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Observing Rapport-Based Interpersonal Techniques to Gather Information From Victims

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The observing rapport-based interpersonal techniques (ORBIT) behavioral coding manual (Alison, Alison, Noone, Eltnib, & Christiansen, 2013) was used to code 103 hr of investigative interviews with sexual offense victims—a sample of 86 single-victim cases conducted by 26 police interviewers in South Korea. In all cases, there was a subsequent conviction. ORBIT is comprised of two key psychological approaches previously used most often in counseling but applied here to law enforcement. These are (a) humanistic approaches that are honest, empathic and nonjudgmental and (b) an interpersonal behavior circle of dyadic interaction between interviewer and victim based on power-submission and conflict-cooperation dimensions, which can be managed in a prosocial (adaptive) or antisocial (maladaptive) way by the interviewer. Information/evidence yield was coded as a dependent variable. Coding was conducted every 15 min, representing 316 coding units. Results showed that (a) humanistic approaches positively influence adaptive interactions between interviewer and victim while simultaneously reducing maladaptive ones, the consequence of which is an increase in yield; (b) interviewer adaptive behaviors directly increase victim adaptive behavior (with the same effect for maladaptive behavior); and (c) victim adaptive behavior is positively associated with interview yield, and victim maladaptive behavior is negatively associated with it. These results suggest that interviews conducted in a humanistic-consistent fashion strongly positively influence adaptive victim behavior, which, in turn, increases interview yield.

Keywords: humanistic counseling, interpersonal behavior circle, sexual crime, victim

Interviewing victims is one of the most challenging aspects of sexual offense investigations. Victims can be unwilling to reveal information (Malloy, Lyon, & Quas, 2007), specifically within a formal interviewing setting (Hershkowitz, Horowitz, & Lamb, 2005) and it is crucial to obtain information because they are often the only source of information.

In the United Kingdom, the "planning and preparation, engage and explain, account, closure, and evaluation" (i.e., PEACE) model was introduced to ensure a nonaccusatory, information-gathering approach to interviewing (Milne & Bull, 1999). PEACE is a conceptual phased framework that places importance on objectivity and fairness to ensure successful interview with suspects, witnesses, and victims. *Achieving Best Evidence in Criminal Proceedings* was published by the Ministry of Justice (2011) and, focusing on video-recorded interviews with vulnerable and intimidated victims/witnesses, it contained recommendations for skills to be employed to reduce victim/witness reluctance and encourage them to recall accurate information. Moreover, the National Institute of Child Health and Human Development (NICHD) interview protocol (Lamb, Brown, Hershkowitz, Orbach, & Esplin, 2018)

has been widely used for child victims and has been well tested in Canada, the United Kingdom, Israel, and the United States (Cyr & Lamb, 2009; Lamb et al., 2009; Orbach et al., 2000; Sternberg, Lamb, Orbach, Esplin, & Mitchell, 2001). The NICHD protocol provides a systematic approach, covering all phases of the interview, for interviewers to help child victims to generate accounts. It includes, for example, explaining basic rules, building rapport, providing a recollection exercise of previous experience, and focusing on open rather than closed questions. The NICHD protocol was later revised to include enhanced emotional support (Hershkowitz, Lamb, Katz, & Malloy, 2015).

In South Korea, sexual offenses are a serious social problem. According to recent official statistics, the total number of sexual crimes occurring per year rose 12% from 2014 to 2018 (Korean National Police Agency [KNPA], 2018). The KNPA has attempted to improve competences in investigating sex offenses, with an emphasis on interviewing due to the limited amount of physical evidence that is often a hallmark of such cases. In 2004, the KNPA introduced the PEACE model and cognitive interview to spread the recent knowledge on investigative interviewing principles and techniques. The KNPA also executed nationwide video-recorded interview system to improve the admissibility of police interviews and to protect the human rights of interviewees in 2007. Further, the KNPA disseminated the NICHD protocol to assist officers interviewing child victims in 2010 (Ministry of Gender Equality & Family, 2010). To enhance and maintain the officers' expertise related to the guidelines introduced, the Korean Police Investigation Academy, which is the professional training institution of the KNPA, provides relevant investigative interviewing courses com-

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posed of learning theories and simulation exercises. Interestingly, according to Yi, Lamb, and Jo (2015), the NICHD interview protocol was adopted for Korean officers who interview suspected child victims and was perceived as important and effective. However, their research also revealed that Korean officers often do not adopt the methods recommended by the NICHD in practice. Especially, NICHD urges interviewers to establish rapport and there is lots of instruction about this in its revised protocol (see Lamb et al., 2018). Other, earlier research also emphasized the significance of rapport-building when interviewing victims (Ruddock, 2006). Hardy, Young, and Holmes (2009) described that rapport can reduce psychological sequelae for the victims as well as assist in the retrieval of memories regarding detailed information of the incident. Moreover, rapport-building is deemed central to the progress of a cooperative, information-gathering interaction (Vallano & Schreiber Compo, 2011) and for child victims, reports of traumatic experiences can be critically affected by interviewer behavior and an appreciation of rapport (Lamb et al., 2018). Rapport-building offers a friendly atmosphere and consequently reduces the uneasiness that may exert a negative impact on information gathered (Roberts, Lamb, & Sternberg, 2004). The revised NICHD protocol, emphasizing a rapport-building phase, was more effective than its previous standard version in facilitating disclosure by child victims (Hershkowitz, Lamb, & Katz, 2014). In summary, rapport-based interviewing can mitigate the negative feelings of child victims during police interviews (Hershkowitz, Orbach, Lamb, Sternberg, & Horowitz, 2006) and increase the amount of information generated (Fisher, Brennan, & McCauley, 2002; Ord, Shaw, & Green, 2008). Despite these findings, little is known about how to create an environment of rapport and, more specifically, there is very little known about the set of behaviors or approaches that underpin it.

