Japanese participants. Two bilinguals translated the American (English language) data into the Japanese language, and then the Japanese (Japanese language) data were also translated into the English language. A bilingual Japanese and American then independently checked for the correspondence of these translations to the original languages. With regards to coding, two English coders coded the Japanese data that were translated into English language and the American (English) data. Two Japanese coders also coded the English data that were translated into Japanese and the Japanese data. Thus for each language, coding is done in both the original language and for the translated version by different coders proficient in the respective languages. In that way, the researchers can assess the level of agreement not just across coders but across language versions.

**Demographic differences in rural and urban samples.** Due to rural-urban migration in collectivistic cultures, the population in rural areas tends to be relatively older than the urban areas. That means in cross-cultural comparisons involving a rural sample, there is the likelihood that the sample would be relatively older and less educated than the urban collectivistic as well as individualistic cultural sample. Indeed, that is one of the limitations discussed in Chapter 2 which involved a comparison between rural collectivistic and urban collectivistic samples. That challenge may be most likely when the research

involves a student sample, as they tend to be relatively younger. Hence, cross-cultural research focusing on the general population may be one of the ways of mitigating this challenge. Another approach could also be carefully matching samples across rural and urban populations in such research.

## **Conclusion**

In this programme of research, I examined whether there are cultural differences in the content of eyewitness memory reports. Based on the self-construal theory, I sampled mock witnesses from collectivistic (sub-Saharan Africa) and individualistic (Western Europe) cultures and compared their memory reports, after exposure to mock crime events. Across experiments, I found evidence that the cultural background of witnesses may shape the content of their eyewitness memory reports. For example, in all four experiments, the results show that witnesses with a collectivistic cultural orientation are more prone to underreport details in their reports from memory about witnessed events than witnesses with an individualistic cultural orientation. This consistent finding provides a direction for future research on how best to elicit eyewitness memory reports in cross-cultural contexts. Overall, the programme of research reveals marked cultural differences in eyewitness memory reports and highlights some important implications for investigative interviews in law enforcement and other cross-cultural settings. This contribution to the literature is important in light of the increasing likelihood that investigative and legal professionals will interview witnesses with a cultural background different from theirs. Hence, the findings provide valuable insights into investigative interviewing of witnesses in cross-cultural contexts. It is, therefore, crucial that practitioners are trained to be sensitive to cultural issues in the elicitation of memory reports. Without sufficient training, interviewees may be misunderstood or efforts at eliciting memory

reports may be impeded. Cultural issues must be incorporated into training modules for investigators and legal professionals working in cross-cultural contexts. Meanwhile future research must adapt interviewing protocols for a wider cultural context.

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**List of Appendices**

Appendix 1: Supplementary materials (Chapters 2 and 3)

Appendix 2: Supplementary materials (Chapter 4)

Appendix 3 Supplementary materials (Chapter 5)

**Appendix 1: Supplementary materials (Chapters 2 and 3)**

**Stimuli**

<p><b>Stimuli A (Dutch scene)</b></p>	<p><b>Stimuli E (Dutch scene)</b></p>
	
<p><b>Stimuli B (Ghanaian scene)</b></p>	<p><b>Stimuli F (Ghanaian scene)</b></p>
	
<p><b>Stimuli C (Dutch scene)</b></p>	<p><b>Stimuli G (Dutch scene)</b></p>



**Stimuli D (Ghanaian scene)**



**Stimuli H (Ghanaian scene)**



**Interview Questions**

**Free and cued recall questions about Stimulus A**

***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

***Cued Recall***

1. What clothes was the man wearing?
2. Who was visible at the scene apart from the man and the woman (victim)?
3. What was the man doing?
4. Who was looking at the direction of the man and woman (victim)?
5. Where was the man looking?
6. Can you describe the colour of the building where the incident occurred?
7. What was the woman holding?
8. What numbers did you notice written inside the building?
9. Which part/ side of the item was she (victim) holding?
10. What was the man in the wheelchair holding?
11. With which hand was the woman victim holding the item?
12. What clothes was the man in the wheelchair wearing?
13. Describe the woman's (victim) hair?
14. What did you notice behind the man in the wheelchair?
15. What colour earring was the woman victim wearing?
16. What was written at the top of the board behind the woman (victim)?
17. What footwear was the woman (victim) wearing?
18. Where was the tree inside the building located?
19. What clothes was the woman victim wearing?

20. How many people were on the billboard or pull-up flier that stood at the left side of the scene?

### **Free and cued recall questions about stimulus B**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. How many cars in all did you notice at the car park?
2. What was the colour of the car the man was standing by?
3. What was the colour of the roof of the building by the trees?
4. What was the man doing?
5. What colour was the car next to the one the man was standing by?
6. Which of his hands had held the door of the car?
7. On which side of the scene were the people at the background located?
8. Describe the footwear the man was wearing?
9. What were the people at the background doing?
10. What did the man wear on his hand?
11. What colour(s) were the writings on the small boards at the car park?
12. On which side of the car was the man standing?
13. What colour was the building on the left side?



14. Which side of the car did you notice some dirt?
15. What colour was the building on the right side?
16. Describe the clothes the man was wearing?
17. Where was the dustbin located?
18. Describe any facial feature of the man.
19. Where was the bird at the scene standing?
20. What colour was the side mirror of the car the man was standing by?

### **Free and cued recall questions about stimulus C**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. Describe the footwear the woman was wearing?
2. Where was the plant (weed/ hedge) on the background located?
3. How many stripes did you see on the woman's right footwear?
4. How many people were on the background (apart from the woman)?
5. What clothes was the woman (victim) wearing?
6. What colour was the motorcycle?
7. Describe the woman's (victim) position on the floor?

8. What clothes was the man walking on the right side of the street wearing?
9. What was written (text) on the rear/ back window of the car?
10. What colour was the window frames of the second building on the right?
11. What was the number of the car next to the victim?
12. What image(s)/ sign was on the traffic/ road sign on the right?
13. With what colour was the number of the car written?
14. How many cars were on the background (apart from the car by the victim)?
15. What colour was the car by the woman victim?
16. Where were the bicycles parked?
17. What was written under the left red light of the car?
18. What was the colour of the pole located beside the victim?
19. Describe the woman's (victim) hair.
20. What colour was the first building on your right?

### **Free and cued recall questions about stimulus D**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene (anything you saw on the picture) to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. What was on the window at the scene?
2. What was the man wearing on his hands?

