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Developing a scale to measure the presence of possible prejudicial stereotyping in police interviews with suspects: The Minhas Investigative Interviewing Prejudicial Stereotyping Scale (MIIPSS)

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ABSTRACT

If police interviewers hold negative feelings towards certain groups, this may affect how they interview them (either as victims, witnesses or suspects) in that they may not obtain reliable accounts, being the aim of such interviews. The Minhas Investigative Interviewing Prejudicial Stereotyping Scale (MIIPSS) has been developed to assess the level of any investigative interviewers' prejudicial stereotyping towards suspects. The current exploratory study involved semi-structured interviews with twenty people, who had previously been interviewed as suspects in England and also eight very experienced lawyers. Both their views were measured using the MIIPSS before being subjected to a Guttman analysis. Statistical analyses showed that MIIPSS satisfies the criteria for classification as a valid unidimensional and cumulative scale. Therefore, researchers could use MIIPSS as a tool to measure prejudicial stereotyping in investigative interviews. Interviewers could also use MIIPSS to monitor their own attitudes towards certain groups or individuals suspected of different types of crimes.

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Introduction

In recent years, racially biased policing has been a focus of inquiry for media and researchers, not only in Britain, but also in the United States and Canada. Many research projects have reported findings that show disparities in police treatment of black and white citizens (Smith & Alpert, 2007). Research has demonstrated that negative outcomes in the criminal justice system, from being arrested for a crime to sentencing, happen disproportionately more to black than white people (Blaine, 2012). Following the publication of the Macpherson inquiry report on the murder of black teenager Stephen Lawrence, attention for the issue of 'racial profiling' reached new heights of intensity in Britain. The report concluded that the overrepresentation of racial minorities in the national stop-and-search data led to the 'clear core conclusion of racial stereotyping' (Macpherson of Cluny, 1999).

One of the most dangerous types of biases within the criminal justice system is prejudicial stereotypes about a group (Huggon, 2012). The focus of such bias is on race or ethnicity, but can also include bias against someone based on his/her group membership. Huggon (2012) notes that racial bias is

generally thought to be one of the prominent sources of partiality in criminal trials. An inspection conducted by Her Majesty's Inspectorate of Constabulary's (2005) on community and race relations policies and practices within the police service, concluded racial discrimination and harassment are endemic in British society and that the police service is no exception.

Bowling, Parmar, and Phillips (2008) notes that while the overt form of racial prejudice (e.g., being active in extreme right-wing political parties) is rare, racist beliefs, anti-immigrant feelings, xenophobic attitudes and racial prejudice can draw from a deep and powerful wellspring. More importantly, from a criminal justice perspective, if police officers are a cross-section of society, it can be expected that some may be racially prejudiced. Research on policing conducted between in the 1970s–1990s, indicated that racism and racial prejudice were actually more widespread and more extreme in policing culture than in wider society (Bowling et al., 2008).

The role of prejudicial stereotypes in the context of police interviews with suspects has received negligible attention. As such, no research (as far as we are aware) has been conducted to measure the prejudicial stereotyping displayed during investigative interviews by the police interviewers towards suspects in England and Wales. To fill this gap in research within the context on investigative interviewing, The Minhas Investigative Interviewing Prejudicial Stereotyping Scale (MIIPSS) has been developed to assess investigative interviewers' prejudicial stereotyping toward suspects. The Guttman principle is applied to sequentially identify the factors that allow for the development of the scale, which in turn measures if negative attitudes are possessed by interviewers towards suspects.

Investigative interviewing and prejudicial stereotyping

One of the most prominent findings from earlier research into police interviewing of suspects is that police interviewers presume the suspect to be guilty, even before the interview is conducted (Baldwin, 1992; Mortimer & Shepherd, 1999; Moston, Stephenson, & Williamson, 1992). The research carried out on confirmation bias provides an insight into the adverse effect that holding a presumption of guilt could have on interviews of suspects (Hill, Memon, & McGeorge, 2008; Kassir, Goldstein, & Savitsky, 2003). Previous research has examined the effect of confirmation bias on the hypothesis testing process in social interaction (for example; Snyder & Swann, 1978; Kassir et al., 2003). The first known study on confirmation bias in the context of investigative interviewing of suspects in England and Wales was conducted by Hill et al. (2008). They conducted three studies to examine the effect of assumption of guilt on investigative interviewers' questioning style, confessions and denial rates, and suspects' verbal behaviour during interviews with mock suspects. They concluded that the assumption of guilt can indeed have effects both on questioning styles employed by interviewers (e.g., the increased usage of leading and confirmatory questions), as well the emergence of a self-fulfilling prophecy.