Observing Rapport-Based Interviewing Techniques

The observing rapport-based interpersonal techniques (ORBIT) coding framework was developed by Alison, Alison, Noone, Eltnib, and Christiansen (2013) to enable a systematic approach to classify, code, and measure rapport-based interviewing. ORBIT is based on two major components that have been used in counseling domains: (a) humanistic, "Rogerian" approaches to counseling, with a specific focus on motivational interviewing (MI; Miller & Rollnick, 1992) and (b) an interpersonal behavior circle (IBC) model of the interactions between interviewer and interviewee (Birtchnell, 2002; Leary, 1955). Alison et al. (2013) considered, when constructing ORBIT, that law enforcement interviews and counseling may have common features. Specifically, interviewers/counselors seek to treat interviewees/clients with empathy, respect, and support, while sustaining interpersonally adaptive, prosocial behaviors. Also, interviewers/counselors should utilize flexible approaches to the responses of interviewees/clients while focusing on core agendas during the interaction. Furthermore, interviewees/clients are able to make their own choices concerning the level of engagement (as is enshrined e.g., in the right to silence with regards to suspects). Bull and Cherryman (1996) found that empathy, adaptability, open-mindedness, well-organized structure, and a nonjudgmental approach were especially effective in investigative interviewing. These qualities represent many of the hallmarks of MI (see Rollnick & Miller, 1995).

Motivational Interviewing

Developed by Miller (1983), MI was used in a therapeutic arena as a goal-directed process for helping clients to search and solve their ambivalence about continuing with or abstaining from alcohol and substance misuse. Ambivalence describes the "push and pull" factors that encourage clients to stop or continue their misuse. Clients in therapy often report not only a push toward change but also a pull away from it (Miller & Rollnick, 2012). MI skills such as active listening, open questions and summaries are effective means by which to produce an atmosphere of personal choice and to enable the expression of the client's thoughts and beliefs underlying the issue. In doing so, it has been established that there is a concomitant decrease in interviewees' resistance to behavioral change and greater openness and receptivity to taking responsibility for making changes (Thigpen, Beauclair, Brown, & Guevara, 2012). Using approaches that are antithetical to MI—including seeking to control, cajole or "coerce" the client "out of drinking" can produce a psychological state of "reactance." Reactance emerges where a client actively adopts the opposing position to that suggested by the therapist and thus ossifies their commitment to continued misuse. MI has demonstrated its efficacy on various matters in health maintenance, counseling, and psychological treatments (Arkowitz, Westra, Miller, & Rollnick, 2008; Erickson, Gerstle, & Feldstein, 2005; Miller & Rollnick, 2002). Likewise, in South Korea, there have been some MI studies (e.g., Cho & Lee, 2018; Lee, 2017), showing that MI is an effective way to deal with issues such as smoking cessation and mitigating the adverse effects of schizophrenia symptoms.

Interpersonal Behavior Circle

The IBC is the second component of ORBIT. It deals with the interactions between interviewer and interviewee. There are a variety of IBCs that have been examined in different domains, but most IBC visual models rely on a two-dimensional structure with intimacy ("love and hate") on the horizontal axis, and power ("dominance and submission") on the vertical axis (Leary, 1955). Positively correlated terms such as "supportive" and "friendly" sit on contiguous sides of the circle and term such as "overbearing" and "modest" sit on opposite sides of the circumference and are negatively correlated. Birtchnell (2002) argued that IBC interactions can be adaptive or maladaptive (e.g., power can be positive or negative—with assertive (prosocial) behavior on the one hand and demanding (antisocial) behavior on the other). Birtchnell stressed that we should seek to employ adaptive rather than maladaptive interactions at all times irrespective of whatever interpersonal "mode" we find ourselves in. Thus, being in charge, supportive and conversational should be a preferred style when in power/control mode rather than the maladaptive variants of this mode—demanding, dogmatic, and pedantic. There are various measures of IBC to evaluate interactions (Hatcher & Rogers, 2009) with good internal consistency and test–retest reliability (Ansell, Kurtz, DeMoor, & Markey, 2011). The interactions that emerge as a function of dominance-submission and conflict-co-operation have been uncovered in several forensic contexts and represent severe forms of the maladaptive variants of interpersonal modes. These include the interpersonal processes between perpetrators and victims in child sexual abuse (Bennell, Alison, Stein, Alison, & Canter, 2001), behavioral consistency in group sexual crimes

(Porter & Alison, 2004), and hierarchies among gang robbery offenders (Porter & Alison, 2006).

The Present Study

Alison et al. (2013) researched terrorism suspect interviewing using ORBIT in the United Kingdom. They considered that MI and IBC are compatible as well as represent key concepts (e.g., global ethos, interpersonal competence) of rapport-based interviewing. The study showed that MI-consistent skills and the adoption of prosocial aspects of the IBC on the part of the interviewer were positively associated with adaptive suspect responding and interview yield. On the other hand, maladaptive interviewing resulted in increasing maladaptive suspect responding, which, in turn, reduced interview yield. ORBIT may also be useful for other contexts of investigative interviewing such as sex crime victim interviews, though prior to the current study this has not been evaluated. In addition, Alison's studies have thus far only been examined with respect to predominantly western interviewers (though interviewees have come from a very wide range of geographic areas). ORBIT skills and effects may, therefore, vary with respect to different geographic and cultural environments. According to Norenzayan, Choi, and Nisbett (2002), Koreans' values are more affected by circumstantial/contextual factors than those of Americans. Furthermore, Hamamura, Heine, and Paulhus (2008) reported that Asians' responses tended to be more equivocal and moderate compared with those of Europeans. The consequences of these purported variations for rapport are unclear but they may create some variation in responses for both interviewer and interviewee. Hitherto, there have been no such attempts to observe rapport-based methods with respect to real-life forensic interviews with victims, specifically with regards to sexual offenses, and in an Eastern hemisphere. For these reasons, it would be meaningful to explore the utility of ORBIT with sex crime victims from an Asian background. Thus, the objective of the current study is to examine the impact of rapport-based interpersonal techniques on disclosures by victims in South Korea. The article will focus on the extent and combination of MI and IBC elements as well as the relationship (if any) between the adaptive and maladaptive behaviors of interviewers and victims. The study will analyze how those interactions affect the overall interview yield during the interview. Accordingly, the following were hypothesized:

Hypothesis 1: Interviewers who displayed MI-consistent strategies would also display adaptive interpersonal behavior throughout the interviews; interviewers who displayed MI-inconsistent strategies would display maladaptive interpersonal behavior throughout the interviews.

