

No rapport, no comment: The relationship between rapport and communication during  
investigative interviews with suspects

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### Abstract

There are few studies that have focused on systematically measuring indicators of rapport during police investigative interviews. Using Tickle-Degnen and Rosenthal's (1990) model as the basis for a systematic measurement of rapport, this study examined police interviews to identify whether rapport with suspects influences investigation relevant information (IRI). Eighty-two interview transcripts with male suspects accused of child internet sex offences were coded across three rapport components: attention, positivity, and coordination. Attention and coordination were the most frequently used and both positively correlated with the production of information. Positivity did not significantly correlate with IRI. The interviews were broken down into three different stages to examine the relationship between the rapport indicators and IRI across the interviews. Attention related to IRI throughout the entire interview, coordination during the middle and end, and positivity did not relate to IRI for any of the time points. This study offers a methodology for measuring rapport during real life interviews and implications for interviewing and training are discussed.

*Keywords:* rapport, investigative interviews, communication, suspects.

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The concept of rapport is central to investigative interviewing and is described as ‘the heart of the interview’ (St Yves, 2006, pp. 104). Out of sixteen of the highest rated interrogation components Kassin et al. (2007) found that interviewing officers rated rapport building as the fourth most important. Despite claims that rapport is an essential element of interviewing, only recently have researchers begun to empirically examine the influence of rapport building on information recall (e.g. Alison, Alison, Noone, Elntib, & Christianson, 2013; Holmberg & Madsen, 2014; Vallano & Compo, 2011). To date, the influence of rapport on communication in a mock or field investigative interview setting has elicited mixed research findings (Vallano & Compo, 2015).

### **Definition and context**

There are several issues that may hinder the progression of the research: there is no clear definition of rapport (Abbe & Brandon, 2013) and there is little agreement on the ways in which rapport is displayed and measured (Vallano & Compo, 2015). Furthermore, it is likely that rapport components differ dependent upon the context and aims of an interaction (Abbe & Brandon, 2013). To successfully examine the impact of rapport on communication in investigative interview settings, a theoretical model of rapport building that identifies a range of suitable rapport components should be applied to the measurement of rapport in this context. This approach would determine whether the rapport components are present and whether they influence the amount of investigative relevant information obtained.

Rapport has important interpersonal significance across a variety of different contexts. Much of the research on rapport has occurred in clinical work where it is considered as part of the therapeutic alliance and is believed to assist in fostering trust and successful therapeutic effects (e.g. Leach, 2005). However, the definition of rapport in the context of

therapy is still not clear with vague descriptions provided such as ‘positive affect between people’ (Bernieri & Gillis, 2001, pp.69). Rapport may be defined differently in the context of investigative interviewing as these interactions serve a different purpose to that of therapy. Abbe and Brandon (2013, 2014) highlight that the purpose of investigative interviewing is to gain information, and the person providing this information may not always be motivated to do so, especially in interviews conducted with suspects. Therefore, the warmth that is considered an important part of therapy-related rapport is unlikely to be applicable to investigative interviewing. Instead, Abbe and Brandon (2013) state that rapport is more akin to ‘operational accord’ where the aim is for the interviewer and source to have a productive relationship that is built on cooperation and respect.

A valuable study conducted by Vallano, Evans, Compo, and Kieckhaefer (2015) asked one hundred and twenty-three law enforcement officers from the USA how they defined rapport with adult interviewees. Most of the officers described rapport as a positive relationship comprised of trust and communication. Interestingly, despite the fact that investigative interviews are not generally regarded as ‘typical’ positive experiences, the officers still conceptualized rapport in this way. The important finding that rapport is associated with communication indicates that the officers perceive a relationship between rapport and the production of information.

A further consideration is that rapport building should not be confined to the introductory phase of an interview. For example, in the PEACE model used in England and Wales the ‘engage and explain’ phase is often highlighted as the time point in which to establish rapport. Walsh and Bull (2012) found that rapport was most beneficial to successful interview outcomes when it was maintained during the entire interview, with rapport at the beginning being less beneficial.

## **Measuring and researching rapport**

Rapport has been explored by comparing different interview approaches. Holmberg and Madsen (2014) compared the humanitarian versus dominant interview style on the effects of recall. The humanitarian style consistently produced superior recall with participants remembering more information, more central information, and more peripheral details. Vallano and Compo (2011) examined the impact of rapport building on adult eyewitness accuracy by assessing a rapport condition with other interview approaches. The rapport condition was based on the rapport methodology used in the cognitive interview. The verbal techniques included the use of small talk, disclosure of personal information, and the employment of encouragement (for a full list of behaviours please refer to Vallano & Compo, 2011). The rapport condition did not produce more information, however participants recalled less inaccurate information and were more resistant to post event misinformation. However, these studies do not necessarily involve rapport. The effects could have been obtained as a result of other aspects of the humanitarian approach rather than rapport per se (Vallano & Compo, 2015). While the authors frame the humanitarian style as an approach to rapport building, there is no way of knowing whether or not the results can be attributed specifically to rapport.