3. What did you see beneath/ below the window?
4. Describe the footwear the man was wearing?
5. What was on the door behind the woman?
6. What was the man doing?
7. Where was the fridge located?
8. What clothes was the man wearing?
9. What was the colour of the fridge?
10. What was the woman doing with her hands?
11. What was written on the fridge?
12. Describe the footwear the woman was wearing?
13. What did you see behind the man?
14. Describe the woman's hair?
15. On which side of the scene was the TV located?
16. What colour was the writing (text) on the woman's clothe?
17. What was on the TV screen?
18. On which part of the man's body was the woman holding?
19. Describe what the woman was seated on?
20. What was the colour of the TV stand?

### **Free and cued recall questions about stimulus E**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.



Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

***Cued Recall***

1. What clothes was the man wearing?
2. What colour was the car next to the one the man was standing beside?
3. Describe the footwear the man was wearing?
4. What was in front of the car the man was standing beside?
5. What was the colour of the car the man was standing by?
6. How many cars were at the carpark?
7. What was the car number of the car the man was standing by?
8. Where was the lamp stand located?
9. What colours were on the number plate of the car (the one the man was standing beside)?
10. What colour was the pole of the lamp (stand)?
11. What was the man doing?
12. What colour was the building at the scene?
13. Describe the hair of the man.
14. What colour was the window frame of the building at the scene?
15. What was written on the car, apart from the car number?
16. What was the colour of the third car?
17. On which side of the car was the man standing?
18. What colour was the poles of the bicycle shed?

19. What was the man wearing on his left hand?
20. Describe the roof of the bicycle shed.

### **Free and cued recall questions about stimulus F**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. What was the name of the shop the nun was facing?
2. What was the woman (victim) seated on?
3. Who stood in front of the shop the nun was headed?
4. Describe the footwear the woman (victim) was wearing?
5. What was the colour of the shirt of the little boy at the scene?
6. Which of the legs of the woman (victim) had been raised?
7. What was the little boy doing?
8. What was the woman (victim) holding?
9. What was the colour of the little boy's footwear?
10. Describe the footwear the man (suspect) was wearing?
11. Who was beside the little boy?
12. What clothes was the woman (victim) wearing

13. How many people were in front of the shop behind the woman (victim)?
14. What was the man doing?
15. What is the name of the shop behind the woman (victim)?
16. What clothes was the man wearing?
17. What did you see on the platform beside the little boy?
18. Which side of the woman's (victim) item had the man held?
19. How many people were in front of the second shop on your left?
20. What jewellery was the woman (victim) wearing?

### **Free and cued recall questions about stimulus G**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. What was the man who was standing next to the woman doing?
2. What was written (text) above the door on the right?
3. What clothes was he (suspect) wearing?
4. What musical instrument(s) did you see?
5. What colour was his (suspect) belt?
6. How many people were at the scene (apart from the suspect and the victim)?

7. What colour was his (suspect) watch?
8. Where were the people at the scene standing?
9. What clothes was the woman (victim) wearing?
10. What were the people at the background doing?
11. What was the colour of the woman (victim's) footwear?
12. Where was the telephone on the background located?
13. Where was the woman's (victim) right hand placed/positioned?
14. What colour was the telephone on the background?
15. Where was the woman's (victim) left hand placed/ positioned?
16. How many doors did you notice at the scene?
17. Describe what the woman was seated on.
18. What colours did the chairs have?
19. Describe the woman's hair.
20. How were the people on the background dressed?

### **Free and cued recall questions about stimulus H**

#### ***Free Recall***

Your task is to describe what you saw in the photograph. Imagine that you are being asked to report about the scene to the police and that any details you give about the scene you saw is important.

Provide as much information as you can in your own words. Try to be as accurate and detailed as possible.

You have 6 minutes to complete this task. If you finish your report before 6 minutes have elapsed, you still can use the time to remember and report about what you saw.

#### ***Cued Recall***

1. Where was the street light located?

2. Describe how the woman (victim) was lying on the floor?
3. Where was the wall located?
4. On which side of the car was the woman lying?
5. What was the colour of the wall of the building?
6. What was the woman (victim) wearing on her hand?
7. What was the colour of the building?
8. What colour was the item on her hand?
9. How many windows of the building did you see?
10. On which of her hands was she wearing the item?
11. What colour was the window frame of the building?
12. What clothes did she wear?
13. Where was the building located at the scene?
14. Describe the footwear the woman (victim) was wearing?
15. On which side of the building was the window located?
16. What was the colour of the car?
17. How many trees were at the right side of the car?
18. What was the number of the car?
19. Describe the trees on the left side of the car.
20. What colours did you notice on the number plate of the car?

For each of the statements below, indicate the extent to which each is true about yourself or the view you uphold. Your response should range between 1 (Never or definitely no) to 9 (Always or definitely yes)

---

- \_\_\_ 1. I'd rather depend on myself than others.
- \_\_\_ 2. I rely on myself most of the time; I rarely rely on others.
- \_\_\_ 3. I often do "my own thing."
- \_\_\_ 4. My personal identity, independent of others, is very important to me.
- \_\_\_ 5. It is important that I do my job better than others.
- \_\_\_ 6. Winning is everything.
- \_\_\_ 7. Competition is the law of nature.
- \_\_\_ 8. When another person does better than I do, I get tense and aroused.
- \_\_\_ 9. If a coworker gets a prize, I would feel proud.
- \_\_\_ 10. The well-being of my co-workers is important to me.
- \_\_\_ 11. To me, pleasure is spending time with others.
- \_\_\_ 12. I feel good when I cooperate with others.
- \_\_\_ 13. Parents and children must stay together as much as possible.
- \_\_\_ 14. It is my duty to take care of my family, even when I have to sacrifice what I want.
- \_\_\_ 15. Family members should stick together, no matter what sacrifices are required.
- \_\_\_ 16. It is important to me that I respect the decisions made by my groups.

### **Twi translation of interview questions**

#### **Ahwɛdeɛ A**

#### **Kae na ka**

Nea yɛɛhwehwe afiri wo hɔ ne sɛ kyere nea wohui wɔ mfonin no so no. Fa no sɛ yɛɛbisa wo sɛ kyere nea wohui kyereɛ apoliisifoɔ na nea wobɛka biaa afa nea wohui no ho hia yie paa.

Bɔ mmɔden sɛ wobɛka nsem a ɛho hia nyinaa wɔ sɛnea wuhuu no faaye. Yere wo ho ka no sɛnea esii pɛpɛɛpɛ na kyere mu fann.

Wowɔ sima nsia sɛ wode bedi saa dwuma yi. Sɛ wowie ansa na sima nsia a yede ama wo no bi aka, wobɛtumi akɔso akaakae na ɔaka nea wohuuye no.