Hypothesis 2: Interviewers who displayed adaptive interpersonal behavior would be more likely to elicit adaptive interpersonal behavior from victims; interviewers who displayed maladaptive interpersonal behavior would be more likely to elicit maladaptive interpersonal behavior from victims.

Hypothesis 3: MI-consistent strategies, interviewer, and victim adaptive interpersonal behavior would be associated with increased interview yield; MI-inconsistent strategies, interviewer, and victim maladaptive interpersonal behavior would be associated with decreased interview yield.

Method

Data Set

This study received ethical approval from the research ethics committee. The data set consisted of 103 hr of video recordings substitute of investigative interviews of 86 alleged victims of sexual assault in South Korea between 2011 and 2015 (with all cases later leading to a conviction). The cases involved rape ($N = 18$), indecent assault ($N = 60$), and indecent image crimes ($N = 8$). In terms of the relationship between victims and suspects, they were classified as domestic ($N = 11$), acquaintance ($N = 36$), and stranger crimes ($N = 39$). In total, 26 interviewers (male = 4, female = 22) interviewed 86 victims (male = 8, female = 78) of different age groups ($M = 14.90$, $SD = 7.82$; range = 7–49). Each interviewer interviewed one or more victims ($M = 3.31$, $SD = 0.68$; range = 1–4), and always completed the entire interview. The length of each interview ranged between 0.25 and 3.63 hr ($M = 1.20$, $SD = 0.69$). The interviewers worked at sexual crime investigation units across several police services and all had completed the relevant interviewing course (which covers the PEACE model, cognitive interview, and the NICHD protocol) through classroom-based learning and technique practice at the Korean Police Investigation Academy. None had received ORBIT training, and thus, we were looking at natural incidences of ORBIT related interviewer behavior without training.

Procedure

Recordings were broken down into 316 interview units (mean time per unit was 19.58 ± 11.62) using a 15-min proposed cut-off point. Remaining recordings of more than 7.5 min were coded as a unit, with those of less than 7.5 min to be included in a previous unit. The rationale for the 15-min cut-off is based on multiple iterations of coders working on previous interview segments, where 5-, 10-, 15-, 30-, and 45-min segments were coded (with the same subset of 10 interviews). Coders recognized the considerable variation in both topic areas, coding across the interpersonal and MI elements across both the 30 and 45-min segments. As such, the three original coders agreed more granularity was required to capture these variations. When another set of two interviews were coded at the 5 and 10-min levels of granularity and then compared to 15-min segments there was no conferred advantage from a 5- or 10-min coding compared to a 15-min one (i.e., 5 and 10 min did not add any granularity advantage). Coders agreed that 15-min segments were most amenable to capturing topic shifts and any shifts in MI and IBC sequences. However, coders were able to adjust up or down within a 5-min window (15 ± 5 min) if there was an obvious intersection point on a topic. This maximized the benefits of a reliable average time segment to be coded while not compromising on the flexibility of topic shifts or interpersonal shifts. In MI literature, it is recognized that the spirit of MI can be captured within relatively short segments. The 15-min cut-off is also consistent with this literature (Wolraich, Droter, Dworkin, & Perrin, 2008).

Thirty interview units were randomly selected to establish intercoder agreement before actual coding. Differences between the two coders were resolved by discussion for each unit. Both kappa index and percentage agreements were used to check coder-

agreement levels. The calculated outcomes provided the level of agreement for the elements of the ORBIT coding manual. The kappa values were categorized as poor (.00 ∼ .20), fair (.21 ∼ .40), moderate (.41 ∼ .60), strong (.61 ∼ .80), and near-complete agreement (>.80; Fleiss, 1981; Landis & Koch, 1977). Kappas for the 25 categories of the coding framework indicated fair to strong agreement between the coders, ranging from .22 to .71. Percentage agreements for all ranged between 47% and 83% with an average of 69% (±11.75).

Materials

The ORBIT coding framework was used to systematically assess the interactions between interviewers and victims. This research was focused on measuring interviewers' MI strategies and interpersonal behavior and their impact on victims' interpersonal behavior and interview yield within police interviews. Accordingly, interviewer and victim behavior were coded into six components assessing the following.

Global motivational interviewing strategy (GMIS; see Table 1). GMIS was created to measure the global "atmosphere" established by an interviewer. This was derived from MI literature and a relevant coding guideline (MISC-1.1). GMIS consisted of five central elements: acceptance, empathy, adaptation, evocation, and autonomy. Each element was measured on a 7-point scale. For example, the score of adaptation ranged from 1 (*wrestling: trying to control and rigidly direct the agenda*) to 7 (*dancing: working together and responding flexibly to the interviewee's agenda*).

Interpersonal behavior circle (IBC; see Figure 1). The circle consisted of four scales: (a) IBC-Interviewer: Adaptive, (b) IBC-Interviewer: Maladaptive, (c) IBC-Victim: Adaptive, and (d) IBC-Victim: Maladaptive. Each scale contains the four modes of interpersonal relating: control, cooperate, capitulate, and confront. They were used to measure interviewer interpersonal behavior of relating to the victim as well as victim interpersonal behavior of relating to the interviewer. A 4-point scale was adopted, ranging from 0 (a*ssociated behaviors not observed*) to 3 (*frequent and consistent use of associated behaviors*)..