The role of prejudicial stereotypes in the context of police interviews with suspects has received negligible attention. Presumptions of guilt can lead to confirmation bias and then to 'tunnel vision', which is one of the major causes of criminal investigation failures (Findley & Scott, 2006). It is therefore important to determine whether some interviewers continue to presume a suspect guilty despite interview guidelines and investigative interviewing training. However, no research (as far as we are aware) has been conducted to find out from where interviewers develop any negative attitudes and presumptions of guilt.

The research discussed above has shown that prejudicial stereotypes remain widespread in society (Bowling et al., 2008). As police officers too are drawn from society, they may equally possess negative feelings towards suspects from certain groups, affecting their thought processes, exhibited in their questioning style when conducting interviews with suspects from certain groups. If police interviewers' hold prejudicial stereotyping towards certain groups, it could possibly be one explanation as to why some interviewers presume a suspect guilty and some interviews continue to be conducted in an unsatisfactory manner (Clarke & Milne, 2001). The MIIPSS has been developed to assess investigative interviewers' prejudicial stereotyping toward suspects. The Guttman principle is applied to sequentially

identify the factors that allow for the development of the scale, which in turn measures if negative attitudes are possessed by interviewers towards suspects.

Development of MIIPSS

'Scaling' refers to various procedures of measuring or ordering entities to quantify attributes or traits (Manheim, 1977). Practically, most of the techniques of scaling have been developed since the late 1920s in connection with research on attitudes (Manheim, 1977). The most common scales used by researchers nowadays are 'summated' scales. A widely known example is the Likert scale. The Likert scale involves a multi-point scale used to measure beliefs by asking people for their extent of agreement in response to questions. However, Likert scales are limited by the assumption that all items in the given survey (questionnaire) are equally weighted (Uhlener, 2005). Historically, factor analysis and tests of internal reliability coefficients, such as Cronbach's alpha, are used to determine whether individual items belong within the same scale or in different scales (Uhlener, 2005).

An alternative to Likert scaling is Guttman or 'cumulative' scaling. In a Guttman scale, responses to items are contingent on the amount of an underlying construct. The items on such a scale measure only a single dimension, and, thus, if the individual agrees with a given item he or she should also agree with all other items that represent it, from least extreme to most extreme attitudes (Manheim, 1977). Guttman scales are characterised by the implicational or scalable nature of their items. That is, tasks that can be successfully completed only when component subtasks are completed in a certain order are then considered implicational or scalable in nature (Gothwal, Wright, Lamoureux, & Pesudovs, 2009). The final score obtained from Guttman scaling is equivalent to the highest item the respondent has answered. From this final score, one can summarise all other items that the participant has answered. Under these conditions the scale is said to be fully implicational. For example, a person scoring a '3' on a five item scale, will agree with items 1–3 and disagree with items 4–5. The Guttman scale is not statistical because it leaves no room for error estimation (Gothwal et al., 2009). In the present study, 'cumulativeness' refers to how an interviewer's negative perceptions about a suspect can constitute an extreme negative attitude.

To develop MIIPSS, it has been hypothesised that interviewers' attitudes towards a member of a group are based on perceived positive and negative aspects of the group (Fishbein & Ajzen, 1974). It has been further hypothesised that if the interviewer holds any negative attitudes towards the suspect, this could lead to judging the suspect on the basis of that perceived negative aspect (such as 'members of a particular ethnic group are drug dealers or involved in knife crimes', or 'the community in a particular area is troublesome'). There is a distinct possibility this may lead the interviewer to presume the suspect guilty even before the interview. Once the interviewer has presumed the suspect guilty, the interviewer's expectations of guilt may lead the interviewer to a self-fulfilling prophecy. His or her expectations of guilt would result in both seeking information that confirms an existing belief, while not seeking, and even avoiding, information that disconfirms the belief (Hill et al., 2008; Kassin et al., 2003). Both these studies found that stereotyping affected questioning styles, which at its most extreme can lead to a coercive form of interviewing. The MIIPSS has been developed in order to measure the suspects and lawyers perceptions about the possible prejudicial stereotyping displayed by the police interviewers' when they (police interviewers) undertook the task to interview suspects from certain groups.