Vanderhallen, Vervaeke, and Holmberg (2011) explored a self-report measure that they argue is linked to the concept of rapport in investigative interviews. They used the Working Alliance Inventory (WAI), which is a clinical measure to examine working alliance (WA) between clinicians and clients. Vanderhallen et al. (2011) asked interviewers, suspects, and witnesses to fill out the WAI and rate interview interactions on different interpersonal dimensions. There were differences between witness and suspect ratings with witnesses rating interviews as less hostile, clearer, more humanitarian, more respectful, less

anxiety provoking and less dominant than ratings provided by the suspects. Interviewers had less WA with suspects than witnesses, and interviewers admitted finding it more difficult to build WA with suspects. Interestingly, the interviewers overestimated their level of WA, highlighting the need for a greater understanding of how WA is presented by an interviewee. These findings indicate interviewers may need further training on how to improve interpersonal dynamics, such as rapport, during interviews with suspects.

Vanderhallen et al.'s (2011) study involved self-report measures that provided a subjective measurement of working alliance. Vallano and Compo (2015) state that rapport is a subjective experience and objective measurement of rapport may not accurately reflect the level of rapport that the participants are experiencing. Nevertheless, officers require an objective method of assessing rapport, as they cannot ask interviewees if they think they have rapport, they must rely on their own observation of the interviewee's behaviour. Therefore, what the literature requires is an objective method of measuring and implementing rapport, that reflects the theoretical underpinnings of the rapport construct, and that is applicable to rapport behaviours carried out in investigative interview settings.

Alison, Alison, Noone, Elntib, and Christianson (2013) developed a model for measuring rapport entitled ORBIT (Observing Rapport Based Interpersonal techniques). They examined four hundred and eighteen videoed interrogations with terrorist suspects and aimed to find a coding framework that could be used to find meaningful police intelligence. The framework utilized strategies from motivational interviewing, interpersonal behaviour and interview yield. Alison et al. found that motivational interviewing techniques were positively associated with adaptive interpersonal behaviour from the suspects which then led to an increase in interview yield. Interestingly they found that even a small amount of maladaptive interviewer behaviour increased maladaptive suspect behaviour which in turn reduced interview yield. Alison et al.'s research offers a comprehensive taxonomy for

supportive interview behaviour that emphasises the importance of ethical and humane interviewing. However, the framework is underpinned by interpersonal ‘rapport-based’ techniques from the counselling psychology literature. It is not explained clearly in the article how the measures selected relate specifically to the phenomenon of rapport or rapport in the context of investigative interviewing.

### **Tickle-Degnen and Rosenthal model**

In Abbe and Brandon’s discussion paper on rapport in forensic interviews (2013) they discuss Tickle-Degnen and Rosenthal’s (1990) theoretical model of rapport building in the context of investigative interviewing. According to Tickle-Degnen and Rosenthal (1990), rapport has three major components: mutual attention, positivity and co-ordination. For the mutual attention component rapport is believed to be present when participants are focused and interested in each other. The second component, positivity, is fostered as a result of the friendly nature of the interaction that provides effective and practical outcomes for the participants. Finally, coordination, is believed to occur when the interaction runs smoothly and there is a feeling of cooperation between the participants. Bernieri, Gillis, Davis, and Grahe (1996) added to the validity of this model through their research on the association between rapport behaviours and self-reported rapport. They asked different members of dyads to engage in tasks with each other and then asked each member of the dyad to rate the level of rapport experienced in their own interactions with the other person. Bernieri et al. (1996) video recorded these interactions and coded different behaviours. They quantified which behaviours were commonly present in the interactions rated highly on self-reported rapport and found that these behaviours could be mapped onto the same model outlined by Tickle-Degnen and Rosenthal.

Tickle-Degnen and Rosenthal (1990) also described a developmental trajectory of rapport where the presence of the three components may differ dependent upon the status of

the relationship. During early encounters positivity is highly likely to be present, as individuals want to establish a positive impression with the other person to maintain the relationship. Positivity declines once the relationship is established. Coordination has the opposite trajectory. It occurs less at the beginning of an interaction, as participants need time to adapt to each other's communication style. Coordination would occur later in the interaction once participants were more familiar with each other. Mutual attention is thought to occur throughout the entire interaction. During the initial stages individuals engage in a reasonable amount of mutual attention to indicate to the other person that they are being listened to. Mutual attention would be maintained throughout if rapport were present as disinterest can leave a negative impression that may result in a reduction in rapport.

