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Observing Rapport-Based Interpersonal Techniques (ORBIT)

To Generate Useful Information
From Child Sexual Abuse Suspects



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ABSTRACT

In the United Kingdom alone, it is estimated that between 550,000 - 850,000 individuals pose varying degrees of sexual risk to children (with a central estimate of 700,000; National Crime Agency, 2021). Whilst the interview process is central to information gathering, empirical research focusing on child sexual abuse (CSA) suspect interviewing is limited. The present study analyses 45 hours of interviews with CSA suspects using the Observing Rapport-Based Interpersonal Techniques (ORBIT) framework. Originally used to code interviews with terrorist suspects (see Alison et al., 2013), this is the first application of ORBIT to another offender population. The ORBIT framework consists of three elements: (i) Motivational Interviewing skills (MI; Miller & Rollnick, 2009) include autonomy, acceptance, adaptation, empathy, and evocation; and (ii) the Interpersonal Behaviour Circle (IBC; Leary, 1955) measures interviewer and suspect interactions along two orthogonal dimensions (control-capitulate and confront-cooperate). Each

IBC quadrant has adaptive (promoting conversation) and maladaptive (hampering communication) facets. The third element of ORBIT is an outcome measure of information that is of evidential significance or intelligence value – the ‘interview yield’. Multilevel structural equation modelling revealed interviewer adaptive/maladaptive behaviours had a direct impact on suspect adaptive/maladaptive behaviours respectively which, in turn, were associated with interview yield. Further, MI was associated with decreased suspect maladaptive (though not increased adaptive) behaviours. The study provides further support for the ORBIT research from Alison et al. (2013) in a new criminal population. It highlights that interviewers who adopt a rapport-based and interpersonally skilled approach will have information-gathering success with CSA suspects.

Keywords: rapport, motivational interviewing, child sexual abuse, suspect interviewing, information gathering

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INTRODUCTION

The scale and impact of Child Sexual Abuse (CSA) is of global significance. In the United Kingdom alone, it is estimated that there are between 550,000 and 850,000 individuals posing varying degrees of sexual risk to children (with a central estimate of 700,000; National Crime Agency [NCA], 2021). Although evidence-based improvements have taken place, especially in the policing of the production and online use of indecent images of children (Long et al., 2016; National Police Coordination Centre, 2017), empirical research is still limited regarding suspect interviewing, and the extent to which this can result in useful information to secure convictions and manage child safeguarding risks.

In this regard, it is important to note that, whilst substantial work is dedicated to policing interviewing in general, interviews with those suspected of the sexual abuse of children pose challenges. In addition to the paucity of independent or corroborative evidence in most of these cases (Benneworth, 2007), sexual offending is underpinned by unique psychological processes (Fischer et al., 1999), including cognitive distortions (Ward et al., 1997), and enhanced feelings of shame, guilt, or remorse (Gudjonsson, 2006). Unsurprisingly, the perceived social condemnation of these crimes increases the likelihood of the perpetrator denying involvement (Quinn et al., 2004). Further, police officers present higher levels of stress when interviewing child sex offenders as compared to other crimes (Soukara et al., 2002), as well as more negative attitudes towards them (Holmberg & Christianson, 2002).

Research in this field is methodologically limited, with many studies based on examination of law enforcement interviewer perceptions, rather than observable behaviours. For example, Read and Powell (2011) identified techniques that assist in obtaining evidence from child sex offence suspects, including focusing on the relationship between the

suspect and the victim, not just the offence itself, and allowing suspects to answer the allegations put to them. Critically, however, these findings were derived from suggestions from police trainers, detectives, expert witnesses, defence barristers, and prosecutors.

When considering perspectives from offenders, the available research is also somewhat limited. Kebbell et al. (2010) interviewed 43 convicted sex offenders and reported that, according to their perceptions, evidence-presenting strategies, ethical interviewing, and a display of humanity by police officers might increase the likelihood of reliable information, whereas interviewer dominance reduced it. Real-life, field-based interviews have been analysed in only a few instances, probably because of the difficulties in accessing data from field-based operational scenarios. Using transcripts of investigative interviews with child sex offenders, Oxburgh et al. (2012) reported that the amount of investigation-relevant information was a function of the appropriateness or inappropriateness of the questions, but not of the use of empathy by police officers (see also Oxburgh et al., 2014).

Gudjonsson (2006) suggests that child sex offenders are often balancing a strong internal need to confess (due to levels of guilt), with a reluctance to do so (due to feelings of shame). Accordingly, CSA suspect interviewing needs to focus on overcoming these feelings of shame, employing a sensitive approach to understand the offender's perspective and emotional needs. It is suggested that establishing rapport, understanding the suspect's perspective, and avoiding a judgemental stance might have success with this offender population (Gudjonsson, 2003, 2006).

The ORBIT Framework

Whilst potentially more informative, the analysis of real-life investigative interviews presents the challenge of requiring reliable ways to quantify behavioural measures. This problem, which is common in other areas of investigative interviewing, was tackled by Alison et al. (2010) when they developed the Observing Rapport-Based Interpersonal Techniques (ORBIT) coding framework for interviewing terrorist suspects (see Alison et al., 2013). The ORBIT framework is built upon the understanding that rapport-building is essential for eliciting meaningful intelligence and information. Rapport-building has demonstrated success in interviewing settings, including reducing counter-interrogation strategies (Alison et al., 2014a), and obtaining information from real-world suspects (Alison et al., 2013), human intelligence sources (Nunan et al., 2020), and crime victims (Kim et al., 2020).