#### **Nsemmissa ahorɔɔ**

1. Ataadeɛ ben na na papa no (dea yese ɔadi bɔne no) hye?
2. Whan biom na wohuu no wɔ baabi asem no sii no ka papa no ene maame (dea asem ato no no)
3. Den na na papa no (dea yese ɔadi bɔne no) ɛɛye?
4. Whana na na ɔɔhwɛ baabi a na papa no ne maame no (dea asem ato no no) wɔ no?
5. ɛhefa na na papa no (dea yese ɔadi bɔne no) ɛɛhwɛ?
6. So wobɛtumi akyere ɛdan a asem no sii mu/ho no ahosu?
7. Den na na maame no kura?
8. Nɔmɛse ben na wohuu sɛ yeatwerɛ wɔ ɛdan no mu?
9. Nnoɔma (baage) no hefa na na maame no (dea asem ato no no) kura?
10. Den na na papa no a ɔte abubuafoɔ kaa/akonwa no mu no kura?
11. Nsa ben/dea ɛwɔ he na na maame no (dea asem ato no no) de kura nnoɔma no?
12. Ntaadeɛ ben na na papa no a ɔte abubuafoɔ kaa/akonwa no mu no hye?
13. Kyere sɛdea na maame no (dea asem ato no no) tiri nwi tee.
14. Deen na wohuuye wɔ papa no a ɔte abubuafoɔ kaa/akonwa no mu no akyi hɔ?
15. Asomdeɛ a na ɛhye maame no (dea asem ato no no) ahosu ne deen?

16. Dee ben na na wɔatwerɛ wɔ dua a ɛwɔ baabi na maame no (dea asem ato no no) gyina no akyi hɔ no ho no?
17. Mpaboa ben nan a ehyɛ maame no (dea asem ato no no)?
18. Ehefa na na dua a na ɛfie/ɛdan no mu hɔ no si?
19. Ntaadeɛ ben na na maame no hyɛ?
20. Nnipa dodoɔ ahe na na wɔwɔ beebɔdo a na esi benkum so hɔ no so?

### **Ahwɛdeɛ B**

#### **Kae na ka**

Nea yɛɛhwehwe afiri wo hɔ ne se kyere nea wohui wɔ mfonin no so no.. Fa no se yɛɛbisa wo se kyere nea wohui kyereɛ apoliisifoɔ na nea wobɛka biao afa nea wohui no ho hia yie paa.

Bɔ mmɔden se wobɛka nsem a eho hia nyinaa wɔ senea wuhuu no faaye. Yere wo ho ka no senea esii pɛpɛpɛ na kyere mu fann.

Wowɔ sima nsia se wode bedi saa dwuma yi. Se wowie ansa na sima nsia a yede ama wo no bi aka, wobetumi akɔso akaakae na ɔaka nea wohuuyɛ no.

#### **Nsemmissa ahorɔɔ**

1. Alɔɔre/kaa dodoɔ ahe na wohuuyɛ wɔ baabi yɛpaake kaa no?
2. Kaa no a na papa no gyina ho no ahosu te sen?
3. ɛdan a na yɛabɔso no a na dua no si ho no nkyensen no ahosu te sen?
4. Deen na na papa no (dea yɛse ɔadi bɔne no) ɛɛyɛ?
5. Kaa no a na esi dea na papa no gyina ho no ahosu te sen?
6. Ne nsa mu dea ehe nan a aso kaa no geeti no mu no?
7. Ehefa nan nipa a na wogyinagyina hɔ no wɔ no?
8. Kyere mpaboa ko a na papa no (dea yɛse ɔadi bɔne no) hyɛ no.
9. Deen nan a nnipa a wogyinagyina hɔ no eeye?
10. Deen na na ɛbɔ papa no (dea yɛse ɔadi bɔne no) nsa no?
11. Ntwereyɛ a na ɛwɔ nnua nketewa no ho no ahosu/kɔla te sen?
12. Kaa no hefa na na papa no (dea yɛse ɔadi bɔne no) no gyina no?
13. ɛdan a na ɛwɔ benkum so hɔ no ahosu/kɔla te sen?



14. Kaa no ho hefa na wohuuyɛ sɛ efi wɔ hɔ?
15. Ɖdan a na ɛwɔ nifa so hɔ no ahosu/kɔla te sɛn?
16. Kyerɛ ntaade ko a na papa no (dea yɛsɛ ɔadi bɔne no) hyɛ.
17. Ɖhefa nan a bɔɔla kyɛnsɛn no si no?
18. Kyerɛ nea wokae wɔ papa no anim.
19. Ɖhefa na na anomaa a ɔwɔ hɔ no si?
20. Ahwehwɛ a na papa no gyina ho no ahosu/kɔla te sɛn?

### **Ahwɛdɛɛ D**

#### **Kae na ka**

Nea yɛɛhwɛhwɛ afiri wo hɔ ne sɛ kyɛrɛ nea wohui wɔ mfonin no so no. Fa no sɛ yɛɛbisa wo sɛ kyɛrɛ nea wohui kyɛrɛɛ apoliisifoɔ na nea wobɛka biaa afa nea wohui no ho hia yie paa.

Bɔ mmɔden sɛ wobɛka nsɛm a ɛho hia nyinaa wɔ sɛnea wuhuu no faayɛ. Yere wo ho ka no sɛnea esii pɛpɛɛpɛ na kyɛrɛ mu fann.

Wowɔ sima nsia sɛ wode bedi saa dwuma yi. Sɛ wowie ansa na sima nsia a yɛde ama wo no bi aka, wobɛtumi akɔso akaakae na ɔaka nea wohuuyɛ no.

#### **Nsɛmmisa ahorɔɔ**

1. Kyɛrɛ mpaboa ko a na maame no hyɛ no.
2. Ɖhefa na na nwura/mfrawese a na ɛwɔ akyiri hɔ no wɔ?
3. Nsɛnsanyɛ dodoɔ ahe na wohuuyɛ wɔ maame no nan nifa mpaboa no so no?
4. Sɛ woyi maame no firi mu a, nnipa dodoɔ ahe na wohuuyɛ wɔ akyiri hɔ no?
5. Ntaadɛɛ bɛn na na maame no (dea asɛm ato no no) hyɛ?
6. Na motosaekere no ahosu te sɛn?
7. Kyɛrɛ baabi a na maame no (dea asɛm ato no no) wɔ fam hɔ.
8. Ntaadɛɛ bɛn na na papa no a na ɔnam nifa so wɔ ɔkwɛn no mu hɔ no hyɛ?
9. Deen na na wɔatwerɛ wɔ kaa no ahwehwɛ a ɛwɔ akyiri hɔ no so no?
10. Ɖdan a na ɛtɔ so mmienu wɔ nifa so hɔ no mpoma no ahosu/kɔla te sɛn?
11. Kaa no a na ɛwɔ dea asɛm ato no nkyɛn no nɔma yɛ deen?
12. Nfonin anaa ahyɛnsode bɛn na ɛwɔ ɛkwɛn no nifa no so hɔ no?