In Abbe and Brandon's (2013, 2014) discussion and review papers on rapport during investigative interviews, they discuss attention, positivity and coordination as described above. They outline a number of behaviours that occur that could be used to indicate rapport in line with Tickle-Degnen and Rosenthal's (1990) model. These are a mix of verbal and nonverbal behaviours. Some of the behaviours addressed are: use of the person's name (2014), friendliness (2013, 2014), back channel responses, acknowledgements (2014), paraphrasing (2014), agreements (2013, 2014), and information about process and procedure (2013). They highlight that awareness of these behaviours may help interviewers monitor rapport during the interview and adapt behaviour accordingly. Abbe and Brandon (2013) also describe an additional rapport component that is more cognitive in nature and is related to the 'coordination' component. They argue that 'shared understanding' is an important cognitive element where the suspect and interviewer would have a 'shared mental model' of the purpose and process of the interview. Shared understanding could manifest itself in the form of introductions, explanation of the caution, rules for communication etc. (Abbe & Brandon, 2013). Support for this idea can be found in the child interview literature where the practice recall and ground rules element of the introductory phase are thought to relate to

rapport building and have been shown to improve the production of information from children (e.g. Brubacher, Poole, & Dickinson, 2015). The purpose of these components is to help children understand what is expected from their communication and the communication rules. Shared understanding has led to benefits in communication by enhancing team performance (Stout, Cannon-Bowes, Salas, & Milanovich, 1999) and negotiations (Swaab, Postmes, van Beest, & Spears, 2007; Van Boven & Thompson, 2003). Therefore, it is possible that shared understanding could be measured as part of the coordination element of rapport in this setting and increase the cooperation of interviewees.

Walsh and Bull's (2012) study examined the impact of rapport behaviours on information during real world interviews with fraud suspects. Walsh and Bull (2012) refer to Tickle-Degnen and Rosenthal's (1990) model of rapport. They provide a comprehensive list of behaviours that they believe are indicative of rapport, e.g. provision of introduction, empathy etc. (for a full list of behaviours refer to Wash & Bull, 2012), and asked individuals to rate the quality of these behaviours and the interviews after observing the interviews. They rated the rapport behaviours separately in the engage and explain, account and closure phases of the interview then examined the relationship between the ratings of these behaviours and 'interview outcome'. Interview outcome was categorized as unsatisfactory or preferred (comprehensive account and/or full confession). They found a significant relationship between the quality of rapport behaviours and the ratings of the quality of the interviews overall. Rapport was rated more highly in interviews with 'preferred' outcomes. There was no relationship between the quality of rapport in the engage and explain phase and interview outcome. There was little evidence of rapport behaviours in the closure phase. Finally, the interviews rated highly in the account phase were three times more likely to gain a 'preferred' interview outcome. Therefore, providing evidence that rapport improved interview quality and outcome, mainly in the account phase, and their research highlights the importance of rapport maintenance throughout interviews.

**The current study**

Although Wash and Bull (2012) make reference to Tickle-Degnen and Rosenthal's (1990) rapport model, they did not measure rapport behaviours specifically in line with this model. As per the recommendation of Abbe and Brandon (2013, 2014), the authors of the current study have selected rapport behaviours that are aligned with Tickle-Degnen and Rosenthal's (1990) three rapport components: mutual attention, positivity, and coordination (see table 1). The research will examine whether or not these different components are evident in real world interviews of suspects investigated for the possession of indecent images of children, and which components are related to the communication of investigation relevant information. In Walsh and Bull's (2012) study 'interview outcome' was based on a subjective rating of how comprehensive the information was and whether a confession was obtained. Alison et al (2013) also provided a subjective measure of interview quality. The current study will quantify the amount of IRI in order to more specifically examine the relationship between rapport behaviours and communication in this setting. The findings will provide a theoretical framework for understanding the influence of rapport that could be utilized in practice to increase rapport.

This study adds to the developing body of rapport research by examining interviews with suspected sex offenders, and rapport may be particularly important with this group of offenders for a variety of different reasons. Sex offenders frequently minimise and distort the nature and severity of their crimes (Marshall, Serran, & O'Brien, 2009), sexual offences involving children induce some of the strongest reactions from society and there is a social stigma attached to sexual offending (Quinn, Forsyth, & Mullen-Quinn, 2004), and interviewers hold more negative attitudes towards sex offenders and these attitudes impact negatively upon the quality of interview technique (Holmberg & Christianson, 2002; Oxburgh, Ost, Morris, & Cherryman, 2015). Therefore these suspects may be less

cooperative and forthcoming with information (Ward, Hudson, Johnson, & Marshall, 1997). Overall, rapport may be an important factor in eliciting information from sex offenders, and police officers may need to improve their rapport technique when interviewing this group of suspects.

Based on Tickle-Degnen and Rosenthal's (1990) model of rapport behaviour, several verbal rapport indicators have been selected that can be framed in line with the three rapport components of positivity, mutual attention and coordination, to examine the relationship between rapport and IRI. In addition, the research aims to discover which components are used most frequently and which have the strongest relationship with the production of IRI. The beginning, middle and end of the interview will also be examined to discover whether the influence of the rapport components vary according to the developmental trajectory of rapport outlined by Tickle-Degnen and Rosenthal (1990).

Previous research has demonstrated the influence of rapport on successful interview outcomes (Alison et al, 2013; Walsh & Bull, 2012) therefore it is expected that rapport overall will positively correlate with the amount of IRI obtained in the interviews and across each stage of the interview. However, there is no research data to suggest which rapport components (positivity, attention and coordination) will correlate with IRI, which components will correlate with IRI during each stage of the interview, and whether or not there will be differences in the frequency of the different rapport components. We expect differences in the frequency of rapport across each of the three stages of the interview where the greatest amount of rapport will be present at the beginning of the interview followed by the middle then the end. This is based on training guidance and previous research showing that the beginning of the interview is typically dedicated to rapport and that there is little evidence of rapport in the closure phase of the interview (Walsh & Bull, 2012).