To be clear, our working definition for a model of rapport might be more precisely described as a model of interviewer rapport-based behaviours. As such, we are not commenting on the mindset of, or even necessarily impact on, the suspect, but on the values, beliefs, mindset, and behaviours intentionally adopted by the interviewer. Said approaches might be expected, or at least hypothesised, to make any interaction smoother and more productive. Thus, our definitional system loads more on the interviewer than the suspect, and we are examining the impact of an interviewer's deliberately adopted rapport-based behavioural repertoire (including values, interpersonal behaviours, and general approach). The behaviours displayed by officers should include objective, non-judgemental questioning, honesty, and the absence of deceit, persuasion, or manipulation. Importantly, interviewers should directly and overtly acknowledge that the suspect has choice in what they say or do not say. Further, it is incumbent on the interviewer to adjust their interpersonal behaviours in a prosocial and adaptive way to make these choices easier (and never harder) for the suspect. Chiefly, rapport is not befriending, sympathising, or agreeing with the suspect, nor is it

condoning their behaviours, but rather is a working engagement based on dignity, respect, and unconditional positive regard. In summary, our definition of rapport includes only observable behaviours on the part of the interviewer that suggest a degree of emotional self-regulation, objectivity, and compassionate, adaptive responses to the individual in front of them.

ORBIT consists of three elements. The first of the two independent measures are based on Motivational Interviewing skills (MI; Miller & Rollnick, 2009). The MI measures are derived from extensive literature in the counselling domain and include concepts of autonomy, acceptance, adaptation, empathy, and evocation. MI skills have been shown to be effective in promoting communication in both therapeutic (for a review, see Dunn et al. 2001) and criminal settings (e.g., Alison et al., 2013). A literature review by Tedeschi and Jung (2018) suggests resistant or uncooperative suspects often provoke authoritative and more coercive interviews. MI provides a style that officers can use to effectively, and sensitively, interview suspects in a humane way. They also note that there is a paucity of empirical research in the context of police investigative interviews (beyond those of human intelligence gathering with terrorist suspects); a paucity this paper seeks to begin to address.

The second independent measure is based on the Interpersonal Behaviour Circle (IBC; Leary, 1955). The IBC measures interactions between interviewer and suspect along two orthogonal dimensions control-capitulate and confront-cooperate. Each of these dimensions has an adaptive facet (styles that promote communication) and a maladaptive facet (styles that hamper communication) for the interviewer, as well as for the suspect. For instance, a cooperative interviewer may be adaptively warm and friendly, or maladaptively overfamiliar and obsequious; similarly, a capitulating suspect may be adaptively modest and humble, or maladaptively formulaic and disengaged. Derived from the IBC, two interviewing behavioural styles are formed that are shown to facilitate communication: (i) interpersonal competence is the ability to avoid

adopting maladaptive behaviours, and (ii) interpersonal versatility is being flexible and responsive to the suspect, employing the appropriate adaptive behaviour at the right time (Christiansen et al., 2017).

The third element of ORBIT includes an outcome measure of information; the 'interview yield'. This relates to information revealed in the suspect interaction that is of evidential significance or intelligence value. Specifically, yield is made up of information pertaining to the capability, opportunity, motive, and PLAT descriptions (i.e., people, locations, actions, and times) of the offender and offence (see Table 1 for a further description).

The ORBIT framework has successfully been used to analyse how the different types of interactions between police interviewers and terrorist suspects affect the amount of useful information generated (Alison et al., 2013). Specifically, Alison et al. (2013) found that MI is associated with adaptive interpersonal behaviour in suspects which, in turn, is associated with yield. In contrast, even minimal expression of maladaptive interpersonal interviewer behaviour is associated with increased maladaptive suspect behaviour and decreased yield. Similarly, in their analysis of counter interrogation tactics, Alison and colleagues (2014a) found that MI was associated with reduced resistance, while maladaptive interviewer behaviour had the inverse effect. Recently, Surmon-Böhr et al. (2020) demonstrated that what is critical is embracing the values of MI, rather than employing a set of specific 'tactical' techniques (e.g., limiting choice; coercing a confession). They found that any approach antithetical to MI had a negative impact on interview success.

Kim et al. (2020) applied the ORBIT framework to code investigative interviews with sexual offence victims, demonstrating that ORBIT strategies were associated with increased yield though positively influencing adaptive interactions between interviewer and victim, and reducing maladaptive ones. Further, interviewer adaptive behaviours increase victim adaptive behaviour, which was positively associated with yield. Taken together, this

shows that rapport, as defined by the ORBIT framework, can have a significant impact on the success of interviews in an investigative context.

Recently, Giles et al. (2021) evaluated the economic impact of using rapport-based interviewing approaches with CSA offenders. It was found that training in adaptive and MI could contribute to cost savings between £19-£78 million (annual unit costs) increasing to £238-£639 (lifetime costs) for online child sexual abuse across England and Wales; and £157-£639 million (annual unit costs) increasing to £2-£8 billion (lifetime costs) for all child sexual abuse interviewing. This research demonstrates the economic savings possible with investments in interview training and improvements to interview approaches.