13. Na wode kɔla ben na atwere kaa no nɔma no?
14. Se woyi dea asem ato no no kaa no firi mu a, alɔre dodoɔ ahe na na ewɔ akyiri ho no?
15. Kaa no a na ewɔ dea asem ato no no nkyen no ahosu/kɔla te sen?
16. Ehefa na na wɔapaake adadempɔnkɔ/abaasekere no?
17. Deen na na wɔatwere wɔ kaa no a na ewɔ benkum so ho no kanea kɔkɔ no ase no?
18. Poolu a na ewɔ na ewɔ dea asem ato no no nkyen ho no ahosu/kɔla te sen?
19. Kyere sɛdea na maame no (dea asem ato no no) tiri nwi tee?
20. Eɔan a na edi kan wɔ nifa so ho no ahosu/kɔla te sen?

### **Ahwɛdeɛ E**

#### **Kae na ka**

Nea yeehwehwe afiri wo ho ne se kyere nea wohui wɔ mfonin no so no. Fa no se yeebisa wo se kyere nea wohuuyɛ (wɔ dea esiye no mu no) kyereɛ apoliisifoɔ na nea wobeka biao afa nea wohui no ho hia yie paa.

Bɔ mmɔden se wobeka nsem a eho hia nyinaa wɔ senea wuhuu no faaye. Yere wo ho ka no senea esii pepepe na kyere mu fann.

Wowɔ sima nsia se wode bedi saa dwuma yi. Se wowie ansa na sima nsia a yede ama wo no bi aka, wobetumi akɔso akaakae na ɔaka nea wohuuyɛ no.

#### **Nsemmissa ahorɔɔ**

1. Den na na ewɔ mpoma no ano wɔ adesuadeɛ no mu no?
2. Edeen nan a ebɔ papa no nsa no?
3. Edeen na wohuuyɛ wɔ mpoma no ase no?
4. Kyere senea na mpaboa na papa no hye no tee.
5. Edeen na na ewɔ epono/geeti a na ewɔ maame no akyi no so no?
6. Edeen na na papa no eeye?
7. Na asukɔtwea adaka/friigi no si no?
8. Ntaadeɛ ben na na papa no hye?
9. Na friigi no ahosu/kɔla te sen?

10. Edeen na na maame no de ne nsa eeyɛ?
11. Edeen na na wɔatwerɛ wɔ friigi no ho no?
12. Kyerɛ mpaboa a na ehyɛ maame no.
13. Edeen ade na wohuuyɛ wɔ papa no akyi no?
14. Kyerɛ sɛdea na maame no (dea asem ato no no) tiri nwi tee.
15. Ehefa na na TV no si wɔ dea wohwɛɛyɛ/wohuuyɛ no mu no?
16. Na wɔde kɔla ben na atwerɛ ntwereyɛ a na ɛwɔ maame no ataadeɛ/ntoma no mu no?
17. Edeen na na wɔɔyi wɔ TV no so no soɔ no?
18. Papa no hefa na na maame no aso no?
19. Kyerɛ nea na maame no te soɔ no?
20. Na adeɛ a yede TV no si so no kɔla te sɛn?

### **Ahwɛdeɛ ɛ**

#### **Kae na ka**

Nea yɛhwehwe afiri wo ho ne sɛ kyere nea wohui wɔ mfonin no so no. Fa no sɛ yɛebisa wo sɛ kyere nea wohuuyɛ kyereɛ apoliisifoɔ na nea wobɛka biaa afa nea wohui no ho hia yie paa.

Bɔ mmɔden sɛ wobɛka nsɛm a eho hia nyinaa wɔ sɛnea wuhuu no faayɛ. Yere wo ho ka no sɛnea esii pepɛɛɛ na kyere mu fann.

Wowɔ sima nsia sɛ wode bedi saa dwuma yi. Sɛ wowie ansa na sima nsia a yede ama wo no bi aka, wobetumi akɔso akaakae na ɔaka nea wohuuyɛ no.

#### **Nsemmissa ahorɔɔ**

1. Ntaadeɛ ben na na papa no hyɛ?
2. Kaa no a na ɛwɔ papa no nkyɛn no ahosu/kɔla te sɛn?
3. Kyerɛ mpaboa a na ehyɛ papa no.
4. Deen na na ɛwɔ kaa a papa no gyina ho no anim no?
5. Kaa no a na papa no gyina ho no ahosu/kɔla te sɛn?
6. Alɔɔre/kaa dodoo ahe na wohuuyɛ wɔ baabi a yɛpaake kaa no?
7. Kaa no a na ɛwɔ papa no nkyɛn no nɔma ye deen?
8. Ehefa na na kanea no dua no si?

9. Kɔla ben na na kaa no nɔma pleti no so no?
10. Na kanea dua no ye kɔla ben?
11. Edeen na na papa no eeye?
12. Na edan a na ewɔ ho no kɔla te sen?
13. Kyere sedea a na papa no tiri nwi tee.
14. Na edan no mpoma no dua no ye kɔla ben wɔ dea wohweeye no mu no?
15. Se woyi kaa no nɔma a wɔatwere wɔ ho no, edeen biom na na wɔatwere wɔ kaa no ho?
16. Na kaa a etɔ so mmiensa no ye kɔla ben?
17. Kaa no fa ben na na papa no gyina no?
18. Baasekere no dan/hyede no nan no ye kɔla ben?
19. Edeen na na ebɔ papa no nsa no?
20. Kyere sedea nea wɔde akuru baasekere no dan no so no tee

### **Ahwede F**

#### **Kae na ka**

Nea yeehwehwe afiri wo ho ne se kyere nea wohui wɔ mfonin no so no. Fa no se yeebisa wo se kyere nea wohuuye wɔ dea esiiye no mu no) kyeree apoliisifoɔ na nea wobeka biala afa nea wohui no ho hia yie paa.

Bɔ mmɔden se wobeka nsem a eho hia nyinaa wɔ senea wuhuu no faaye. Yere wo ho ka no senea esii pepere na kyere mu fann.