## **Method**

### **Data**

Eighty-two interviews with suspects were analysed in transcript form. The transcripts had been anonymised with names and any identifying information removed. A criterion for the selection of interviews included: all interviews must investigate the possession and distribution of indecent images of children, all interviewers must be at least PIP level 2 trained (according to the UK's Professionalising Investigation programme these officers have been trained to conduct serious and complex investigations) , and all cases must be closed but include those that were taken forward by the criminal justice system as well as those that were discontinued. Interviews that matched the criteria were randomly selected by the police contact. Interviews were carried out by 20 police officers (3 females and 17 males). Interviews occurred between 2008 and 2011 and two interviewers were present in each interview. In 45 interviews both interviewers were male, in 7 interviews both interviewers were female, and in 30 interviews there was one male and one female interviewer. All suspects were male. In 39 of the interviews solicitors were present and in 7 of the interviews appropriate adults were present. Zero suspects reported that they knew the victims. The length of interviews ranged from 15 minutes to 141 minutes, with the mean interview length being 45 minutes. In all interviews suspects were accused of possessing categories of images ranging in severity from category A to C (CPS, 2017).

### **Coding and Procedure**

Three coders content analysed the interview transcripts (one person coded 28 and the other two coded 27). Following initial training, coders individually coded three interviews and discussed differences and adjustments to the coding framework. After further training 10% of the interviews were coded to assess inter-rater reliability. Proportion agreement

(number of agreements/number of agreement + disagreements) was applied. An inter-rater reliability of .90 was achieved for all variables.

**Measures of interpersonal rapport.** The coding framework was derived from Tickle-Degnen and Rosenthal's (1990) rapport components model, which included: positivity, attention, and coordination. As per Abbe and Brandon's (2103) suggestion, 'shared understanding' was included in the coding framework under the category of 'coordination'. Rapport is conceptualized as a mutual interpersonal phenomenon in which both parties experience rapport (Abbe & Brandon, 2013). Therefore, rapport components were quantified from the verbal information provided by both the interviewer and suspect. Nonverbal behaviours were not coded as the researchers had access to the transcripts only. Each word or collection of words was classified as a single component and could not be classified as multiple components. The totals were quantified for all three components.

The literature on rapport in investigative interviewing was reviewed for rapport indicators that would fit into Tickle-Degnen and Rosenthal's model and that would be applicable in this context. Refer to Table 1 for a breakdown of rapport components, the component indicators, examples of each of the indicators, and the research sources that have previously referred to these behaviours as measures of rapport. Please note that with the exception of Abbe and Brandon (2013, 2014), the sources have not referred to these indicators with regards to Tickle-Degnen and Rosenthal's model, but have used these behaviours as indicators of rapport. Only three of the indicators have not been mentioned in the previous rapport literature: reassurance, humour and identifying emotions. However, these were noted to occur frequently when the interviews were coded and the decision was made to include these in the coding framework.

To reflect the timing aspect of Tickle-Degnen and Rosenthal's model (1990) the interviews were divided into sections encompassing the beginning, middle and end of the

interviews. The time and length of each interview was recorded and time was used for the division. For example, if an interview was 141 minutes long then the interview was divided into 47-minute segments for beginning, middle and end. Total numbers of rapport components were quantified for each segment.

Table 1

*Rapport components and indicators, along with examples of the indicators, and a list of research sources from which the indicators were derived*

Component	Indicator description	Example	Source
Positivity	Empathy	'I can understand why you might feel nervous'.	Holmberg & Madsen, 2014; Oxburgh & Ost, 2011; Walsh & Bull, 2012.
	Use of suspect's name	'Where did you buy the computer James?'	Abbe & Brandon, 2014; Vallano & Compo, 2011.
	Politeness	'Thank you for answering my questions'.	Vallano et al., 2015.
	Humour	'Okay thanks for telling me your age. I know you said your date of birth but I couldn't work it out as my maths isn't all that great (laughs).'	None.

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	Friendliness	‘How are you feeling today?’	Abbe & Brandon, 2013; Cuddy, Fiske, & Glick, 2008; Fiske, Cuddy, & Glick, 2007; Holmberg & Madsen, 2014.
	Reassurance	‘(Name) has previously worked on a unit, which deals with child investigations. And the reason I tell you that is because there’s nothing that you can tell me or (name) that’s going to shock me.’	None.
Attention	Back channel responses	‘Mmm’.	Abbe & Brandon, 2014.
	Acknowledgements	‘Okay’ or ‘yeah’.	Abbe & Brandon, 2014.
	Paraphrasing	‘So you downloaded the software...’ (repeating back what the suspect has said).	Abbe & Brandon, 2014.
	Identifying of emotions	‘I see that you are sad’.	None.