Interview yield assessment. Interview yield assessment was used to score the amount of useful information/intelligence obtained during interviews. Victim statements were coded according to their details about "people, locations, actions, and times," which may be associated with the crime. A 4-point scale was adopted, ranging from 0 (*absent: no information of relevance*) to 3 (*high: much significant information disclosed*) in terms of evidential significance and intelligence value.

Data Analysis

All variables were log-transformed before analyses of the measurement and structural models of the data. Maximum likelihood estimation was adopted to test the hypothesized models. To confirm that the model was a good fit of the data, various indices of model fit were computed. For the model fit, the standard chi-squared test was not employed, as it is excessively sensitive to kurtosis and distribution. Therefore, a normed chi-squared value (χ^2/df) was calculated as well, of which the values from 1 to 5 are indicative of an acceptable model fit (Schumacker & Lomax, 2004). Also, the standardized root mean residual (SRMR) absolute fit index was computed to evaluate model fit, as this value is less affected by sample size, distribution, and kurtosis. Values of 0 represent a perfect fit and values under 0.08 mean a good model fit for this measure. The normed fit index (NFI) was calculated to estimate the model fit, which is good for larger sample sizes. Tucker–Lewis index (TLI) was utilized as the NFI measure is overly sensitive to the number of parameters in the model; NFI and TLI values of above 0.9 are considered as acceptable fit and those of above 0.95 as good fits (Ullman, 2001). Furthermore, non-centrality-based indices such as comparative fit index (CFI) and root mean square error of approximation (RMSEA; Bentler, 2007) were calculated. CFI values of 0.95 or more and RMSEA values of 0.08 or lower were used as benchmarks for good and acceptable fit (Hu & Bentler, 1999).

Standardized regression coefficients are given for specific relationships between variables within the model. For the standardized regression coefficients, 95% confidence intervals (CIs) using bias-corrected bootstrapping as well as related *p* values were reported. In addition, bias-corrected bootstrapping was applied to acquire bias-corrected confidence intervals for the indirect effects in the structural model. Further, PROCESS was adopted to identify a confidence interval for each mediator in the model (Hayes, 2013) as the former indirect effects calculated using bootstrapping provide an entire indirect effect of exogenous variable *X* on endogenous variable *Y* through multiple mediators.

Following this initial analysis, a multilevel structural equation model (MLSEM) was run using *gsem* in STATA 14. The overarching structure of the models differs from the above model in one way, instead of latent variables for yield and MI we computed mean scores. This is due to computational limitations in estimating multiple latent variables and their associations with each other and other, observed, variables across multiple levels (e.g., three levels for cases). To control for nesting in the data we added "case" nested in "interviewer" as random intercepts. Model fit indices described above cannot be computed for MLSEM, so, Akaike

Table 1
Global Motivational Interviewing Strategy Definitions (Alison, Alison, Elntib, & Noone, 2012)

| Element	Definition
Acceptance	Unconditional positive regard
Empathy	The extent to which the interviewer understands the victim's perspective
Adaptation	An interviewer is able to adapt to responses by a victim and manage a fluid interview format (e.g., timeline jumps, deviation from interview plan)
Evocation	An interviewer is able to draw out the beliefs and views of the victim
Autonomy	Encouragement/support that it is the victim's right to choose to reveal information or not
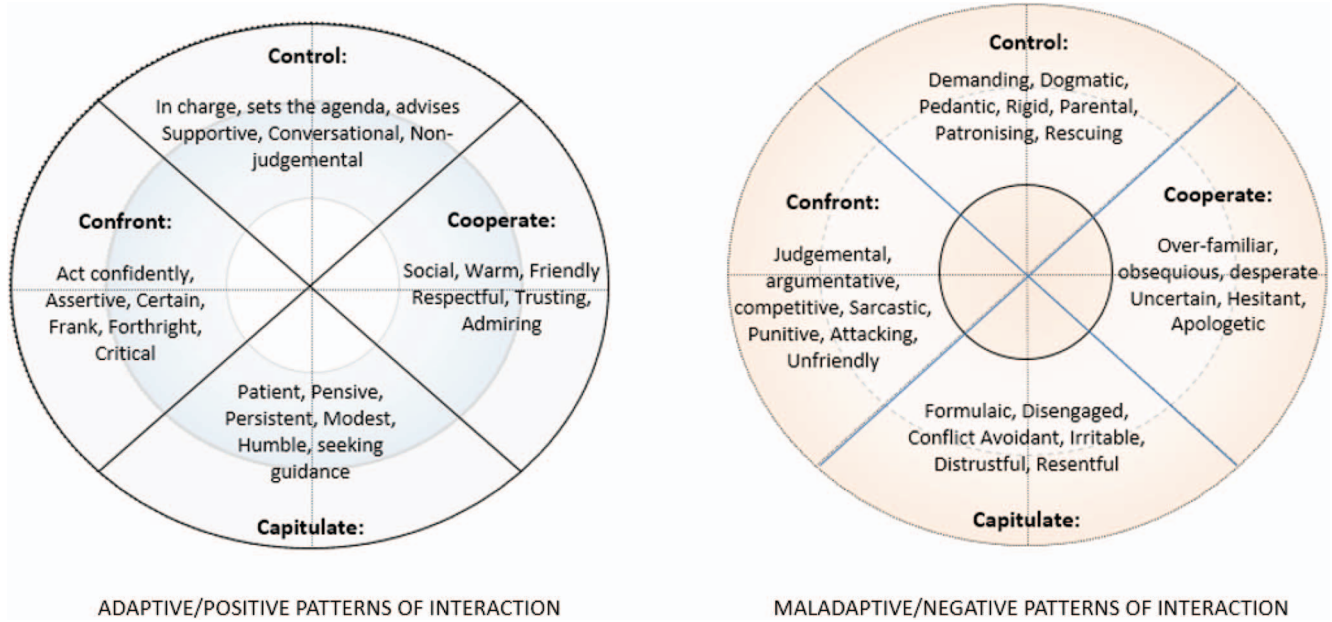
Figure 1. Adaptive and maladaptive variants of interpersonal behavior (Alison, Alison, Elntib, & Noone, 2012). See the online article for the color version of this figure.