The Present Study

This paper uses the ORBIT framework to examine policing interviewers' rapport-based behaviours with CSA suspects, and to determine whether rapport helps elicit meaningful intelligence and information in this context. Having been successfully applied to a convicted terrorist sample, this research is the first application of ORBIT to a new offender population. As noted, the current CSA interviewing literature discusses little beyond the appropriateness of questions asked, a display of humanity on the interviewer's part, and the deleterious effect of interviewer dominance. However, it highlights that CSA suspects are often balancing a desire to confess, due to feelings of guilt, with a reluctance to do so, due to the perceived social condemnation of their offence. Hence, a sensitive, non-judgemental approach may prove successful in overcoming these feelings of shame, and lead to information-gathering success. In line with previous research, we hypothesised the following:

Hypothesis 1: In interviewers, MI-consistent strategies will be positively associated with adaptive interpersonal behaviours and negatively associated with maladaptive interpersonal behaviours.

Hypothesis 2: Interviewers' adaptive interpersonal behaviours will increase suspects' adaptive

interpersonal behaviours (with the same associations seen for maladaptive behaviours).

Hypothesis 3: The effects of the interviewer behaviour on yield will occur via their effects on suspect adaptive and maladaptive behaviour.

METHOD

Data Set. The data set included audio and video recordings of 35 policing interviews of 25 suspects of CSA offences (with all cases leading to a conviction). Suspects included online only offenders ($n = 17$), contact offenders ($n = 2$), and people who offended both online and contact (dual offenders; $n = 6$). Online offences included possessing, making, taking, and/or distributing indecent images of children, whereas offline offences included rape, assault by penetration, and sexual assault.

All suspects were interviewed by two interviewers throughout the investigation. As in Alison et al. (2013), whilst the focus of observations was the primary interviewer, the supporting interviewer was also coded if their contribution to the interview was greater than five minutes within the segment; this occurred in 33 (19%). Adapted from the original 45-minute coding periods, reflective of the average length of audio tapes used in UK police interviewing, the revised coding framework focuses on 15-minute periods. This is a result of several coding and analysis reviews, providing a more detailed and granular capture of interview interactions.

The majority had undergone Advanced Interviewer Training (Tier 3), and none had received training inputs on the ORBIT framework. The total number of 15-minute interview segments analysed was 172. The number of segments for each suspect ranged from 2 to 20 ($M = 7.30$; $SD = 4.67$). This represented almost 45 hours of footage and the largest sample of CSA suspect interviews to date.

Cases were provided by the United Kingdom's NCA and were selected for the current study when they met the following criteria: they were convicted, closed cases (offenders had been convicted and had no appeals pending), convictions had taken place between 2016 and 2019, and the interview sequence was available in full. Therefore, the current sample represents a subset of 40% of the material made available.

A Data Protection Impact Assessment was established in relation to the selection of cases, data recording and storage, the full anonymity of the offenders and interviewers, and the dissemination and reporting of the data more widely.

Interview Coding. The manual developed by Alison et al. (2010) was used to code the behaviour of the participants in the interview. Interviewer behaviour was coded into two elements measuring the following: (i) GMIS - Global Motivational Interviewing Scores, and (ii) IBC-I - Interpersonal Behaviour Circle: Adaptive and Maladaptive - Interviewer. Suspect behaviour was coded into two variables by measuring: (i) IBC-D - Interpersonal Behaviour Circle: Adaptive and Maladaptive - Detainee (this paper will refer to the detainee as 'suspect'), and (ii) IYA - Interview Yield Assessment (information revealed in the suspect interaction of evidential significance or intelligence value). The two coders first agreed on specific segments from a variety of clips, ensuring consistency in coding. Then, the overall 'atmosphere' of the 15-minute segments was scored, not individual behavioural utterances. Interrater reliability analysis was used to compare the scoring from the two coders. Table 1 presents a summary of each of the elements contained within ORBIT. Further details can be found in Alison et al. (2013).

TABLE 1. *ORBIT Codes and Descriptions (Adapted from Alison et al., 2010)*

Element	Name	Description	Scoring
GMIS	Acceptance	The interviewer communicates unconditional positive regard for the suspect.	0 (<i>absent</i>) – 5 (<i>high</i>)
	Empathy	The interviewer communicates that they understand and/or have tried to accurately understand the suspect's perspective.	
	Adaptation	The interviewer can adapt to responses by suspect and manage a fluid interview format (e.g., timeline jumps, deviation from interview plan).	
	Evocation	Attempts on the interviewer's part to draw out the beliefs and views of the suspect.	
	Autonomy	The interviewer shows encouragement/support that it is the suspect's right to choose to confess or not.	
IBC- Interviewer (IBC-I)	Interviewer Adaptive (IA)	Mean score of interviewer adaptive control, capitulate, confront, and cooperate behaviours.	0 (<i>absent</i>) – 3 (<i>high</i>)
	Interviewer Maladaptive (IM)	Mean score of interviewer maladaptive control, capitulate, confront, and cooperate behaviours.	0 (<i>absent</i>) – 3 (<i>high</i>)
IBC- Suspect (IBC-S)	Suspect Adaptive (SA)	Mean score of suspect adaptive control, capitulate, confront, and cooperate behaviours.	0 (<i>absent</i>) – 3 (<i>high</i>)
	Suspect Maladaptive (SM)	Mean score of suspect maladaptive control, capitulate, confront, and cooperate behaviours.	0 (<i>absent</i>) – 3 (<i>high</i>)
IYA	Capability	The suspect's knowledge, skills, or abilities that enabled them to commit the offence.	0 (<i>absent</i>) – 3 (<i>high</i>)
	Opportunity	Information relating to access or circumstance to commit the offence.	
	Motive	Information about possible reasons for committing the offence.	
	PLAT (people, locations, actions, and times)	Specific details about /people/locations, actions, and timings relevant to the offence.	