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Coordination	Agreement	'Yeah that is what I meant'.	Abbe & Brandon, 2013.
	Credibility	'I am a detective constable for the child protection unit and I have five years' experience of interviewing in these types of cases.	Abbe & Brandon, 2013; Brambilla, Sacchi, Eastellini, & Riva, 2000.
	Information about process and procedure	'(Name) and I will be the interviewing officers, I'll lead the interview and (name) will be writing notes in there just to, in case I need to, he thinks I've missed something or we need to go back to something, ok.'	Abbe & Brandon, 2013; Valley, Thompson, Gibbons, & Bayerman, 2002; Walsh & Bull, 2012).
	Familiarisation with the room	'We've got a couple of cameras in the room, one up there - oh, we've got three actually, I think these two are the only two, two working though, one is pointing at you, and the other one is	Walsh & Bull, 2012.

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pointing at everyone else  
in the room.'

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**Investigation relevant information (IRI).** Many researchers have identified IRI as a successful technique for quantifying units of information within a transcript from a police interview (e.g. Milne & Bull, 2003; Oxburgh, Ost, & Cherryman, 2012; Phillips, Oxburgh, Gavin & Myklebust, 2012; Yuille & Cutshall, 1986). The current study followed previous research and coded for: (i) *person* which included details about the victims or other relevant people such as age, gender, name, (ii) *action* included offence actions such as 'I downloaded an indecent image', 'pictures of the child were taken', (iii) *location* identified different geographical locations pertaining to the crime such as meeting places but also cyber locations such as where images were uploaded to or downloaded from, (iv) *item* that were present such as a computer, weapon, and (v) *temporal* details which included days, times, months and years. For example, "I went to the corner shop (1 person, 1 action and 1 location) with a knife (1 item) on the 21<sup>st</sup> February 2006 (3 temporal) with my partner (1 person) who is 21 years old (1 person). Repetitive information was ignored. Total IRI was quantified for the entire interview and per timing segment.

## Results

### Relationship Between Rapport Components and IRI

To explore the relationship of rapport and the amount of IRI obtained during the investigative interviews a series of Pearson's correlation coefficients were calculated.<sup>1</sup>

Rapport, overall,  $r=.49$ ,  $p < .001$ , was significantly correlated with total IRI. Rapport was

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<sup>1</sup> The three rapport components were positively correlated (positivity and attention,  $r=.61$ ,  $p<.001$ , attention and coordination,  $r=.66$ ,  $p<.001$ , positivity and coordination,  $r=.71$ ,  $p<.001$ ).

separated to individual rapport components (positivity, attention and coordination). A significant positive correlation was found for attention,  $r = .52, p < .001$  and coordination,  $r = .43, p < .001$  both were significantly correlated with the overall amount of IRI obtained; but no significant correlation was found for positivity,  $r = .21, p = .052$  (please refer to tables 2 and 3).

Table 2.

*Correlations (r) for rapport components across each stage of the interview and amount of IRI (N=82)*

	IRI Beginning	IRI Middle	IRI End	Overall IRI
Positivity	-.12	.00	-.01	.21
Attention	.38***	.43***	.52***	.52***
Coordination	.05	.31**	.26*	.43***
Overall Rapport	.19	.39***	.42***	.49***

\*\*\* $p < .001$ , \*\* $p < .010$ , \* $p < .050$

Rapport across the developmental trajectory of the interviews was also explored. Rapport was significantly related to the amount of IRI obtained at the middle,  $r = .39, p < .001$  and at the end,  $r = .42, p < .001$  of the interviews; but not at the beginning of the interviews,  $r = .19, p = .075$ . To investigate this correlation further rapport was separated into individual components (positivity, attention and coordination) and components were explored across each time point. Attention was significantly related to IRI at the beginning of the interviews,  $r = .38, p < .001$ ; but no significant correlation was found for positivity ( $r = -.12, p = .998$ ) or

coordination ( $r=.05$ ,  $p=.658$ ). Both attention,  $r=.43$ ,  $p<.001$ , and coordination showed,  $r=.31$ ,  $p<.01$  significant positive correlations with IRI at the middle of the interview. However, no significant relationship was found for positivity ( $r=.00$ ,  $p=.998$ ) at this time point. Finally, attention,  $r=.52$ ,  $p<.001$  and coordination,  $r=.26$ ,  $p<.05$  were significantly related to IRI at the end of the interviews; again no significant correlation was found for positivity ( $r=-.01$ ,  $p=.954$ ) at this time point (please refer to tables 2 and 3).

### Presence of Rapport Components Across the Stages of the Interview

A 3 x 3 (Rapport components [positivity, attention, coordination] x time [beginning, middle, end] repeated measures analysis of variance (ANOVA) was applied to compare the frequency of each rapport component across the stage of the interview (please refer to table 3 and figure 1). Mauchly's test indicated that sphericity had been violated for the main effects of rapport component  $X^2(2) = 40.479$ ,  $p<.001$ , and stage of interview  $X^2(2) = 28.687$ ,  $p<.001$ . The degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon = .72$  for the main effect of rapport and  $.77$  for the main effect of stage of interview).