Methods

Constructs and context articulation

Table 1, depicts five essential constructs ordered by increasing negativity in attitudes that informs the MIIPSS. As Table 1 shows, these five constructs (influencing perceptions, use of schemas, guilt presumption, self-fulfilling prophecy and hostile approach) have emerged from the previous literature on

Table 1. Emergence of MIIPSS constructs from previous research studies on investigative interviewing.

	Influencing perceptions	Use of schemas	Guilt presumption	Self-fulfilling prophecy	Hostile approach
Milne and Bull (1999)	✓	✓	✓	✓	✓
Holmberg and Christianson (2002)	✓			✓	✓
Shepherd and Milne (1999)	✓	✓	✓	✓	
Hill et al. (2008)	✓	✓	✓	✓	
Walsh and Bull (2011)	✓		✓		✓
Cherryman et al. (2000)				✓	✓
Baldwin, 1992			✓		✓
Hurren, Kebbell, and Mazerolle (2006)	✓	✓		✓	✓
Kassin et al. (2003)	✓	✓	✓	✓	✓
Oxburgh (2011)	✓		✓		✓
Clarke and Milne (2001)				✓	✓
Walsh & Milne, 2007;				✓	
Shawyer and Milne (2009)	✓				✓
Mortimer and Shepherd (1999)		✓	✓	✓	
Gudjonsson (2003)	✓	✓			
Irving (1980)			✓	✓	✓
Bull and Cherryman (1996)					✓
Pearse and Gudjonsson (1996)		✓		✓	
Shepherd (1991) and (1993)	✓	✓	✓	✓	✓
Williamson (1993) and (2006)				✓	✓
Cherryman and Bull (2001)	✓				✓
Stockdale (1993)			✓	✓	✓

investigative interviewing, being found (or argued) to be the major causes of investigative interviewing failures. These five constructs will now be each examined in turn.

Influencing perceptions

Perception is the process by which a person or group selects, organises, and interprets information based on their socialisation process and experiences (Brown & Hewstone, 2005). Stephan and Stephan (1985) found that interactions between members of different groups can sometimes be anxiety-provoking affairs. They suggested that this could be due to pre-existing conflict between the protagonists or merely through tensions born out of ignorance, embarrassment or misperception. The encounters between members of different groups become breeding grounds for the growth of stereotypical judgments. Those who see a certain group in the most stereotypical way may well be more anxious over the contact (Brown & Hewstone, 2005). In his classic experiment, Dijker (1987) found that the anticipation of Dutch participants of meetings with ethnic minority groups was associated with feelings of anxiety and irritation.

According to MIIPSS, an interview will be considered affected by the interviewer's negative *perceptions* if one or more of the following indicators were identified by the participant as present during the interview; (i) the interviewer's perceived attitudes towards him were negative; (ii) there was a lack of empathy; and (iii) there was an absence of good relationship (or rapport) between the suspect and the interviewer.

Use of schemas

By holding certain beliefs about certain group members, schemas may cause people to interpret situations incorrectly (Bartlett, 1932). Schemas prevent people from seeing the world as it really is and inhibit them from taking in new information by systematically influencing perceptions, interpretations, and judgements (Hoffman & Hurst, 1990). One of the primary functions of schemas is to act as mental shortcuts. The potential abuse of schemas can be blatant and obvious, such as when one ethnic group is considered, say, greedy or lazy (Brown & Hewstone, 2005).

According to the MIIPSS, the interviewer will be considered as using *schemas* to support his/her existing beliefs if the participant believed that interviewer's negative attitudes towards him were due to one or more of the following; (i) his/her group membership; (ii) his/her race; (iii) his/her religion; (iv) the particular nature of the crime (such as sexual crimes, paedophilia or drugs related crimes); or (v) his/her previous criminal record (previously known to the police).