Wowɔ sima nsia se wode bedi saa dwuma yi. Se wowie ansa na sima nsia a yede ama wo no bi aka, wobetumi akɔso akaakae na ɔaka nea wohuuye no.

#### **Nsemmissa ahorɔ**

1. Sotɔ a na Roman sista no anim kyere no din de sen?
2. Dee ben so na na maame no (dea asem at no no) tee no?
3. Whan na na ogyina sotɔ a na Roman sista no eekɔ mu no?
4. Kyere mpaboa a na maame no (dea asem at no no) hye no.
5. Ataadee a na ehye akwadaa ketewaa no wɔ dea wohweeye no mu no kɔla ye deen?

6. Maame no (dea asem at no no) nan mu dea ewo he nan a yɛama soɔ no?
7. Na akwadaa no eeye deen?
8. Edeen na na maame (dea asem at no no) no kura no?
9. Na mpaboa a ehye akwadaa ketewaa no kola ye deen?
10. Sen na na mpaboa a na papa no (dea yese ɔaye bone no) hye no tee?
11. Whan na na ogyina abofra ketewa no nkyen?
12. Ntaadee ben na na maame no (dea asem ato no no) hye?
13. Nnipa dodoɔ ahe na na wɔgyina sotoɔ no ano wɔ maame no (dea asem ato no no) akyi no?
14. Deen nan a papa no (dea yese ɔaye bone no) no eeye?
15. Sotoɔ no a ewo maame no (dea asem ato no no) akyi no din de sen?
16. Ntaadee ben na na papa no (dea yese ɔaye bone no) hye no?
17. Edeen na ewo akwadaa ketewaa no nkyen wɔ ho no?
18. Maame no (dea asem ato no no) nnoɔma no hefa na na papa no aso no?
19. Nnipa dodoɔ ahe na na wɔwɔ sotoɔ no anim wɔ wo benkum so no?
20. Agudee ben na na ehye maame no?

## Ahwɛdeɛ G

### Kae na ka

Nea yɛehwehwe afiri wo ho ne se kyere nea wohui wɔ mfonin no so no. Fa no se yɛebisa wo se kyere nea wohuuye (wɔ dea esiiye no mu no) kyereɛ apoliisifoɔ na nea wobɛka biao afa nea wohui no ho hia yie paa.

Bɔ mmɔden se wobɛka nsem a eho hia nyinaa wɔ senea wuhuu no faaye. Yere wo ho ka no senea esii pɛpɛpɛ na kyere mu fann.

Wowo sima nsia se wode bedi saa dwuma yi. Se wowie ansa na sima nsia a yede ama wo no bi aka, wobetumi akɔso akaakae na ɔaka nea wohuuye no.

### Nsemmissa ahorɔɔ

1. Na papa no a ɔgyina maame no nkyen no reye den?
2. Eden nan a wɔatwere agu epon no atifi wɔ ninfa fam no?

3. Eɗen ataadee na na papa (a yɛka ne ho asem no) hye?
4. Nsenku ben na wohuuye no?
5. Na papa (a yɛka ne ho asem no) no belete no ye kola ben?
6. Nnipa ahe na na wɔwɔ faako a bɔne no kɔso no (se woyi nea odii bɔne no ne nea yeyee no bɔne no firi ho aa)?
7. Na papa a odii bɔne no bɔ wɔkye kola ben?
8. Ehe na na nipa a wɔhuu nea ekɔso no gyina?
9. Eɗen ataadee na na maame (a wɔdii no bɔne no) no hye?
10. Eɗen nan a nnipa a wɔwɔ ho no eeyee?
11. Na maame (a yɛka n'asem no) hye mpaboa kola ben?
12. Na ahomatorofoɔ no a ewɔ baabi a asem no siiye no wɔ he pɔtee?
13. Ehe na na maame (a w'adi no bɔne no) nsa ninfa da?
14. Na ahatorofoɔ a ewɔ ho no kola ye den?
15. Ehe nan a maame (a yɛka n'asem no) nsa benkum da?
16. Epon ahe na wohuuye wɔ faako a asem no siiye?
17. Kyerɛkyere adee a na maame no te so no.
18. Na akongua no kola ye den?
19. Kyerɛkyere se dee na maame no ntiri nwi tee?
20. Nnipa a na wɔwɔ faako a asem no siiye no, na ntaadee ben nan a wɔhye?

## Ahwɛdeɛ H

### Kae na ka

Wo dwumadie ne se wobɛkyerɛkyere nea wo hu wɔ mfonin no mu. Susu se woobɔ w'amanee wɔ nea wohuuye no ho akyere poliisini enti nkyerɛkyeremu biara a wode ka ho a ebeboa no, bɔ mmɔden fa ka ho.

Nsem dodoɔ biara a ehohia se wodebeka ho no, fa ka ho. Bɔ mmɔden se wobebɔ w'amanee wɔ pepɛpeye ene nsenhia so.

Wode sima nsia na ebɛdi wodwuma no. Se wotumi wie ansa na wo mmere no aso a, wobetumi de sima a aka no akaekae na w'aka nea wohuuye no nyinaa.

### Nsemmissa ahoroɔ

1. Ehe na kanea a ewo kwan no so no wo?
2. Kyere kwan a na maame (no a asem ato no) no nam so da fam ho?
3. Na mfesene no wo he patee?
4. Na kaa no afa he na na maame no da?
5. Na edan no (mfesene no)ye kola ben?
6. Obaa/Maame (a wowa no) no na eden nan a eda ne nsa?
7. Na edan no ahosuo/kola ye den?
8. Na adee a eda ne nsa no ye kola ben?
9. Edan no mpoma ahe na wohuuye?
10. Na ne nsa ben nan a adee no hye?
11. Na edan no mpoma no dadee no ye kola ben?
12. Ataadee ben na ohyeye?
13. Ehe patee na na edan no si wo faako a asem no sii no?
14. Kyerekyere mpaboa ko a na maame no (a woyee no bone no) hye?
15. Na edan ne fa he na na mpoma no wo?
16. Na kaa no kola ye den?
17. Nnua ahe na na esi kaa no nifa so?
18. Na kaa no noma ye sen?
19. Kyerekyere dua no a esi kaa no benkum so no bobere/bobe.
20. Kola ben na wo hu wo kaa no noma pereti no so?

### **Twi translation of Cultural Orientation Scale (Triandis & Gelfand, 1998)**

Wo nsem a yeatimtim wo ase ho no, kyere sedee esi fa wo ho anaa ese wo nsusuye. Ewo se wo nsusuye efi baako (Daabida) ekosi nkron (Daa anaa nokware torodoo).