Table 3.

*Means and standard deviations in brackets for rapport components and IRI across interview stages (N=82)*

	Beginning	Middle	End	Overall
Positivity	11.94 (11.73)	5.55 (7.24)	9.11 (10.25)	24.78 (24.18)
Attention	38.70 (29.33)	40.52 (30.78)	36.20 (28.62)	118.18 (85.42)
Coordination	31.55 (24.63)	19.11 (14.64)	19.13 (16.09)	68.50 (50.00)
Overall rapport	82.20 (56.28)	65.20 (45.71)	64.45 (44.97)	211.85 (138.19)

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IRI	342.91 (342.85)	457.76 (350.80)	404.52 (359.28)	1205.13 (870.48)
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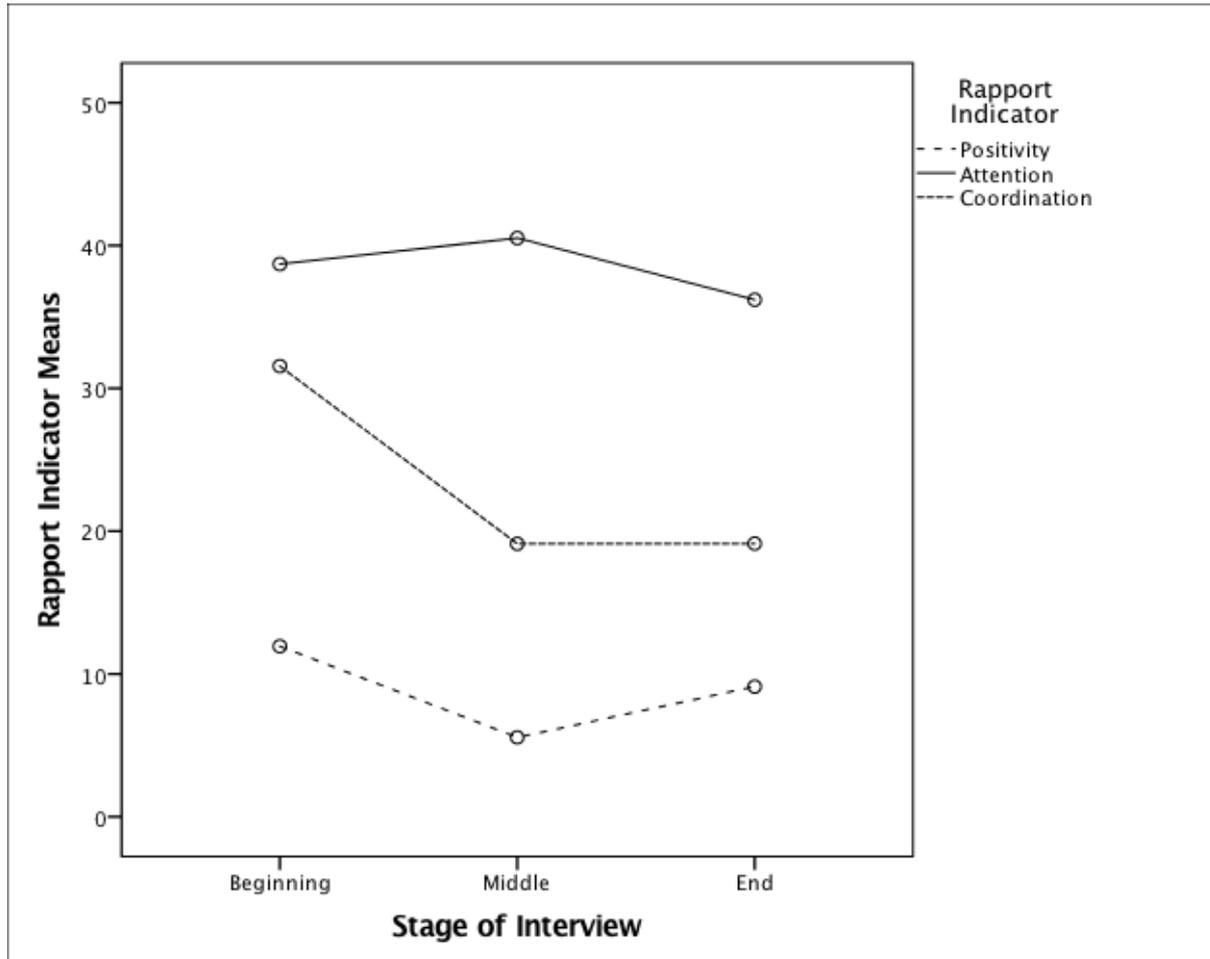


Figure 1.