Note. GMIS = Global Motivational Interviewing Score, IBC = Interpersonal Behaviour Circle, IYA = Interview Yield Assessment

Intercoder Agreement. Prior to working on the formal policing data, two experienced coders carried out several hours of training and review on non-classified police interviews with similar offenders. They used a subset of 12 interviews, which made up 36 comparable segments, to check that Interrater reliability (IRR) was adequate for all variables used in the study. These interviews and segments were included in the final sample to be analysed. Cohen's kappa (κ) was used to measure inter-rater agreement, as Cohen's (1960) assumptions were met: the units are independent; the categories of the scale are independent, mutually exclusive, and exhaustive; and the judges operate independently. Different categories have been suggested for the kappa statistic, though most authors use variations of Landis and Koch's (1977) classification into poor (<0), slight ($0-0.20$), fair ($0.21-0.40$), moderate ($0.41-0.60$), substantial ($0.61-0.80$), and almost perfect (>0.80), even when these authors acknowledge that "these categories are clearly arbitrary" (Landis & Koch, 1977, p. 165). To provide a conservative measure, we calculated confidence intervals for kappa, and the classification was made with the lower bounds of the intervals instead of with the estimates themselves (Tractenberg et al., 2010). In addition, bearing in mind the high sensitivity of Kappa values to issues like sample size and the uneven distribution of answers in some items (Von Eye & Mun, 2005), percentage agreements were also calculated.

Table 2 summarises the intercoder agreement indices, based on the inter-rater reliability sample. Kappas for 77 (of the 85) coding categories of the framework indicated moderate to almost perfect agreement between coders. As mentioned above, these codes were calculated by rating the overall

'atmosphere' of the 15-minute segments, not individual behavioural utterances, and percentage agreements below reflect the similarity between the two coder scores. These scores were deemed acceptable, though it should be noted there were five instances of fair agreement ($0.21-0.40$) and three scores that could not be calculated because the variable was a constant for at least one of the coders. This may have limited the results. Of note, reanalysis of the IRR using dichotomous categories (presence or absence of behaviours) rather than scales ($0-3$ or $0-5$) found 95.8% of percentage agreements improved to above 80% (the remaining two at 78%) and all kappa scores were moderate to almost perfect. This may indicate that small differences in interpretation of behaviour (e.g., mild to moderate) may make it more difficult to apply subtler coding to both the 8 categories highlighted, and those with lower percentage agreement scores.

Data Analysis. As in previous research (e.g., Alison et al., 2013), we created latent variables for MI and interview yield. Due to the data being nested (i.e., we had repeated measurements in the same suspect), the data does not have independence of errors, so we ran a multilevel structural model, wherein we added a random intercept for each case. This accounts for the shared variance in the measures that is a product of measurements being taken in the same interviewer and allows us to parse out general associations between the measures in the sample as a whole and variation across the specific individuals measured. We will be concentrating on the former in the report as we have limited statistical power in the latter. It is notable though that the effects reported below are consistent with the effects seen on the individual case level.

TABLE 2. Inter-Coder Agreement

Category	Variable	95% CI			%
		Kappa	Lower bound	Upper bound	
GMIS	Acceptance	.75	.63	.86	47
	Empathy	.55	.39	.70	33
	Adaptation	.64	.50	.79	58
	Evocation	.55	.38	.72	50
	Autonomy	.70	.54	.86	33
IBC	Contr	.30	.10	.50	33
Interviewer Adaptive	Contr/Coop	.71	.56	.87	61
	Coop	.56	.34	.78	67
	Coop/Capit	.87	.72	1.01	75
	Capit	.64	.41	.88	56
	Capit/Confr	.46	.27	.70	47
	Confr	.47	.24	.70	50
	Contr/Confr	.57	.35	.79	61
	IBC	Contr	.59	.44	.74
Interviewer Maladaptive	Contr/Coop	.80	.64	.95	69
	Coop	.73	.51	.96	83
	Coop/Capit	.65	.26	1.28	94
	Capit	.80	.54	1.06	83
	Capit/Confr	.69	.48	.91	78
	Confr	.69	.51	.86	78
	Contr/Confr	.52	.30	.74	61
	IBC	Contr	.75	.62	.88
Suspect Adaptive	Contr/Coop	.66	.49	.84	58
	Coop	.51	.31	.72	50
	Coop/Capit	.29	.05	.53	47
	Capit	.54	.40	.68	58
	Capit/Confr	.73	.51	.96	75
	Confr	.60	.40	.80	81
	Contr/Confr	.49	.26	.72	56
	IBC	Contr	.61	.34	.88
Suspect Maladaptive	Contr/Coop	.68	.53	.84	72
	Coop	.77	.63	.90	64
	Coop/Capit	.58	.42	.75	58
	Capit	.51	.33	.69	50
	Capit/Confr	.51	.24	.78	75
	Confr	.72	.47	.97	89
	Contr/Confr	.81	.66	.95	75
	IYA	Capability	.67	.40	.95
	Opportunity	.78	.60	.97	81
	Motive	.65	.44	.87	78
	PLAT	.71	.54	.89	78

Note. GMIS = Global Motivational Interviewing Score, IBC = Interpersonal Behaviour Circle, IYA = Interview Yield Assessment, Contr = Control, Coop = Cooperate, Capit = Capitulate, Confr = Confront.