Guilt presumption

One of the most prominent findings from earlier research into investigative interviewing of suspects is that police interviewers assume the suspect to be guilty, even before the interview is conducted (Baldwin, 1992; Cherryman, Bull, & Vrij, 2000; Mortimer & Shepherd, 1999). In their research, McGurk, Carr, and McGurk (1993) found that assumptions of guilt influenced the kind of questions that police officers asked, with leading questions and repetitive questions being used frequently. Furthermore, they found in several interviews admissions were made only in response to a series of leading questions.

According to the MIIPSS, it will be considered that the interviewer *presumed the suspect guilty* if one or more of the following indicators were identified by the participant as present during the interview; (i) the interviewer asked guilt presumptive questions (i.e., questions displaying the interviewer's confirmation bias, where the interviewer selectively searches for information in support of his/her belief or expectations [Kassin et al., 2003] – e.g., Do you still sell drugs?); (ii) the interviewer asked provocative questions (questions which described by the participants were asked merely to make them angry, anxious and heightening their stress – e.g., Would you still be selling drugs if you walked free after this interview?); (iii) the interviewer demonstrated bluffing tactics (e.g., the police interviewer 'bluffed' the interviewee into thinking evidence was to hand but which in fact did not exist); (iv) the interviewer demonstrated inflexibility (e.g., the police interviewer did not allow the interviewee the opportunity to establish their position/account properly or interviewers' did not adjust their stance in light of new information received from the interviewee); or (v) the interviewer reacted to the suspect's behaviour with destabilising, disturbing or confusing (non-verbal) responses (e.g., the police interviewer mentioned that the interviewee's non-verbal behaviour is associated with deception).

Self-fulfilling prophecy effect

Self-fulfilling prophecy is 'the case whereby people (a) have an expectation about what another person is like, which (b) influences how they act towards that person, which (c) causes that person to behave in a way consistent with people's original expectations' (Aronson, Wilson, & Akert, 1999, p. 527). It is likely to happen when someone fails to understand how his/her own belief has helped him to construct a false reality (Biggs, 2009). Once a person is convinced that members of a specific group behave in certain ways, he or she is more likely to seek and find evidence to support the belief than evidence to oppose it, somewhat independently of the facts. The presumption of a relationship predisposes one to find evidence of that relationship, even when there is none to be found or, if there is evidence to be found, to overweight it and arrive at a conclusion that goes beyond what the evidence justifies (Nickerson, 1998).

According to the MIIPSS, the interview will be considered as affected by *self-fulfilling prophecy effect* if one or more of the following indicators are identified by the participant as present during the interview; (i) interviewer overweighed the evidence (e.g., the police interviewer actively exaggerated the strength of the evidence against the interviewee during the interview); (ii) the interviewer ignored evidence that could have gone in the suspect's favour (or at least not led to the belief of guilt); (iii) the interviewer maximised (e.g., interviewer mentioned that the participant would feel worse if he did not confess) or minimised (e.g., interviewer asked questions which functioned to lessen the seriousness of offence and offer moral justification – for example by blaming the victim or other circumstances [Kassin et al., 2003]) the nature of offence; (iv) the interviewer repeatedly accused the interviewee of the crime(s); and (v) the interviewer repetitively asked leading questions (e.g., questions which function to produce a response desired by an interviewer – e.g., You saw the gun, didn't you?) and

Table 2. Ideal responses pattern for a perfect Guttman scale on the MIIPSS.

Influencing perceptions	Use of schemas	Guilt presumption	Self-fulfilling prophecy	Hostile approach	Scale score
0	0	0	0	0	0
1	0	0	0	0	1
1	1	0	0	0	2
1	1	1	0	0	3
1	1	1	1	0	4
1	1	1	1	1	5

guilt presumptive questions (questions displaying interviewer's confirmation bias, where interviewer selectively search for information in support of his/her belief or expectations [Kassin et al., 2003] – e.g., Do you still sell drugs?) with the result that the legal representative had to interrupt the interviewer as the questioning had become oppressive.

Hostile approach

Previous research on investigative interviewing has demonstrated that when the police interviewer perceives negative feelings towards a suspect and assumes he is guilty, there is no presence of empathy but interviewers may be hostile in nature (although sometimes subtle in its manifestation) (Bull & Cherryman, 1996; Cherryman & Bull, 2001; Gudjonsson, 2003; Holmberg & Christianson, 2002; Milne & Bull, 1999; Williamson, 1993, 2006). The use of empathy during police interviews has been shown in previous studies as beneficial both to rapport building process and the number of increased admissions from certain suspects (Oxburgh, 2011).