information criterion (AIC) and Bayesian information criterion (BIC) comparative fit values were used to compare the comparative fit of the MLSEM models to the single-level model (with mean scores instead of latent variables for consistency). Differences between regression slopes were calculated using Z statistics to test the extent to which controlling for data levels influenced associations reported.

Results

Descriptive Analysis

Descriptive statistics relating to interviewer behavior (GMIS, IBC-Interviewer: Adaptive, and IBC-Interviewer: Maladaptive) and victim behavior (IBC-Victim: Adaptive, IBC-Victim: Maladaptive, and Interview Yield Assessment) are shown in Tables 2

and 3. There was an overall pattern of more adaptive than maladaptive behavior for interviewers, $t(315) = 61.29$, $p < .001$, $d = 5.11$. Similarly, victims showed more adaptive than maladaptive behavior, $t(315) = 20.55$, $p < .001$, $d = 2.35$. In addition, the interviewers employed more adaptive, $t(315) = 11.38$, $p < .001$, $d = .75$, and less maladaptive behavior, $t(315) = -5.37$, $p < .001$, $d = .32$, than the victims.

Data Modeling

Measurement models. Confirmatory factor analysis was used to test the construct validity of the latent variables created for GMIS and interview yield. Importantly, all factor loadings for GMIS were significant ($p < .001$). The overall fit of the GMIS

Table 2

Mean and Standard Deviation: Global Motivational Interviewing Strategy (GMIS) and Interview Yield Assessment (IYA) Scores

Scale	Category	M	SD
GMIS	Acceptance	5.34	0.66
	Empathy	5.14	0.60
	Adaptation	5.12	0.56
	Evocation	5.36	0.70
	Autonomy	4.93	0.61
	Total	25.89	2.54
IYA	People	1.36	0.67
	Location	1.36	0.71
	Action	1.50	0.69
	Time	1.22	0.61
	Total	5.45	2.24

Table 3

Mean and Standard Deviation: Interpersonal Behavior Circle (IBC)-Interviewer and IBC-Victim Scores

Scale	Adaptive behavior		Maladaptive behavior	
	M	SD	M	SD
IBC-Interviewer				
Control	2.04	0.56	0.70	0.66
Cooperate	1.80	0.61	0.45	0.60
Capitulate	2.18	0.60	0.24	0.47
Confront	1.46	0.63	0.11	0.32
Total	7.48	1.35	1.50	0.96
IBC-Victim				
Control	1.61	0.70	0.19	0.49
Cooperate	1.36	0.64	0.59	0.78
Capitulate	1.66	0.78	1.01	0.87
Confront	1.43	0.80	0.14	0.48
Total	6.06	2.32	1.93	1.65

model was good on all measures ($\chi^2/df = 1.27$, SRMR = .01, NFI = .99, TLI = .99, CFI = .99, RMSEA = .03, 90% CI [.01 to .09]). Likewise, factor loadings for the latent variable of interview yield were also all significant ($p < .001$). The overall fit of the model was good to acceptable ($\chi^2/df = 3.22$, SRMR = .01, NFI = .99, TLI = .98, CFI = .99, RMSEA = .08, 90% CI [.02 to .16]).

Structural model (see Figure 2; Table 4). The dependent variable for the hypothesized structural model was the latent variable of interview yield. The hypothesized structural model examined the direct effects of adaptive and maladaptive interviewing on interview yield. The model also assessed whether these variables had indirect effects on interview yield through adaptive and maladaptive victim responding. Further, the hypothesized structural model investigated the direct effect of GMIS on interview yield and adaptive and maladaptive behavior of interviewers and victims as well as the indirect effect of GMIS on interview yield through adaptive and maladaptive interpersonal behavior of interviewers and victims. The hypothesized structural model proved to be a good fit for the data ($\chi^2/df = 2.04$, SRMR = .04, NFI = .95, TLI = .96, CFI = .97, RMSEA = .06, 90% CI [.04 to .07]), and a superior fit to the alternative models.

Associations between variables (see Table 5). There was a positive relationship between adaptive victim responding and interview yield ($\beta = .44$, $p = .004$; 95% CI [.34, .55]) as well as a negative relationship between maladaptive victim responding and interview yield ($\beta = -.20$, $p = .007$; 95% CI [−.34, −.09]). Adaptive interviewing ($\beta = .06$, $p = .273$; 95% CI [−.06, .18]) and maladaptive interviewing ($\beta = -.01$, $p = .797$; 95% CI [−.11, .11])

did not directly affect interview yield. Adaptive interviewing was positively associated with adaptive victim responding ($\beta = .16$, $p = .022$; 95% CI [.03, .27]), and maladaptive interviewing was positively associated with maladaptive victim responding ($\beta = .48$, $p = .019$; 95% CI [.36, .59]). This is in accord with the hypothesized principle of mutual influence. The reverse patterns were also observed—maladaptive interviewing was negatively associated with adaptive victim responding ($\beta = -.15$, $p = .011$; 95% CI [−.25, −.04]). However, there was an unexpected positive association between adaptive interviewing and maladaptive victim responding ($\beta = .16$, $p = .016$; 95% CI [.02, .27]). Further, maladaptive interviewing had an indirect effect on interview yield via adaptive and maladaptive victim responding (95% CI [−.24, −.09], $p = .012$). On the other hand, adaptive interviewing had no indirect effect on interview yield via adaptive and maladaptive victim responding (95% CI [−.03, .13], $p = .316$). PROCESS found that the indirect effect of maladaptive interviewing on interview yield was significant via adaptive victim responding ($\beta = -.19$, 95% CI [−.27, −.13]) and maladaptive victim responding ($\beta = -.21$, 95% CI [−.27, −.16]) separately.