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\_\_\_ 1.. Ebeye paa se me de me ho beto me so sen se me de beto afororo so.

\_\_\_ 2. Me taa de me ho to me ho so mpen dodo no aa; eye den paa se mede me ho beto afororo so.

\_\_\_ 3. Me taa ye me aa m'adee.

- \_\_\_ 4. Edin a mɛpɛ ama me ho aa, ɛbɛma me ada nson wɔ afoforɔ mu hia me paa anaa yɛ me adehiadeɛ anaa som me bo paa.
- \_\_\_ 5. Ɛhohia sɛ meadi me dwuma yiye akyɛn memfɛfoɔ/afoforɔ.
- \_\_\_ 6. Nkunidie ɛnɛ/yɛ biibiaa.
- \_\_\_ 7. Akansie yɛ Ɔbɔɔadeɛ nhyehyɛyɛ anaa abrabɔ mu adeɛ.
- \_\_\_ 8. Sɛ me yɔnko/obi bɔ mmɔden sen me a, me yɛ basaa.
- \_\_\_ 9. Sɛ yɛbɔ me yɔnko odwumayɛfoɔ aba so a, m'ani bɛgye ama no.
- \_\_\_ 10. Me yɔnko adwumayɛfoɔ mpuntuo yɛ me adehiadeɛ paa.
- \_\_\_ 11. Me deɛ, me nteaseɛ wɔ anigye ho/mu ne sɛ, me ne afoforɔ ɛɛhwe abɔmu
- \_\_\_ 12. Sɛ mene afoforɔ ntem yɛ aa, me koma tɔ me yam anaa me ho tɔ me/m'ani gye.
- \_\_\_ 13. Sɛ ɛbetumi aa, ɛwɔ sɔ awɔfoɔ ne wɔn mm aka wɔn ho bɔ mu.
- \_\_\_ 14. Ɛyɛ m'asode sɛmɛhwe m'abusuafoɔ yiye, sɛ mpo ɛkɔba no sɛ me yɛ atuhokye koraa.
- \_\_\_ 15. Ɛwɔ sɛ abusua mu nnipa nyinaa kabɔmu a ɛnfa ho ne atuhokye a ɛbɛhia.
- \_\_\_ 16. Ɛyɛ adehiadeɛ ma me sɛ mɛbu adwen a me kuo mu nnipa afa.

**Number of participants that viewed each stimulus (In relation to counterbalancing)**

STIMULUS	GROUP		
	Rural Ghana	Urban Ghana	The Netherlands
Stimulus 1	38	35	25
Stimulus 2	38	35	25
Stimulus 3	38	35	25
Stimulus 4	38	35	25
Stimulus 5	37	35	30



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Stimulus 6	37	35	30
Stimulus 7	37	35	30
Stimulus 8	37	35	30

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### Supplementary analysis on education level (Study 2)

To determine whether the education level of the migrant sampled had an effect on our key dependent variable, we conducted an additional analysis comparing migrants with bachelor's education and those with post-graduate education with respect to the amount of details provided. Although, sub-Saharan African migrants with bachelors education level ( $n = 27$ ,  $M = 29.33$ ,  $SD = 17.76$ ) reported more correct central details than those with postgraduate education level ( $n = 20$ ,  $M = 20.60$ ,  $SD = 9.94$ ), this difference did not reach the threshold for significance,  $t(45) = 1.98$ ,  $p = .054$ ,  $d = .61$ . Among participants from Ghana, those with bachelor's education level ( $n = 54$ ,  $M = 19.20$ ) did not significantly differ from those with postgraduate education level ( $n = 5$ ,  $M = 28$ ) in the number of correct central details reported,  $t(57) = 1.95$ ,  $p = .056$ ,  $d = .84$ . This exploratory analysis suggests it is less likely the education level of participants could have accounted for the difference between Africans in Africa and Africans in Europe.

## Ethical approval



Faculty of Law  
Faculty Board  
Postbus 616  
6200 MD Maastricht

*Ethical Review Committee Inner City*

*Our reference*  
ERCIC\_059\_12\_12\_2017

*Maastricht*  
11 January 2018

Dear Board,

After examination of the research study protocol regarding 'Cultural influences on eyewitness testimony', submitted by Robert Horselenberg, the Ethical Review Committee Inner City faculties (ERCIC) came to the conclusion that there are no objections to the execution of the research project.

Any changes in the research design require a renewed review by the ERCIC.

Yours sincerely,

Prof. W. Bijker  
Chair

Dr. N. Reslow  
Secretary

A handwritten signature in blue ink, appearing to read 'W. Bijker'.

A handwritten signature in blue ink, appearing to read 'N. Reslow'.

CC Robert Horselenberg

**ERCIC**  
Chair: W. Bijker  
Secretary: N. Reslow  
Tel: 043 388 4834  
Email: [ercic@maastrichtuniversity.nl](mailto:ercic@maastrichtuniversity.nl)  
URL: <https://www.maastrichtuniversity.nl/ercic>



**UNIVERSITY OF GHANA**  
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)

*P. O. Box LG 74, Legon, Accra, Ghana*

My Ref. No.....

25<sup>th</sup> January, 2018

Mr. Nkansah Anakwah  
Department of Criminal Law and Criminology  
Maastricht University  
The Netherlands

Dear Mr. Anakwah,

**ECH 103/17-18: CULTURAL INFLUENCES ON EYEWITNESS TESTIMONY**

This is to advise you that the above reference study has been presented to the Ethics Committee for the Humanities for an expedited review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date: 24/01/19  
On Agenda for: Initial Submission  
Date of Submission: 25/01/18  
ECH Action: Approved  
Reporting: Bi-Annually



Please accept my congratulations.

Yours Sincerely,

  
Rev. Prof. J. O. Y. Mante  
ECH Chair

CC: Dr. Margaret Amankwah-Poku, Department of Psychology, University of Ghana.

**Appendix 2: Supplementary materials (Chapter 3)****Free recall**

Your task is to provide information about what you saw in the video event, in your own words. Please be as accurate and detailed as possible and avoid guessing. You have five minutes to provide your account. When you finish before time has elapsed you can still use the remaining time to report what you saw.

**Recognition test**

Please provide the answer to the following. Your response to all questions should be based on what you saw in the video you just watched.