According to the MIIPSS, the approach of the interviewer will be considered as *hostile* if one or more of the following indicators were identified by the participant as present during the interview; (i) interviewer's behaviour as oppressive (e.g., instances of undue pressure, bullying, or continual challenge); and (ii) questioning during the interview as persistent and coercive (police interviewer persistently asked confirmation seeking questions – e.g., You saw the gun, didn't you?). The five constructs of MIIPSS are placed in the predicted order in Table 2.

A scale score of '0' means that the interviewer would be judged by the survey participant as someone who treated the suspect fairly, the interview begun unaffected by the interviewer's personal perceptions. A scale score of '1' reflects that the interviewer has perceived negative attitudes towards the suspect. A scale score of '2' depicts that an interviewer was viewed as judging the suspect on the basis of perceived negative attitudes. When the interviewer appeared to presume the suspect as guilty, a score of '3' was allocated, while a scale score of '4' refers to the expectations of guilt which may have led the interviewer to a self-fulfilling prophecy effect. Finally a scale score of '5' was given when there seemed to be effects on questioning style and possibly coercion, i.e., hostility.

Materials

Participants

Twenty semi-structured interviews were conducted with male individuals from the Asian Muslim community who had been interviewed by the police on at least one occasion as suspects of crime between 2010 and 2014. Individuals were contacted to ask if they wished to participate and those who agreed were requested to conduct face-to-face interviews. The participants were contacted through the first author's associates who requested if they knew anyone who had been interviewed by police within the last five years as a suspect of crime. They relayed the first author's contact details to the suspects. From these contacts we were successful in securing fourteen interviews. One of the first author's associates, who is also a criminal lawyer was requested to ask some of his clients if they agreed to take part in the current study. Six suspects (also Asian Muslims living in the UK) were sourced by the criminal lawyer.

The suspects who took part in this study were interviewed by the police as suspects from a range of offences, including possession of drugs with intent to supply, sexual offences, serious physical assault, human trafficking, attempted murder, domestic violence and suspected terrorism. The sample involved suspects from major English cities including the West Midlands, London, Greater Manchester and Bristol. None of the suspects were known to each other.

A total of eight semi-structured interviews were also conducted with legal representatives who had represented suspects from almost every ethnicity within England and Wales. Two of the lawyers were associates of the first author, who each in turn provided contact details of a total of six further criminal defence lawyers. It was subsequently learned that each of the legal representatives who took part in this study had represented more than one thousand suspects.

Procedures

During the interviews the suspects were asked to provide their own interpretations of their experiences during police interviewing and, interviewers' attitudes towards them if the suspect believed that the interviewers' attitude was negative towards him and endorsed particular constructs. Once a suspect identified a particular construct, it was matched to the indicators of the construct's operational definition. If this verified that the suspect had correctly identified a construct, the construct was subjected to a Guttman pattern by asking the suspect further questions to establish whether he believed (through open questions) that the constructs lower on the scale were also present during the interview. Any missing constructs in the banding pattern were identified as errors and indicated as '0*'. Similarly, legal representatives were asked to provide their own interpretations regarding police interviewers' attitudes towards suspects from different ethnic groups. Their responses were also evaluated with respect to the operational definition of each construct to the MIIPSS.

Instrumentation

Finally, the twenty-eight audio-recorded interviews were analysed with respect to the operational definition of each construct. All the responses given by the participant to each construct were evaluated. A value of '1' was given if the participant indicated the presence of that construct during the interview. A value of '0' was given if the participant does not believe that construct was present during the interview. If the response from participants mismatched the predicted order, the response is considered as 'error', which is indicated with '0*'. All the responses given to each construct by the suspects and legal representatives are presented in Table 3.

Data analysis

Data was analysed according to the following steps: (i) ordering the constructs from influencing perceptions to extreme hostile approach, i.e., (1) *perceptions*, (2) *use of schemas*, (3) *guilt presumption*, (4) *self-fulfilling prophecy* and (5) *hostile approach*; (ii) analysing the number of constructs endorsed by each participant; (iii) calculation of the total number of errors from mismatch of the predicted order; and (iv) calculation of statistical values.