GMIS was directly associated with increased adaptive interviewing ($\beta = .53$, $p = .016$; 95% CI [.44, .59]) and interview yield ($\beta = .25$, $p = .007$; 95% CI [.14, .40]) as well as decreased maladaptive interviewing ($\beta = -.38$, $p = .020$; 95% CI [−.47, −.28]). GMIS was directly associated with increased adaptive victim responding ($\beta = .37$, $p = .010$; 95% CI [.24, .48]), although it was not directly associated with decreased maladaptive victim responding ($\beta = -.09$, $p = .287$; 95% CI [−.20, .07]). GMIS was
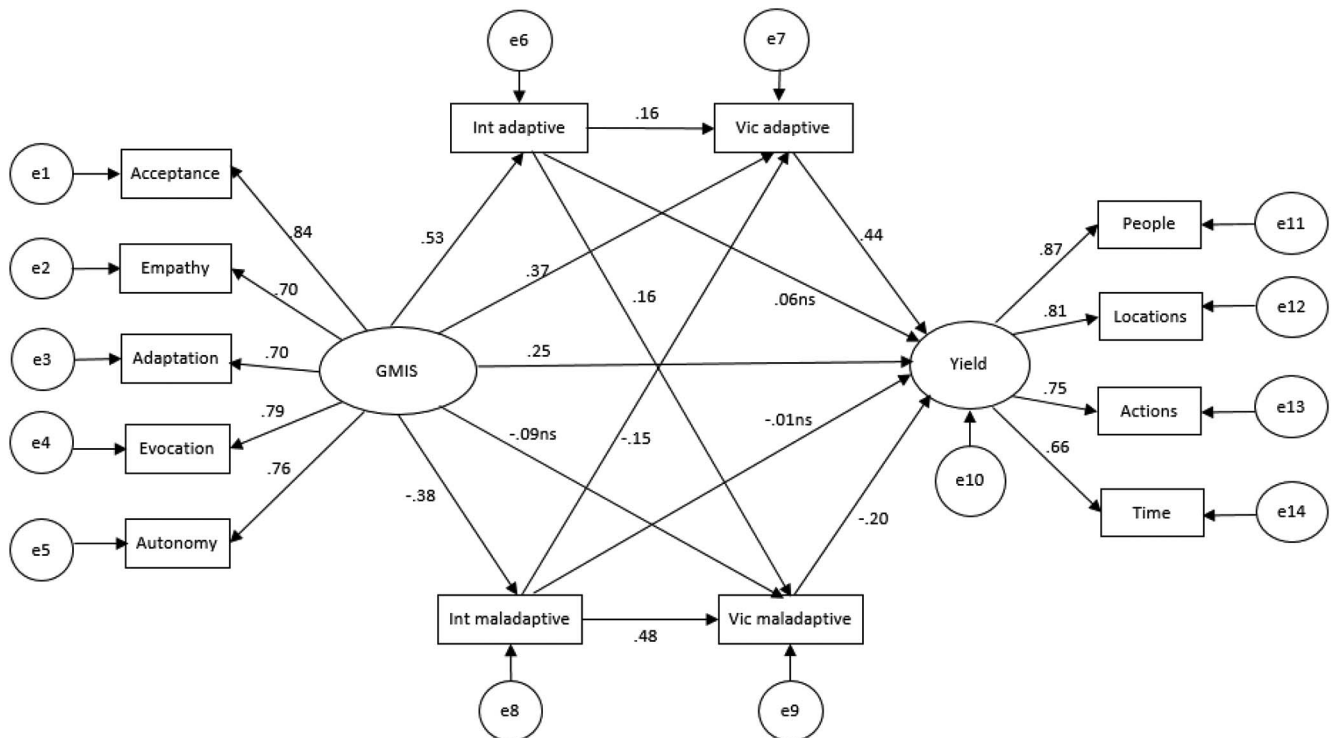

Figure 2. How motivational interviewing and interpersonal behavior between interviewers and victims interact with one another and interview yield. Standardized parameter estimates are presented and are statistically significant at ($p < .05$) unless otherwise indicated (*ns*).

Table 4
Model Fit for the Hypothesized Structural Models and Alternative Models

Model	χ^2/df	SRMR	NFI	TLI	CFI	RMSEA
Hypothesized model	2.04	.04	.95	.96	.97	.06
Mediated model	2.40	.05	.94	.95	.96	.07
Direct effects model	7.44	.25	.78	.76	.80	.14
Independence model	27.24	.42	.00	.00	.00	.29

Note. SRMR = standardized root mean residual; NFI = normed fit index; TLI = Tucker–Lewis index; CFI = comparative fit index; RMSEA = root mean square error of approximation.

associated with increased adaptive victim responding via adaptive and maladaptive interviewing (95% CI [.08, .22], $p = .012$). However, there was no indirect effect of GMIS on maladaptive victim responding via adaptive and maladaptive interviewing (95% CI [–.20, .01], $p = .079$). PROCESS found the indirect effect of GMIS on adaptive victim responding via adaptive ($\beta = .08$, 95% CI [.03, .14]) and maladaptive interviewing ($\beta = .06$, 95% CI [.02, .10]) individually. Further, GMIS was associated with increased interview yield via adaptive and maladaptive interpersonal behavior of interviewers and victims (95% CI [.23, .39], $p = .016$). PROCESS revealed that GMIS was associated with increased interview yield via adaptive interpersonal behavior of interviewers and victims in serial ($\beta = .05$, 95% CI [.02, .08]) as well as maladaptive interpersonal behavior of interviewers and victims in serial ($\beta = .08$, 95% CI [.05, .11]).