Model Fitting. Due to the ORBIT measures being ordinal with a limited number of response categories, data were fitted using a diagonally weighted least squares estimator (see Li, 2016a; 2016b). Four tests of model fit were carried out. Firstly, the normed χ^2 (i.e., the Chi squared statistic divided by its degrees of freedom: χ^2/df). Values between 1 and 2 are indicative of an excellent model fit and between 2 and 3 a good model fit, and less than 5 as acceptable. Next the comparative fit index (CFI), values above .90 are acceptable and above .95 are considered good. The root mean square error of approximation (RMSEA) parsimony-adjusted measure was reported, whereby values below .08 are acceptable and below .06 are good. Finally, the standardised root mean residual (SRMR) whereby values below .08 are considered a good fit (see Carmines & McIver, 1981; Ullman, 2001; Hu & Bentler, 1999). Individual associations within the model are reported using regression coefficients and their standard error along with their associated p-value and 95% confidence intervals.

Ethics. Due to the material being both sensitive and confidential, in addition to obtaining ethical approval from University of Liverpool's Research Ethics Committee, a strict memorandum of understanding was agreed between the NCA's Threat Leadership Command and the research team. Policing interviews in the UK are the property of the police services or NCA that conducted the interviews, so consent to use them for research was sought centrally from the NCA. Further, all researchers involved in the coding of data were vetted prior to gaining access to the material and were attached to the NCA due to the nature and sensitivity of the work. To ensure confidentiality, no identifiable information was recorded at any time while coding, and the material resulted in an anonymized data file.

RESULTS

Descriptive statistics for variables are shown in Table 3. See Appendix for variables split by offence type (online/online and contact).

TABLE 3. Descriptive Statistics for all Measures

Category	Variable	<i>M</i> (<i>SD</i>)	ICC
IYA	Capability	0.80 (0.88)	.24
	Opportunity	0.70 (0.83)	.14
	Motive	0.63 (0.85)	.39
	PLAT	1.23 (0.94)	.31
GMIS	Acceptance	3.72 (1.49)	.40
	Empathy	3.52 (1.37)	.38
	Adaptation	3.26 (1.30)	.22
	Evocation	3.35 (1.26)	.34
IBC Interviewer	Autonomy	3.65 (1.15)	.41
	Adaptive	7.77 (2.42)	.36
	Maladaptive	2.26 (2.63)	.36
IBC Suspect	Adaptive	4.05 (1.97)	.35
	Maladaptive	2.10 (1.83)	.48

Note. interclass correlations (ICC) reflect the % of variance in each variable accounted for by subject identifier. GMIS = Global Motivational Interviewing Score, IBC = Interpersonal Behaviour Circle, IYA = Interview Yield Assessment, PLAT = people, locations, actions, times.

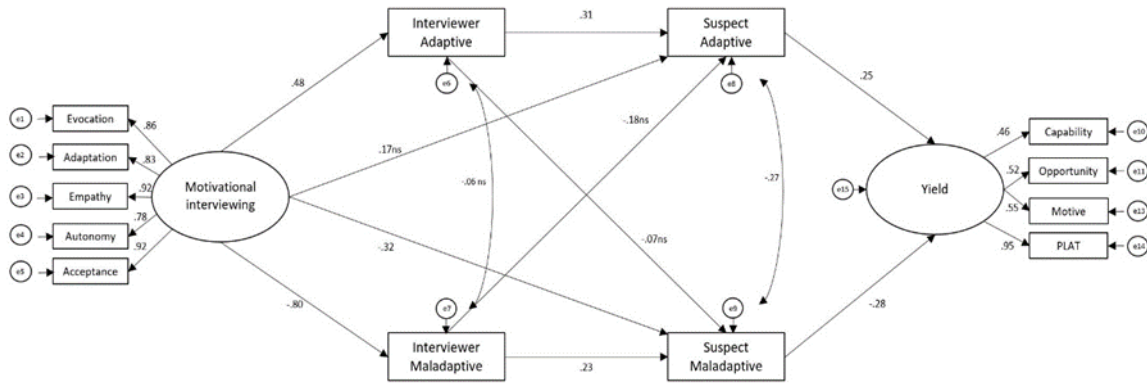
Latent Variable Fit. Yield was an excellent fit to the data $\chi^2(4) = 1.38, p = .848$ ($\chi^2/df = .345$), CFI > .999, RMSEA < .001; SRMR = .007). The motivational interviewing latent variable was a good to acceptable fit to the data barring the RMSEA, $\chi^2(10) = 39.54, p < .001$, ($\chi^2/df = 3.954$), CFI = .966, RMSEA = .131, SRMR = .022. In both cases all items were significantly loaded onto the factor (all $ps < .001$).