In order to determine whether the scale is valid, four statistics are produced: (i) the coefficient of reproducibility (CR); (ii) the minimum marginal reproducibility (MMR); (iii) the percentage improvement (PI); and (iv) the coefficient of scalability (CS) (Cliff, 1977; Gothwal et al., 2009; Guttman, 1944).

The CR indicates how often responses fit the ideal pattern. CR varies from 0 to 1, which is calculated as 1 minus the result of the total number of errors (indicated with 0* in Table 3) divided by the total number of possible errors (i.e., total number of participants × total number of constructs).

$$CR = 1 - \left(\frac{\text{total number of errors}}{\text{total number possible errors}} \right)$$

Table 3. Guttman scalogram for the five constructs on the MIIPSS & responses given to each construct (columns) by each participants (rows).

Participants	Influencing perceptions	Use of schemas	Guilt presumption	Self-fulfilling prophecy	Hostile approach	Scale score
S1	1	1	1	1	0	4
S2	1	1	0*	0*	1	3
S3	1	1	1	0	0	3
S4	0*	0*	1	1	1	3
S5	1	1	1	0*	1	4
S6	1	1	1	1	0	4
S7	1	1	1	1	1	5
S8	0	0	0	0	0	0
S9	1	0*	1	0	0	2
S10	1	0*	1	0*	1	3
S11	1	1	1	1	1	5
S12	0	0	0	0	0	0
S13	1	0	0	0	0	1
S14	1	1	1	0	0	3
S15	1	1	1	1	1	5
S16	1	1	0	0	0	2
S17	1	1	1	1	1	5
S18	0	0	0	0	0	0
S19	1	1	0*	1	0	3
S20	1	1	0	0	0	2
LR1	1	1	1	1	1	5
LR2	1	1	0	0	0	2
LR3	1	0	0	0	0	1
LR4	1	1	1	1	1	5
LR5	0*	1	1	0	0	2
LR6	1	1	1	1	1	5
LR7	1	0*	1	1	0	3
LR8	1	1	1	1	0	4

Note: S = Suspect, LR = Legal Representative.

$$CR = 1 - 11/140$$

$$CR = 1 - .078$$

$$CR = .92$$

A CR value of more than .90 is considered acceptable and suggests that it is a valid cumulative and unidimensional scale (Guttman, 1944). A high CR (.92) indicates that pattern of constructs is cumulative and that the MIIPSS is valid (Cliff, 1977; Guttman, 1944).

Edwards (1957) noted that a CR of .90 is not a sufficient condition for the scalability of a set of statements. Since the CR is affected by the proportion of responses in the modal category (the category with the most responses), an artificially high but relatively meaningless CR can be achieved for even an unsatisfactory scale. That is, a high CR with an uneven distribution of responses may be misleading. To interpret the CR properly, one needs some idea of how low it is free to go, given the particular distribution of responses received (Bailey, 2008). This can be determined by computing the MMR.

$$MMR = \sum_{i=1}^n (\% \text{ responses in model category} / N)$$

where N = number of constructs

$$\text{MMR} = \left(\frac{23}{28} + \frac{19}{28} + \frac{18}{28} + \frac{15}{28} + \frac{17}{28} \right) / 5$$

$$\text{MMR} = 3.287/5$$

$$\text{MMR} = .66$$

Since CR = .92 while MMR = .66, it is clear that CR is not high solely because of the modal frequencies, and that, in fact, it could be considerably lower. As such, the CR signifies considerable improvement in the reproducibility over the minimum level of .66 and indicates the adequacy of MIIPSS.

PI is the difference between the CR and the MMR. PI is an indication of the extent to which CR reflects the response patterns rather than the inherent cumulative interrelation of the variable used (Adams, Ashburn, Pickering, & Taylor, 1997).

$$\text{PI} = \text{CR} - \text{MMR}$$

$$\text{PI} = .92 - .66$$

$$\text{PI} = .26$$

The final criterion to conform the Guttman scale is the CS. CS indicates the proportion of responses that can be correctly predicted from the total summed score, thereby allowing for the relative frequencies with which different items are passed. CS is the most important criterion to conform the scale, which essentially tests the degree to which data fit the model (Gothwal et al., 2009). The CS is obtained by dividing PI by the difference between 1 and MMR.

$$\text{CS} = \text{PI} / (1 - \text{MMR})$$

$$\text{CS} = 0.26 / (1 - 0.65)$$

$$\text{CS} = 0.26 / 0.34$$

$$\text{CS} = 0.76$$

The CS value fulfils both desired requirements; (i) CS should be lower than .90 and CR; and (ii) CS should be between .60 and .80 (Stouffer et al., 1950) of an ideal Guttman scale, which indicates the adequacy of MIIPSS.