Multilevel structural model controlling for case nested in interviewer (see Table 6). The multilevel model (AIC = 6,212.69, BIC = 6,332.87) was not a better fit than the single-level model (AIC = 5,334.95, BIC = 5,425.08). The pattern of results after controlling for the case and interviewer remains almost identical. The only notable differences between the single-level and multilevel model were that the negative association between GMIS and victim maladaptive behavior became significant after controlling for the case, although there was no significant difference between the regression slopes. Also, the association between interview adaptive and victim maladaptive behavior was no longer

Table 5
Standardized Direct, Indirect, and Total Effects Between Variables

Relations	Direct effects	Indirect effects	Total effects
GMIS → Int Ad	.526*	—	.526*
GMIS → Int Mal	−.384*	—	−.384*
GMIS → Vic Ad	.366*	.141*	.507*
GMIS → Vic Mal	−.086	−.102	−.188*
GMIS → Yield	.245**	.300*	.545*
Int Ad → Vic Ad	.155*	—	.155*
Int Ad → Vic Mal	.155*	—	.155*
Int Ad → Yield	.063	.038	.101
Int Mal → Vic Ad	−.154*	—	−.154*
Int Mal → Vic Mal	.478*	—	.478*
Int Mal → Yield	−.014	−.163*	−.177*
Vic Ad → Yield	.442**	—	.442**
Vic Mal → Yield	−.198**	—	−.198**

Note. GMIS = global motivational interviewing strategy; Int = interviewer; Vic = victim; Ad = adaptive; Mal = maladaptive.
* $p < .05$. ** $p < .01$.

significant after controlling for the case, again, the regression slopes did not significantly differ.

Discussion

This was the first empirical research on Korean police interviews with sex crime victims using the ORBIT coding framework. The model shows that the combination of MI and IBC is effective in reducing maladaptive victim responding and generating useful information from the victims. The atmosphere created by MI-consistent strategies had a profound impact on interviewer and victim interpersonal behavior and interview yield. MI-consistent strategies increased adaptive interviewing and decreased maladaptive interviewing. The findings are consistent with those found in terrorism suspect interviewing research using ORBIT (Alison et al., 2013). As such, MI-consistent strategies are critically associated with interviewer interpersonal behavior in both victim and suspect interviews. Further, the results indicate that an MI "mindset" which emphasizes humanistic principles of empathy, honesty, and providing choice for the victim provides a foundation for adaptive interviewer interpersonal behavior. Thus, interviewers who are either naturally inclined toward this or who can be trained to approach victim interviews with these aspects in mind will likely have a positive interpersonal inclination toward victim interviewing.

In support of hypothesis two, adaptive interviewing increased adaptive victim responding and, conversely, maladaptive interviewing increased maladaptive victim responding. In further exploration, maladaptive interviewing decreased adaptive victim responding, whereas adaptive interviewing increased maladaptive victim responding (although this effect was no longer significant after controlling for the case in the multilevel structural model). These results are similar to those established in suspect interviewing research (Alison et al., 2013). This suggests that adaptive interviewing needs to be adopted in victim interviewing with caution as maladaptive victim responding (increased by adaptive interviewing) was severely detrimental to interview yield. The nontrivial and seemingly counterintuitive finding that certain elements of adaptive interviewing resulted in maladaptive victim responding may be a result of prosocial interviewer behaviors creating discomfort or embarrassment for victims on especially sensitive topic areas and thus generating embarrassment and shame. Therefore, the use of adaptive interviewing may need to consider victim reluctance and the concomitant maladaptive behaviors that may ensue as a result of discomfort but recognize that, as the interviewer, one must not mirror or be influenced by that maladaptive behavior. Instead, interviewers must inhibit what may

Table 6

Comparison Between Regression Slopes in the Single-Level Model and "Case" Nested in "Interview" Random Intercept Multilevel Model

Association	Single-level				Multilevel				Difference	
	B	SE	p	95% CI	B	SE	p	95% CI	Z	p
GMIS → Int Ad	.26	.03	<.001	[.21, .32]	.19	.03	<.001	[.14, .25]	1.88	.069
GMIS → Int Mal	−.14	.02	<.001	[.18, .10]	−.18	.21	<.001	[−.20, −.12]	0.19	.392
GMIS → Vic Ad	.29	.05	<.001	[.18, .39]	.20	.04	<.001	[.12, .29]	1.30	.172
GMIS → Vic Mal	−.05	.04	.203	[−.13, .03]	−.07	.03	.024	[−.12, −.01]	0.41	.366
GMIS → Yield	.17	.05	<.001	[.08, .26]	.19	.05	<.001	[.10, .29]	−0.26	.386
Int Ad → Vic Ad	.33	.10	.001	[.14, .51]	.24	.07	.001	[.10, .38]	0.72	.308
Int Ad → Vic Mal	.18	.07	.009	[.05, .31]	.05	.05	.273	[−.04, .15]	1.53	.124
Int Ad → Yield	.11	.08	.201	[−.06, .27]	.12	.08	.160	[−.05, .28]	−0.13	.396
Int Mal → Vic Ad	−.42	.13	.001	[−.67, −.18]	−.35	.10	<.001	[−.55, −.16]	−0.47	.358
Int Mal → Vic Mal	.82	.09	<.001	[.64, .99]	.59	.07	<.001	[.45, .72]	2.00	.054
Int Mal → Yield	−.09	.11	.421	[−.31, .13]	−.03	.12	.830	[−.27, .22]	−0.37	.372
Vic Ad → Yield	.41	.06	<.001	[.30, .53]	.41	.07	<.001	[.28, .54]	0.02	.399
Vic Mal → Yield	−.25	.08	.002	[−.41, −.09]	−.35	.10	.003	[−.43, −.08]	0.78	.294

Note. CI = confidence interval; GMIS = global motivational interviewing strategy; Int = interviewer; Vic = victim; Ad = adaptive; Mal = maladaptive.

be a natural inclination to react maladaptively in response, but rather, "stick" to the adaptive variants and "weather" the discomfort.