Overall Model Fit. The hypothesised model (Figure 1) was a good fit to the data, $\chi^2(118) = 143.50, p = .055$, ($\chi^2/df = 1.216$); CFI = .981; RMSEA = .035; SRMR = .045). This was compared to an alternative model in which there were direct associations between motivational interviewing and yield as well as interviewer adaptive/maladaptive behaviours and yield (which we did not hypothesise to be directly associated); this model had a marginally poorer fit, $\chi^2(112) = 146.356, p = .016$, ($\chi^2/df = 1.308$); CFI = .974;

RMSEA = .042; SRMR = .044 (note: AIC/BIC values usually used for model comparisons cannot be produced with a diagonally weighted least squares estimator). Notably the pattern of results for the

alternative model is identical to that described below with none of the three additional direct effects on yield being significant ($p > .312$).

Figure 1. Hypothesised Structural Model



Note. Values are standardised regression coefficients and significant at $p < .05$ unless otherwise stated (ns).

Direct Associations. As can be seen in Table 4, using MI was associated with improved interviewer adaptive behaviours and decreased interviewer maladaptive behaviours; the effect was more substantial for decreasing maladaptive behaviour than increasing adaptive (and significantly so, $Z = 6.29$, $p < .001$). Moreover, MI was associated with decreased suspect maladaptive behaviour but not increased adaptive behaviour. Interviewer adaptive behaviours were associated with significantly increased suspect adaptive behaviour but had no significant association with suspect maladaptive behaviour. A comparable effect was found with

interviewer maladaptive behaviour, inasmuch that it was associated with increased suspect maladaptive behaviour without being significantly associated with suspect adaptive behaviour. Suspect adaptive behaviour was associated with increased yield, while maladaptive suspect behaviour was associated with decreased yield. Finally, interviewer adaptive behaviour did not have a significant correlation with interviewer maladaptive behaviour ($p = .530$), however there was a significant negative correlation between suspect adaptive and maladaptive behaviour ($p < .001$).

TABLE 4. Direct Effects in the Hypothesised Model

	B	SE	p	95% CI	
				Lower	Upper
SA -> Yield	0.062	.015	<.001	0.033	0.092
SM -> Yield	-0.081	.023	<.001	-0.126	-0.036
MI->SA	0.371	.198	.061	-0.018	0.759
MI->SM	-0.614	.185	.001	-0.976	-0.251
MI->IA	1.318	.087	<.001	1.148	1.489
MI->IM	-2.344	.138	<.001	-2.617	-2.071
IA->SA	0.259	.041	<.001	0.170	0.337
IA->SM	-0.047	.042	.262	-0.129	0.035
IM->SM	0.152	.052	.004	0.050	0.254
IM->SA	-0.134	.076	.076	-0.283	0.014

Note. SA = Suspect Adaptive, SM = Suspect Maladaptive, MI = Motivational Interviewing, IA = Interviewer Adaptive, IM = Interviewer Maladaptive.

Indirect Associations. As shown in Table 5, MI was associated with increased suspect adaptive behaviour through interviewer adaptive behaviour; similarly, it was associated with decreased suspect maladaptive behaviour through interviewer maladaptive behaviour. Further, interviewer

adaptive behaviours have an indirect effect on yield through increased suspect adaptive behaviour, while interviewer maladaptive behaviour is associated with decreased yield through its impact on suspect maladaptive behaviour. All other indirect associations were not significant.

TABLE 5. *Indirect Effects in the Hypothesised Model*

	B	SE	p	95% CI	
				Lower	Upper
MI -> IA->SA	0.342	.060	<.001	0.225	0.459
MI -> IM->SA	0.315	.170	.064	-0.018	0.648
MI-> IA->SM	-0.062	.055	.256	-0.169	0.045
MI-> IM->SM	-0.356	.115	.002	-0.581	-0.131
IA->SA->Yield	0.016	.005	<.001	0.007	0.025
IA->SM->Yield	0.004	.003	.260	-0.003	0.011
IM->SA->Yield	-0.008	.005	.103	-0.018	0.002
IM->SM->Yield	-0.012	.006	.040	-0.024	-0.001

Note. SA = Suspect Adaptive, SM = Suspect Maladaptive, MI = Motivational Interviewing, IA = Interviewer Adaptive, IM = Interviewer Maladaptive.

DISCUSSION

This study expands on the existing taxonomy for observing rapport-based interviewing techniques (Alison et al., 2013) within the CSA interviewing context. As predicted, interviewer MI-consistent skills were positively associated with their adaptive behaviour and negatively associated with their maladaptive behaviour (with the impact on the latter being more substantial), while MI skills were also associated with decreased suspect maladaptive behaviour. The second hypothesis was also supported as interviewer adaptive/maladaptive behaviours had a direct positive impact on suspect adaptive/maladaptive behaviours respectively. It should be noted, however, that there was no evidence for any 'crossover' (i.e., adaptive interviewer behaviour reducing suspect maladaptive behaviour or vice versa). Finally, in line with the third hypothesis, adaptive suspect behaviours were associated with increased yield and maladaptive behaviours were associated with decreased yield. Indirect effects suggest these effects are likely to be impacted by interviewer behaviours.