Results

Responses from 28 participants were subjected to Guttman scalogram analysis. All the responses given to MIIPSS are presented in Table 3. Regularity in responses pattern of the Guttman Scalogram suggests that the responses on the MIIPSS do follow a deterministic Guttman scale (i.e., if the interviewer hold negative attitudes towards suspects then there is a distinct possibility that such negative attitudes may lead the interviewer displaying hostility towards suspect). As evident in Table 4, the MIIPSS satisfies the essential criteria for classification as a valid Guttman scale because CS, CR, and MMR values fall within the desired range.

Discussion

The MIIPSS has been developed to assess the level of investigative interviewers' prejudicial stereotyping towards suspects from certain groups. The Guttman principle is applied in this research because the authors sought, firstly, to sequentially identify the factors which allow for the development of the scale,

Table 4. Evaluation of Guttman properties of the MIIPSS.

Evaluation criteria	Value
Coefficient of reproducibility (CR)	.92
Minimum marginal reproducibility (MMR)	.66
Percentage improvement (PI)	.26
Coefficient of scalability (CS)	.76

which in turn measures if negative attitudes are possessed by the interviewers towards the suspects and, secondly, to distinguish between interviewers with different degrees of prejudicial stereotyping. The constructs in the MIIPSS meet all the requirements of a valid Guttman scale, and logically all the constructs relate to prejudicial stereotyping within the investigative interviewing context. The Guttman scale described in present study provides a useful model to understand the processes and steps involved in the occurrence of prejudicial stereotyping within investigative interviewing and could help to assess the level of apparent prejudicial stereotyping displayed by interviewers during investigative interviewing.

It was hypothesised that if the interviewer has any perceived negative attitudes towards the suspect, this could be followed by judging the suspects on the basis of this perceived negative attitude. As such, there is a distinct possibility that the interviewer could presume the suspect guilty on the basis of perceived negative aspects and employ schemas by using alternative explanations to support existing negative beliefs. Once the interviewer has presumed the suspect guilty, the interviewer's expectation of guilt is considered to likely lead the interviewer towards a self-fulfilling prophecy. Consequently, this approach may lead (at its more extreme) to the interviewer demonstrating hostility towards suspects.

A CR value of .92 was found, indicating that patterns of items are cumulative and that the MIIPSS is a valid instrument of measurement. Because the CR exceeds .90, it can be predicted from the interviewee's response when he or she passed the 'more extreme' item that he or she also passed the 'less extreme' items. For example, if there was a guilt presumption (third item in the MIIPSS) in an interview it means that the interviewer used schemas (second item in the MIIPSS) on the basis of perceived negative attitude (first item in the MIIPSS) to come to his/her assumption that the suspect is guilty.

The MIIPSS can be used either by police supervisors to measure interviewers' attitudes towards suspects or by interviewers themselves to monitor their own attitudes. Interviewers' attitudes can be measured by using the MIIPSS items in the reverse order. For example, measurement would begin when the interviewer recognises that he possesses a hostile approach towards certain suspects. As a hostile approach is the fifth item on MIIPSS (indicating more extreme negative attitudes) the starting point for improving their approach would be to look at the fourth item on MIIPSS followed by the third, second and first item.

The fourth item, self-fulfilling prophecy is a 'false definition of the situation evoking a new behaviour which makes the originally false conceptions come true' (Merton, 1968, p. 477). This can happen when an interviewer fails to understand how his/her own belief has helped him to construct a false reality (Biggs, 2009) and he becomes so focused on an individual or incident that no other person or incident registers in his/her thoughts, which is known as tunnel vision (Findley & Scott, 2006). Tunnel vision is a product of multiple processes including cognitive distortions such as confirmation bias (Findley & Scott, 2006). Tunnel vision and confirmation bias are the results of expectations of guilt (third item on MIIPSS).