As hypothesized, MI-consistent strategies and adaptive victim responding increased interview yield, while MI-inconsistent strategies, maladaptive interviewing, and maladaptive victim responding decreased interview yield. MI-consistent behaviors appeared to be especially central in helping victims to disclose information. This corresponds with the result of the suspect interviewing research (Alison et al., 2013). Further, the impact of MI-consistent strategies on interview yield was significantly mediated by the interviewer and victim interpersonal behavior. This emphasizes the role of interviewer and victim interpersonal behavior in victim interviewing. Indeed, the indirect effect of MI-consistent skills on interview yield was greater than their direct effects. For this reason, it is essential to understand the joint impact of MI-consistent skills on interview yield with the interviewer and victim interpersonal behavior in victim interviewing.

However, counter to hypothesis three, adaptive interviewing did not influence interview yield in victim interviewing. Some victims remained silent during the interview, even though interviewers consistently encouraged victims without force and through gentle support. This is not consistent with the result of suspect interviewing research (Alison et al., 2013), where adaptive interviewing had an indirect effect on interview yield via adaptive suspect responding (although it had no direct effect on it). Thus, in victim interviewing, adaptive interviewing appears to play a more limited role in moving victims from complete reluctance to some form of engagement.

Interviewers adopted more adaptive interpersonal behavior than maladaptive interpersonal behavior. This may be because interviewers were well trained and previously experienced interviewing sexual crime victims. Therefore, there were relatively fewer chances to observe maladaptive interviewing, compared to adaptive interviewing. However, where it did occur, maladaptive interviewing had an asymmetrically negative impact (its negative effect was far more powerful than adaptive behavior's positive effect). This result corresponds with that of suspect interviewing research (Alison et al., 2013). So, minimizing or eradicating maladaptive interviewing is even more critical than introducing or training adaptive behaviors. This suggests that, from a training perspective, the first objective must be to remove or inhibit bad habits before introducing or adding positive new habits.

Concerning victim interpersonal behavior, victim adaptive responding increased interview yield, whereas victim maladaptive responding decreased interview yield. These outcomes are similar to the findings of terrorism suspect interviewing (Alison et al., 2013). This suggests that interviewee interpersonal behavior is closely connected to the amount of evidential information obtained in the victim and suspect interviews. Importantly, through victim adaptive and maladaptive behavior, MI-consistent tactics and interviewer interpersonal behavior had indirect effects on interview yield. This highlights that theoretical models and training schemes in victim interviewing should put an increased onus on appreciating victim interpersonal behavior because the success of an interview may be determined by it. Namely, victim adaptive and maladaptive responding is not only a predictor on interview yield but also a mediator on the associations between rapport-based interpersonal techniques and the outcomes.

Implications

This article offers a framework for comprehending the associations between MI, interpersonal behavior of interviewers and victims and interview yield in Korean investigative interviews. These outcomes have theoretical and practical implications for the development of interviewing such victims in South Korea. The ORBIT coding framework suggested a new approach to defining, evaluating, and understanding how to create rapport in police interviews as per NICHD recommendations. Previously, officers were asked to consider rapport but given very little to no detail as to how.

Limitations

The number of interviewers was small and interview recordings were collected from a limited number of investigation units. A

larger number of interviewers from a wider range of geographical regions would be valuable for generalization of results and may facilitate more in-depth explorations of relationships between the variables. Also, there was nothing the wide range of ages represented in the present sample. Therefore, it would be useful to investigate whether the effect of rapport-based interpersonal techniques on the outcomes is moderated by the victim's age.

Further, with increased sample size, future studies could compare different victim populations to identify whether the interpersonal associations are replicated with victims involved in different kinds of sex offenses. It would be particularly interesting to compare samples of contact and noncontact sexual offense victims to thoroughly examine differences in their employ of adaptive and maladaptive interpersonal behavior and its mediating role in rapport-based interviewing.

This research did not explore when is an effective stage for interviewers to use specific interviewing tactics. It would be valuable to examine transitions during the interview and the changes in investigators' capabilities in interviewing with victims across a series of interviews. This may enable the identification of optimal approaches at different stages of the interview process. There may be certain significant moments or arrangements to maximize the efficacy of each strategy of MI and IBC on interview yield throughout the interview.

It should be noted that interrater agreement in a small number of items (e.g., controlling style in adaptive victim behavior) was low, although previous ORBIT research established high interrater reliability values (Alison et al., 2014). The lower agreement here was likely attributable to the reliance on a less experienced coder and smaller reliability samples. Thus, it would be beneficial to employ an experienced coder and large reliability samples to ensure high interrater reliability across all elements.

Conclusion

Overall, this study provides empirical evidence that the use of ORBIT is a useful measure of rapport-based interpersonal techniques within sex crime victim interviewing in South Korea. MI-consistent tactics are crucial in increasing adaptive interviewing and decreasing maladaptive interviewing as well as enhancing adaptive victim responding and interview yield. Adaptive interviewing increases adaptive and maladaptive victim responding. Maladaptive interviewing increases maladaptive victim responding and decreases adaptive victim responding. Adaptive and maladaptive victim responding are closely connected to interview yield. These results should be reflected in the policies of police interview training and assessment. By improving MI-consistent and adaptive interviewing and removing MI-inconsistent and maladaptive interviewing, interviewers can raise the possibility of eliciting useful information from the victims.

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