The results concerning MI sit in line with a wealth of research from the therapeutic literature (Dunn et al., 2001; VanBuskirk & Wetherell, 2014) now

successfully applied to suspect investigative interviewing (Alison et al., 2013, 2014a; Surmon-Böhr et al., 2020). Again, these findings suggest interviewers able to establish an empathic, respectful, and non-judgmental atmosphere will have information-gathering success. It may seem somewhat peculiar applying a therapeutic approach directed at behavioural change to what is potentially an adversarial environment. However, in the UK, the central objective is a search for truth, rather than a combative to-and-fro between interviewer and suspect. In addition, principles of choice and autonomy are enshrined in the right to silence and the fact that officers have a duty of care to all individuals in their custody. Indeed, in CSA cases they also have a requirement to consider welfare and risk. As such, the humanistic principles within MI are critical for suspects being interviewed.

The findings regarding the second hypothesis are largely consistent with those of Alison et al. (2013), where it was found that maladaptive and adaptive relating are mutually influencing (i.e., negative relating from the interviewer begets negative relating from the suspect, whilst positive relating promotes positive relating). Of particular importance, maladaptive techniques further ossify

suspects' commitment to negative patterns of relating – expressions of attacking, punitive, or sarcastic behaviour tended to lead to either 'no comment' or further commitment to previous statements (see Alison et al., 2014a). On the other hand, these results differ from the work of Alison et al. (2013) in that no significant associations were found between interviewer adaptive and suspect maladaptive, nor between interviewer maladaptive and suspect adaptive behaviours. However, these findings do not cast doubt on the efficacy of adaptive behaviours or inefficacy of maladaptive behaviours, but rather they highlight that with a highly entrenched maladaptive responder, any positive adaptive approaches on the interviewer's part may fail to have any effect. Taken together, these results reinforce the idea that it may not always be possible to improve engagement, but it is always possible to make it worse. It is notable that results are largely consistent between this sample of CSA offenders and past research with convicted terrorists, highlighting the breadth of the utility of rapport in the investigative interviewing context.

It is worth noting that whilst maladaptive interviewer behaviours increased suspect maladaptive behaviours, these effects were not as pronounced as they were with the terrorist sample previously studied (Alison et al., 2013). Whilst such interviewing styles should still be avoided, the data indicates they may not be as damaging to interview success with CSA suspects. This might be due to the social condemnation associated with CSA sex offences (Quinn et al., 2004). Thus, a suspect committed to 'no comment' responses or not cooperating may be less affected by maladaptive interviewing. Nonetheless, considering the potential difficulties with promoting conversation with CSA suspects and interviewers' increased emotional involvement in child victim cases (Oxburgh et al., 2015), it is more critical than ever that those interviewing employ the appropriate adaptive communication styles whilst avoiding maladaptive ones.

It is also notable that this cohort of interviewers displayed mainly interpersonally skilled adaptive and positive relating patterns, with few instances of

maladaptive, negative relating ones, no doubt in part attributable to the information gathering (as opposed to adversarial) approach used by interviewers. This somewhat limited the opportunity to evaluate the full impact of maladaptive interpersonal behaviours on suspect yield. Nonetheless, adaptive, and maladaptive interviewer behaviours had a significant indirect effect on yield through their effect on suspect behaviour, indicating that even with limited data on maladaptive behaviours, these findings still highlight their deleterious impact on information gathering efforts.

Furthermore, in terms of interpersonal behaviour, most suspects displayed more adaptive than maladaptive styles. This contradicts the often-held view that suspects are de facto non-compliant and are all committed to frustrating the attempts of interviewers to interact positively, though it is obvious that at least part of this adaptive behaviour was facilitated by the interviewers' adaptive style. Moreover, just over a third ($n = 9$) of the suspects had no solicitor at any point during the coded interviews, and some had a solicitor for part of the time. Thus, it is impossible to disentangle a solicitor's suggestion to enact the right to remain silent, from a suspect's deliberate attempt to withhold critically incriminating information. Nonetheless, there were no instances of interviewers attempting to imply that any suspect was using this right as a strategy to disrupt the interview. In fact, all interviewers repeatedly referred to the suspect's right to silence and ensured that this was clear throughout the (sometimes) many hours of 'no comment' interviews. This is due to the previously noted professionalism of this cohort of interviewers. Interestingly, however, the very principles of the Right to Silence are concordant with the therapeutic broader notion of autonomy – one of the most significant indicators of MI spirit and, interestingly, one of the most salient features established in this study as reducing resistance and increasing yield. These findings are consistent with previous research demonstrating the importance of adopting the spirit of MI to gather useful information (Surmon-Böhr et al., 2020).

The current research looks at two offline-only sex offender suspects, with a larger portion of the sample being online-only ($n = 17$). Previous research has identified differences between online-only, offline-only, and mixed sex offender suspects, including cognitive distortions, antisociality, and victim empathy levels (Babchishin et al., 2014). Whilst the ORBIT framework has demonstrated success in using a rapport-based adaptive interviewing style regardless of the individual's background, future research should look to explore the current dataset and expand on it to include more offline-only CSA individuals for the potential differences in interaction styles, and the effects of different interviewing behaviours on different types of suspects. This would bolster the toolkit already available for interviewers, perhaps highlighting varying interaction styles from different offender types, and how best to interview them.

Future studies might also look to analyse a sample of interviewers with greater displays of maladaptive behaviour. This will allow the data to be truly representative of the impact of these interviewing styles. Moreover, this paper has looked at adaptive and maladaptive behaviours together. A natural progression of this work would be to break these down and individually analyse the adaptive and maladaptive behaviours. Research able to identify specific maladaptive styles (from the eight orthogonal behaviours noted previously) might be particularly useful for interviewers so that those interaction styles especially deleterious to information gathering efforts with CSA suspects can be avoided at all costs.