One of the most prominent findings from earlier research is that police interviewers assume suspects to be guilty, even before the interview is conducted (Baldwin, 1992; Cherryman et al., 2000; Mortimer & Shepherd, 1999). If there is concern that an interviewer has presumed the suspect to be guilty before the interview, it can be identified by examining where those expectations of guilt came from, by asking such as questions as these. Why did he presume the suspect to be guilty before the interview? What factors made the interviewer to decide the suspect was guilty? Does he assume every suspect to be guilty before the interview or only those suspects who are suspected of a particular crime

(such as knife crimes, sexual crimes) or those who come either from a particular notorious area, ethnic minority, or who have been previously known to the police?

Such patterns that assign generalised characteristics to groups of suspects or groups of crimes without considering variations between individuals are known as schemas or stereotypes (second item on the MIIPSS) (Leyens, Yzerbyt, & Schadron, 1994). They can result in an unjustified negative attitudes towards a suspect based on his/her membership of a group, being suspected of a particular crime or belonging to a troublesome area. The interviewer's attitude towards a member of a certain group is, in part, based on the perceived positive and negative aspects of the group (i.e., the first item on the MIIPSS). By identifying the sources that feed interviewers' negative perceptions of certain groups and individuals suspected of specific offences, and by tracking how explanations that support such negative perceptions develop, interviewers could avoid presuming the suspects guilty prior to interview, avoiding the tunnel vision and confirmation bias that compromises the investigative process.

Perceptions \rightleftharpoons Use of schemas \rightleftharpoons Guilt presumption
 \rightleftharpoons Self - fulfilling prophecy \rightleftharpoons Hostile approach

MIIPSS allows the researchers and police interviewers to use the constructs in both directions. By using the MIIPSS it is possible to identify the factors in a sequence that leads to whether interviewers possess extreme negative attitudes towards suspects.

Limitations

The Guttman scale is not without its limitations. A deterministic Guttman scale is ordinal. There is no information that can be used to infer the intervals between constructs and participants. The scalogram analysis does not allow for enough variation in the construct being measured (Gothwal et al., 2009). Although the MIIPSS identifies the factors in a sequence which ultimately might lead to the interviewers' extreme negative attitudes towards suspects, and distinguish between interviewers with different degrees of prejudicial stereotyping, it must be remembered that MIIPSS is ordinal; hence it is not possible to compare the prejudicial stereotyping level displayed by interviewers' across suspects. Despite these apparent shortcomings, an important property of a Guttman scale is that a person's entire set of responses to all items can be predicted from the 'cumulative' score, because the model is deterministic (Guttman, 1944).

It is also important to recognise that the causes of the presumption of guilt, self-fulfilling prophecy and hostile approach does not necessarily arise only from prejudicial stereotyping based upon suspect's membership in an ethnic, religious or other minority group, but also could be due to other factors such as the particular nature of the crime (such as sexual crimes, paedophilia or drugs related crimes), suspects' previous criminal record, or their being previously known to the police. Further, interviewer's interpretations of any evidence held, or their schema, may well also have varying degrees of influence. Furthermore, during the semi-structured interviews the suspects may have exaggerated their responses, which could have been affected by their personal biases against the police. Similarly, legal representatives' views may be affected by any social biases they may have held either towards or against the police or suspects (similarly, the authors). To minimize such effects the authors presented all the results with their utmost integrity. Due to the fact that participants were suspects from a minority community, a hard to reach group for voluntary study, the small sample size could limit the generalisability of this study. However, the responses from experienced legal representatives triangulated the suspects' responses, which is the strength of this study.

Conclusion

On the basis of the Guttman analysis of the MIIPSS, the CR and CS values are evidence of a valid Guttman scale, which confirms the MIIPSS hypothesis. Thus, the findings of the present study constitute an important initial validation of the current scale. Researchers could use the MIIPSS as a

tool to measure the prejudicial stereotyping in investigative interviews and interviewers' can also use MIIPSS to examine their attitudes towards different groups or individuals suspected of different types of crimes. As a consequence opportunities, the MIIPSS not only enable the researchers and police supervisors to measure the police interviewers' possible negative stereotypes towards suspects but also may suggest why interviewers' presume suspects guilty prior to an interview. The MIIPSS provides researchers with opportunities to more scientifically measure police officers' prejudicial attitudes when conducting research in either experimental or naturalistic settings.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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