Frequency of rapport components across each interview stage

There was a significant main effect for the rapport components  $F(2,166) = 101.241, p < .001, \eta^2 = .550$  and a significant main effect of interview stage  $F(2,166) = 18.511, p < .001, \eta^2 = .182$ . A significant interaction effect between the rapport component and the stage of the interview  $F(4, 332) = 11.390, p < .001, \eta^2 = .121$  was identified (see Figure 1). This indicates that different rapport components had an impact on the IRI obtained at different stages of the interview. A series of one-way ANOVA's were applied to explore the interaction effect. The

analysis revealed a significant main effect for positivity across all time points  $F(2, 166)=15.744, p<.001, \eta^2 = .159$ . Simple pairwise comparisons with bonferroni adjustment exposed a significant difference between beginning and middle ( $p<.001$ ), and middle and end ( $p<.001$ ). Positivity was highest at the beginning ( $M= 11.940, SD= 11.73$ ) and end ( $M=9.119, SD=1.119$ ), with the lowest use of positivity at the middle ( $M=5.56, SD=1.119$ ). No significant main effect of time was found for attention  $F(2,166)=2.00, p=.141, \eta^2 = .024$ . However, there was a significant main effect of time for coordination  $F(2, 166)=30.342, p<.001, \eta^2 = .268$ . Bonferroni adjustment and simple pairwise comparisons exposed a significant difference of the use of coordination between the beginning and middle ( $p<.001$ ), and the beginning and end ( $p<.001$ ). Coordination was highest at the beginning ( $M= 31.560, SD= 2.688$ ) but no significant difference was found between middle ( $M= 19.119, SD= 1.598$ ) and end ( $M= 19.131, SD= 1.756$ ).

### Discussion

This study applied a systematic measurement of rapport to examine the relationship between rapport and the production of IRI, in real-world police interviews. Secondary aims were to explore which of the rapport components were used most frequently, and which of these related to the elicitation of IRI. Finally, the developmental trajectory of rapport was investigated to examine the pattern of rapport components, and their influence, across the entire interview. The findings offer a model of rapport that is an adjustment of Tickle-Degnen and Rosenthal's (1990) model, which has relevance to investigative interviews with suspected internet sex offenders. This model could be taught in training to emphasise the link between rapport and communication, to explain what rapport should look like during investigative interviews, and to help interviewers identify when rapport is not present.

As hypothesized, rapport overall was significantly related to the amount of IRI. Previous research (e.g. Alison et al., 2013; Walsh & Bull, 2012) found that interviews with

highly rated rapport behaviours were positively associated with interviews that were of a better quality with favourable outcomes. The current findings support and extend their results. Our methodology involved the coding of behaviours that have been theoretically and empirically linked to rapport. Furthermore, the measurement of IRI, as opposed to ratings of interview quality and yield, provides a more convincing finding that rapport behaviours are related to communication in forensic interview settings.

There were differences in the frequency of the rapport components with attention used most often, followed by coordination and then positivity. The variances in frequency across rapport components could be explained by the training involved in the PEACE model (the practice used by the interviewers in this study). During training interviewers are strongly encouraged to carry out and demonstrate active listening (Clarke & Milne, 2001). In addition, attention should be a natural part of the interview, for both participants, given the context. Interviews with sex offenders are often classed as 'high stake' and police officers are under pressure to gather quality evidence to secure convictions. For suspects the content of the interview will influence whether or not they are charged or released. Therefore, based on training and the high stakes nature of investigative interviews, attention should be a behaviour that is frequently employed by both participants.

Officers are also trained to familiarise suspects with the particulars of the interview room and the interview process, and these behaviours are in accordance with the Police and Criminal Evidence Act (Home Office, 1984). Therefore, it is not surprising that the coordination element of the rapport model, which included these behaviours, was found to occur frequently and positively correlate with IRI. Abbe and Brandon (2013) state that these behaviours help create a 'shared mental model' of the interview where the interviewee understands the procedure and knows what to expect. Research examining the impact of preparation at the beginning of child interviews, demonstrates that when children have a

clearer understanding about the structure and expectations of an interview then memory performance is improved (Brubacher et al., 2015; Brubacher, Roberts, & Powell, 2011). Therefore, it is possible that when suspects have a better understanding of the interview procedure, then communication increases. Interviewing trainers should emphasise the importance of coordination for rapport and communication and highlight how explanation of process and procedure can benefit psychological rapport.

Furthermore, in the rapport literature, rapport in the form of coordination is described as harmonious with a feeling of synchronization and responsiveness between interactants (Bernieri & Gillis, 2001). Therefore, when cooperation occurs in interviews this facilitates the provision of IRI. Collins, Lincoln, & Frank (2002) hypothesize that the communication benefits of rapport-based cooperation are underpinned by increased motivation from the suspect. In the present study because interviewers and suspects were agreeing and therefore cooperating, then the suspect may have been more motivated to provide an account.

Of the three components positivity was used least. It was marginally but negatively correlated with IRI, and when split into beginning middle and end, did not correlate with the IRI at each of these time points. Abbe and Brandon (2013) highlight that positivity in forensic interviews is unlikely to be akin to the positivity experienced in therapeutic settings given the nature of investigations. Still, positivity can be based on positive neutral regard where the interaction is respectful, and respect is a core principal in PEACE training. Nevertheless, even though this form of positivity was evident in the interviews it was not positively related to IRI. In hindsight, perhaps it is not surprising that positivity was not as beneficial or used as often as the other components in the present sample. Previous research indicates that interviewers have a more negative attitude towards sex offenders and this can have a detrimental impact on interview technique (Oxburgh et al., 2015). It may also be difficult to maintain positivity to a great extent when these types of allegations are discussed.