1. The courier stole a ..... from the office
  - a. Yellow-coloured laptop
  - b. Blue-coloured laptop
  - c. Grey-coloured laptop
  - d. I don't know
2. The courier was wearing a .....
  - a. Brown jacket
  - b. Black jacket
  - c. Blue jacket
  - d. I don't Know
3. When the courier entered the office
  - a. She shook hands with the office employee
  - b. She removed her helmet
  - c. She did not shake hands with the office employee
  - d. I don't know
4. As the office employee signed for the parcel
  - a. The courier brought out her mobile phone
  - b. The courier removed her helmet
  - c. The courier looked on
  - d. I don't know
5. What was the colour of the desk in the office?
  - a. Black
  - b. White
  - c. Brown
  - d. I don't know
6. The woman the courier crashed into was holding
  - a. Green shopping bag

- b. Yellow shopping bag
  - c. Blue shopping bag
  - d. I don't know
7. When the courier was running away she first run pass...
- a. A man wearing a cap
  - b. A woman wearing black cloth
  - c. Two school children
  - d. I don't know
8. What was beside the entrance to the travel agency
- a. Cat
  - b. Bicycle
  - c. Dog
  - d. I don't know
9. The name of the travel agency was .....
- a. RKT Travel
  - b. AKT Travel
  - c. ATR Travel
  - d. I Don't Know
10. The courier was wearing a .....
- a. Green helmet
  - b. Red helmet
  - c. Black helmet
  - d. I don't know
11. When the courier got out of the office, standing across the street were ..... who were looking towards the office.
- a. 2 men
  - b. A man and a woman
  - c. 2 women
  - d. I Don't Know
12. The courier threw the helmet .....
- a. In a dustbin
  - b. In a garden
  - c. On the pavement of the street
  - d. I Don't Know

Post-event narrative 1

**BBC** Sign in News Sport Weather Shop Reel Travel More Search

**NEWS**

Home Video World **UK** Business Tech Science Stories Entertainment & Arts Health World News TV More

England Local News Regions **Northampton**

### Police investigation into Theft at Travel Centre

Police have begun investigations into a theft that occurred at AKT Travel. CCTV footage released on Monday shows a courier walking towards the travel agency, AKT Travel, at about 3:00pm last Friday afternoon. She was wearing a brown jacket and a black helmet. Upon arriving at the entrance, she pressed the doorbell and waited for a response. Just beside the entrance was a bicycle. After a few moments, the office door was opened and the courier entered the building.

The travel agency secretary was seated at a black desk near the door when the courier entered the office. The courier delivered a parcel to the secretary. As the secretary signed for the parcel, the courier was seen pulling out her mobile phone. After signing for the parcel, the secretary went to fetch a glass of water for the courier in another room. While she was gone, the courier took a grey-coloured laptop off the desk and quickly left the office.

When she returned with the glass of water, the secretary realised the courier had stolen the laptop. She quickly sounded an alarm as she followed the courier out of the building. When she realised that the secretary was chasing her, the courier started running. She first ran past two school children. As she continued to run, she bumped into a woman who was carrying two yellow shopping bags. When the courier bumped into her, the shopping bags fell on the ground. Her identity remains unknown as she was wearing a helmet.

The stolen laptop contained the personal information, including financial and passport details, of thousands of previous customers of AKT Travel and is the latest in a series of serious data security breaches in the city.

Police have appealed to the public to volunteer any information that could lead to the arrest of the perpetrator.

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### Police investigation into Theft at Travel Centre

Police has begun investigations into a theft that occurred at AKT Travel. CCTV footage released on Monday shows a courier walking towards the travel agency, AKT travel, at about 3:00pm last Friday afternoon. She was wearing a black jacket and black helmet. Upon arriving at the entrance, she pressed the doorbell and waited for a response. Just beside the entrance was a dog. After a few moments, the office door was opened and the courier entered the building.

The secretary was seated at a white desk near the door when the courier entered the office. When she entered, the courier shook hands with the office employee and delivered the parcel to her. The courier looked on as the secretary signed for the parcel. After signing for the parcel, the secretary went to fetch a glass of water for the courier in another room. While she was gone, the courier took a blue-coloured laptop on the desk and quickly left the office.

When she returned with the glass of water, the secretary realised the courier had stolen the laptop. She quickly sounded an alarm as she followed the courier out of the building. When she realised that the secretary was chasing her, the courier started running. She first ran past a woman wearing black clothes. As she continued to run, she bumped into a woman who was carrying two green shopping bags. When the courier bumped into her, the shopping bags fell on the ground but she kept running until she could not be traced. Her identity remains unknown as she was wearing a helmet.

The stolen laptop contained the personal information, including financial and passport details, of thousands of previous customers of AKT Travel and is the latest in a series of serious data security breaches in the city.

Police have appealed to the general public to volunteer any information that could facilitate the arrest of the perpetrator.

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Features



'Killed by injustice' of a British Somali



The one thing that makes times more likely to



## Ethical approval



Faculty of Law  
Faculty Board  
Postbus 616  
6200 MD Maastricht

*Ethical Review Committee Inner City Faculties*

*Our reference*  
ERCIC\_091\_11\_07\_2018

*Maastricht*  
27 August 2018

Dear Board,

After examination of the research study protocol entitled 'Cultural influences on eyewitness testimony: The misinformation effect', submitted by Robert Horselenberg, the Ethical Review Committee Inner City faculties (ERCIC) came to the conclusion that there are no objections to the execution of the research project.

Any changes in the research design require a renewed review by ERCIC.

Yours sincerely,

Prof. Wiebe Bijker  
Chair

A handwritten signature in blue ink, appearing to read 'W. Bijker'.

Dr. Natasja Reslow  
Secretary

A handwritten signature in blue ink, appearing to read 'N. Reslow'.

CC Robert Horselenberg; Nkansah Anakwah

**ERCIC**

Chair: W. Bijker  
Secretary: N. Reslow

Tel: 043 388 4834  
Email: [ercic@maastrichtuniversity.nl](mailto:ercic@maastrichtuniversity.nl)  
URL: <https://www.maastrichtuniversity.nl/ercic>





**UNIVERSITY OF GHANA**  
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)

*P. O. Box LG 74, Legon, Accra, Ghana*

My Ref. No.....

24<sup>th</sup> December, 2018

Mr. Nkansah Anakwah  
Department of Criminal Law and Criminology  
Maastricht University  
The Netherlands

Dear Mr. Anakwah,

**ECH 103/17-18: Cultural influences on eyewitness testimony**

This is to advise you that the above reference study has been presented to the Ethics Committee for the Humanities for a full board review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date: 23/12/19  
On Agenda for: Initial Submission  
Date of Submission: 19/09/18  
ECH Action: Approved  
Reporting: Bi-annually

Please accept my congratulations.