It should be noted that the IRR analysis showed five scores had 'fair' agreement and three were not calculated as the variable was a constant for at least one of the coders. Further the present sample size ($n = 35$) is slightly below the minimum required to calculate kappa (which is 42) so percentage agreements were also calculated. Both issues might have limited the results. Notably, low percentage agreement scores were not the result of disagreement on the presence (or absence) of given behaviours, but the result of difference in agreement on the intensity of said behaviours. Indeed,

analysing behaviours as dichotomous variables (i.e., 0 = *absence*, 1 = *presence*, rather than rated 0-3 or 0-5) improved scores dramatically, with all kappa scores in the highest ranges (15.2% 'moderate'; 47.8% 'substantial'; and 37% - 'almost perfect'). This may indicate that small differences in interpretation of behaviour (e.g., mild to moderate) may make it more difficult to apply subtler coding to some behaviours. Hence, whilst lower IRR scores may have affected these results, it is a disparity on the judgement of the intensity of interviewer and suspect behaviours, and very rarely the presence (or absence) of these interaction styles.

Finally, the original ORBIT research by Alison et al. (2013) was followed by two further papers investigating the application of ORBIT to reducing terrorist suspects' counter interrogation techniques (CITs; Alison et al., 2014a, 2014b), finding that the adaptive, rapport-based interview techniques advocated by ORBIT are successful in reducing said CITs. Whilst CSA offenders will not have counter-interrogation training, the current study could be followed up with research looking at withholding tactics, such as 'no comment' responses or remaining silent, or distraction approaches employed by CSA offenders. Such research would provide further valuable information for those interviewing suspects on the likely responses from different CSA offender populations, and to evaluate the application of specific interview techniques in these scenarios.

IMPLICATIONS

The present study demonstrates the applicability of ORBIT's interview framework, previously used with terrorist detainees, to a new criminal population group. It highlights how the use of MI as well as adaptive behaviours, whilst avoiding maladaptive ones, has a direct positive effect on information gathering efforts in interviews. These findings prove promising for the application of ORBIT to other criminal populations, and future research should look to explore these further. Moreover, these findings are in line with evaluative research that demonstrates how such behaviours can lead to financial and time savings for law enforcement

forces if implemented correctly (Giles et al., 2021). Thus, further support for the use of a rapport-based, interpersonally skilled interviewing approach is presented.

Recently, research has explored the application of ORBIT to interviewer training. The UK's national counter-terrorism advanced interviewer training course (Alcyone) has proven successful in improving rapport-based interviewing (Alison et al., 2019). Alison et al. (2020) found that officers who had received the Alcyone course used more rapport-based strategies and adaptive interpersonal behaviours, producing greater interview yield when compared to non-trained officers. Resultantly, these interviewers were more objective and less judgemental, made genuine efforts to be empathic, and emphasised the suspect's right to talk or not. Considering the applicability of ORBIT to a CSA sample as found in the current paper, there is clearly an opportunity for training officers in a rapport-based and adaptive style when interviewing CSA suspects. Indeed, such training will likely lead to increased gathering of useful information in the interview room and financial savings for law enforcement forces nationally.

CONCLUSION

As the first field analysis of convicted CSA suspects, this research supports the use of a rapport-based, adaptive interviewing style with this criminal population. It has demonstrated again how maladaptive and adaptive relating influence each other, where negative interviewer behaviours beget negative suspect behaviours whilst positive interviewer behaviours promote positive suspect behaviours. These findings are consistent with previous research conducted on samples of terrorist suspects, and further highlights the efficacy of adopting a rapport-based approach to interviewing (Alison et al., 2013). Further, now the ORBIT interviewing framework has been successfully applied to two different criminal population groups, future research exploring the utility of this interviewing style with other offender suspects is warranted. Thus, in line with a corpus of research on the ORBIT framework, this study highlights the efficacy of a rapport-based, empathic, and interpersonally skilled interviewing approach with CSA suspects for information gathering efforts.

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Appendix

Descriptive Statistics for all Measures Split by Online Only and Online + Offline Offenders

Category	Variable	Offender type	
		Online only	Online + offline
IYA	Capability	0.95 (0.88)	0.53 (0.82)
	Opportunity	0.70 (0.85)	0.69 (0.79)
	Motive	0.67 (0.90)	0.54 (0.73)
	PLAT	1.31 (0.93)	1.08 (0.95)
MI Global	Acceptance	3.91 (1.26)	3.36 (1.81)
	Empathy	3.66 (1.10)	3.25 (1.76)
	Adaptation	3.47 (1.10)	2.86 (1.55)
	Evocation	3.51 (1.05)	3.05 (1.55)
IBC Interviewer	Autonomy	3.77 (1.04)	3.42 (1.33)
	Adaptive	8.01 (2.39)	7.31 (2.42)
IBC Suspect	Maladaptive	1.58 (1.72)	3.57 (3.47)
	Adaptive	4.23 (1.90)	3.69 (2.08)
	Maladaptive	2.00 (1.68)	2.29 (2.10)

Note. Online= 113 measurements, online + offline = 59 measurements; values are mean and SD. IBC = Interpersonal Behaviour Circle, MI = Motivational Interviewing, IYA = Interview Yield Assessment.

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