Further examination of positivity is required in interviews that investigate other categories of crime.

The interviews were divided into three different stages to examine the developmental trajectory of rapport in police interview contexts. The stages are similar to the three phases of the PEACE model: 'engage and explain' (beginning), 'account' (middle), and 'closure' (end). As predicted the rapport behaviours overall occurred more frequently at the beginning of the interviews than the middle and end. However, contrary to our predictions the rapport levels dropped in the middle and remained at this level until the end of the interviews. This fits with the PEACE model as interviewers are taught that rapport is a focal part of the engage and explain phase, and rapport in more general contexts is typically associated with the beginning of interactions (Bernieri & Gillis, 2001).

Nevertheless, rapport was associated with IRI at the middle and end of the interviews but not at the beginning. Our findings support those of Walsh and Bull (2012) who found no relationship between the quality of rapport in the engage and explain phase and interview outcome. They argue that rapport must be maintained throughout the interview to accumulate information benefits. It could be that at the beginning of the interview the suspect is mostly listening to the caution and the rules of the interview, and there is little opportunity for the elicitation of IRI. Therefore, any benefits of rapport at the beginning of the interview are not demonstrated until the next stage where the suspect is expected to provide an account.

Interestingly, the pattern in the frequency of the rapport components across the stages of the interview, and their relationship with IRI, changed when each component was examined individually. Positivity was most evident at the beginning and end of the interviews and a dip in positivity was observed in the middle of the interactions. As mentioned above, the findings for positivity may be attributed to category of offence where it

is difficult for officers to maintain positive attitudes during interviews with alleged sex offenders (Oxburgh et al., 2015). This effect may be more pronounced in the account phase where interviewers and suspects discuss the evidence and allegations. Positivity increased slightly at the end of the interviews. The PEACE model encourages officers to use positive behaviours during closure to maintain a relationship for cooperation in future interviews.

The attention component remained consistent throughout. This corresponds with Tickle-Degnen and Rosenthal's (1990) rapport model where attention is said to remain constant throughout interactions consisting of rapport. In the investigative interviewing context, interviewers are trained in active listening and attention is likely to be maintained throughout by both interviewer and suspect due to the high stakes of the interview situation. Attention was significantly correlated with IRI across all three stages demonstrating the importance of maintaining this rapport behaviour throughout the interview

In contrast, coordination was found to occur frequently at the beginning of the interviews and to drop and remain stable in the middle and end stages. This is probably because the interviewers familiarise the suspect with interview process and procedure at the beginning and this involves a lot of agreement; therefore, the first stage of the interview involves all elements of coordination. Nevertheless, coordination correlated with IRI in the middle and end stages of the interview only. Coordination is thought to be the element of rapport that takes the longest time to establish beneficial effects (Tickle-Degnen & Rosenthal, 1990), as the interactants need to be more familiar with one another's style of communication to create the smoothness and reciprocity evident with coordination (Bernieri & Gillis, 2001). Therefore, perhaps the effects of coordination on communication were not immediate and took longer to produce a significant relationship.

The findings for the relationship between attention and IRI, and coordination and IRI, during each stage of the interview, highlight how important it is for rapport to be maintained

throughout the entire interview. It is imperative that training and interview guidance stress that interviewers must attempt to continue to build rapport through to the end of the interview if optimum information is to be obtained.

A limitation of the current research is that findings are based on interviews with one category of offender. Additional research is needed on the influence of these rapport behaviours in interviews with suspects of different crimes and in interviews involving witnesses and victims. It is possible that the pattern and effects of these rapport behaviours vary across these different types of interview. A further limitation of the current research is that the authors had access to transcripts only and therefore the rapport components and indicators do not involve nonverbal aspects of rapport. The expression of rapport will involve non-verbal behaviours (Bernieri et al, 1996). Audio and video clips would permit a more comprehensive investigation of the possible verbal and nonverbal elements of rapport used during investigative interviews. Finally, the rapport components are objective measurements of rapport that were firmly grounded in the rapport literature. However, it would be interesting to examine the relationship between these rapport components and self-reports of rapport from suspects and interviewers. Findings would further support the validity of these indicators of rapport.

Overall, this research study systematically examined a model of rapport that used rapport components grounded in the rapport literature and explored their influence on communication in real world investigative interviews. Taken together the findings create a positive picture of the presence of rapport and the communication benefits of rapport during these interviews. The behaviours measured are currently being implemented by these practitioners and provide a workable framework for police interviewers to use to help identify and maintain rapport during investigative interviews with sex offenders. The study also highlights which rapport components are used most frequently and which have the greatest

impact on the production of IRI. This could help police trainers and supervisors identify which rapport behaviours need to be developed in interview practice in order to gain optimum results.

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