Yours Sincerely,

Prof. C. Charles Mate-Kole  
ECH Vice Chair

Cc: Prof. Joseph Osafo, Head of Department, Psychology, UG  
Dr. Margaret Amankwa-Poku, Department of Psychology, UG







**Cued Recall (Police Condition)**

After reporting the incident you just recounted, **THE DETECTIVE FROM THE LOCAL POLICE** has some specific questions to ask you about the incident. Again, you should provide as many details as you can. Try to be as accurate and detailed as possible in your responses to each question. Please do not guess. If you do not know the answer to a question, kindly indicate as such.

1. What was the courier wearing?

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---

2. What items were on the employee's desk?

---

---

---

3. What was across the street as the courier exited the office?

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---

4. Who bypassed the courier when she exited the office?

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---

---

5. What was the office employee (receptionist) wearing?

---

---

---

6. What did the office employee (receptionist) do when she realized she could not apprehend the courier?

---

---

---





**Peer condition (Cued Recall)**

After reporting the incident you just recounted, **YOUR FRIEND** has some specific questions to ask you about the incident. Again, you should provide as many details as you can. Try to be as accurate and detailed as possible in your responses to each question. Please do not guess. If you do not know the answer to a question, kindly indicate as such.

1. What was the courier wearing?

---

---

---

2. What items were on the employee's desk?

---

---

---

3. What was across the street as the courier exited the office?

---

---

---

4. Who bypassed the courier when she exited the office?

---

---

---

5. What was the office employee (receptionist) wearing?

---

---

---

6. What did the office employee (receptionist) do when she realized she could not apprehend the courier?

---

---

---





**Power and inequality dimensions**

For each of the statements below, indicate with an X the extent to which each statement is true about yourself or the view you uphold. Your response should range between 1 (strongly disagree) to 7 (Strongly agree).

	Strongly disagree						Strongly agree
	1	2	3	4	5	6	7
1. I find it hard to disagree with authority figures.							
2. It is difficult for me to refuse a request if someone senior asks me.							
3. I easily conform to the wishes of someone in a higher position than mine.							
4. I tend to follow orders without asking any questions.							
5. A person's social status reflects his or her place in the society.							
6. It is important for everyone to know their rightful place in the society.							
7. It is difficult to interact with people from different social status than mine.							
8. Unequal treatment for different people is an acceptable way of life for me.							

## Ethical approval



Faculty of Law  
Dean  
Postbus 616  
6200 MD Maastricht

*Ethical Review Committee Inner City Faculties*

*Our reference*  
ERCIC\_125\_28\_02\_2019

*Maastricht*  
27 March 2019

Dear Prof. Smits,

After examination of the research study protocol entitled 'Eyewitness memory reports: The role of the cultural orientation of power distance' and relevant annexes, submitted by Robert Horselenberg, the Ethical Review Committee Inner City faculties (ERCIC) has concluded that there are no ethical objections to the execution of the research project. We advise you to grant ethical approval of this project.

Any changes in the research design require a renewed review by ERCIC.

Yours sincerely,

Prof. Wiebe Bijker  
Chair

Dr. Natasja Reslow  
Secretary

A handwritten signature in blue ink, appearing to read 'W. Bijker', written over a light blue horizontal line.

A handwritten signature in blue ink, appearing to read 'N. Reslow', written over a light blue horizontal line.

CC Robert Horselenberg

**ERCIC**

Chair: W. Bijker  
Secretary: N. Reslow

Tel: 043 388 4834  
Email: [ercic@maastrichtuniversity.nl](mailto:ercic@maastrichtuniversity.nl)  
URL: <https://www.maastrichtuniversity.nl/ercic>



**UNIVERSITY OF GHANA**  
**ETHICS COMMITTEE FOR THE HUMANITIES (ECH)**

**ECH 103/17-18**

Ref. No.:.....

25<sup>th</sup> July, 2019

Mr. Nkansah Anakwah  
Department of Criminal Law and Criminology  
Maastricht University  
The Netherlands

Dear Mr. Anakwah,

**ECH 103/17-18: THE ROLE OF AUTHORITY IN EYEWITNESS MEMORY REPORTS ACROSS CULTURES.**

This is to advise you that the above reference study has been presented to the Ethics Committee for the Humanities for a full board review and the following actions taken subject to the conditions and explanation provided below:

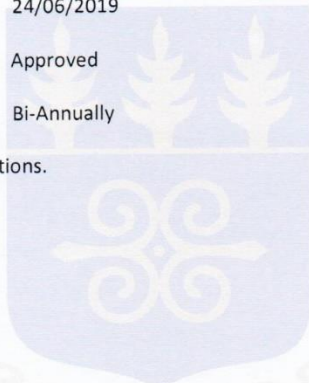
Expiry Date: 25/07/2020  
On Agenda for: Amendment  
Date of Submission: 24/06/2019  
ECH Action: Approved  
Reporting: Bi-Annually

Please accept my congratulations.

Yours Sincerely,

Prof. C. Charles Mate-Kole.  
ECH Vice Chair

Cc: Dr. Margaret Amankwah-Poku, Department of Psychology, University of Ghana.



**FORM UPR16****Research Ethics Review Checklist**

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information)



<b>Postgraduate Research Student (PGRS) Information</b>		<b>Student ID:</b>	UP876020
<b>PGRS Name:</b>	Nkansah Anakwah		
<b>Department:</b>	Psychology	<b>First Supervisor:</b>	Professor Lorraine Hope
<b>Start Date:</b> (or progression date for Prof Doc students)	October 1, 2017		
<b>Study Mode and Route:</b>	Part-time <input type="checkbox"/>	MPhil <input type="checkbox"/>	MD <input type="checkbox"/>
	Full-time <input checked="" type="checkbox"/>	PhD <input checked="" type="checkbox"/>	Professional Doctorate <input type="checkbox"/>

<b>Title of Thesis:</b>	Beyond weird witnesses: Eyewitness memory reports in cross-cultural settings
<b>Thesis Word Count:</b> (excluding ancillary data)	45,169

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

**UKRIO Finished Research Checklist:**

(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: <http://www.ukrio.org/what-we-do/code-of-practice-for-research/>)

a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
b) Have all contributions to knowledge been acknowledged?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
e) Does your research comply with all legal, ethical, and contractual requirements?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

**Candidate Statement:**

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

<b>Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):</b>	ERCIC_059_12_12_2017 ECH 103/17-18 ERCIC_091_11_07_2018 ERCIC_125_28_02_2019
---	---

If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:

<b>Signed (PGRS):</b>		<b>Date:</b> 4-11-2020
-----------------------	--	------------------------