

Is Three a Crowd? Examining Rapport in Investigative Interviews

Tripp Driskell
University of Central Florida

Elizabeth L. Blickensderfer
Embry-Riddle Aeronautical University

Eduardo Salas
University of Central Florida

This research constitutes an initial empirical examination of how the introduction of a third party impacts interviewee rapport in an investigative interview setting. Whereas some have argued that employing two interviewers may be beneficial in an investigative interview setting, others have speculated that adding a “third person in the communications loop” (U.S. Department of the Army, 2006) during an investigative interview may negatively impact the establishment of rapport. This research draws on group dynamics research and adopts a content-analytic approach using the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007) to examine interviewee rapport in real-world investigative interviews. The comparison of dyadic interviews in which one interviewer was present and triadic interviews in which two interviewers were present revealed no significant reduction in interviewee rapport. These findings suggest that the anecdotal concern that “three is a crowd” and that the addition of a third party may result in decreased rapport may be unfounded. Further research on the group dynamics of the investigative interview is discussed.

Keywords: rapport, investigative interview, presence of others, group size, LIWC

In the inaugural issue of *Group Dynamics*, Forsyth (1997) emphasized the value of basic group research that addressed real-world problems. Perhaps one of the greatest current national requirements in the post-9/11 environment is the capability of security, intelligence, and law enforcement personnel to gather information to deter actions by those who intend to cause harm (see Brandon, 2011; Loftus, 2011). Typically, this process of information gathering is done by questioning or interviewing wit-

nesses or suspects who may have information of interest. In fact, experts claim that it would be difficult to overstate the importance of the investigative interview as a method of information collection (Borum, 2006). As Loftus (2011) has noted, psychology has much to contribute to this topic, including obtaining a better understanding of effective methods for investigative interviewing.

At a broad level, interviewing has been described simply as a conversation with a purpose (Brenner, 2006). More specifically, Downs, Smeyak, and Martin (1980) define interviewing as structured communication to accomplish a task-related purpose. Moreover, some authors have distinguished between interviews and interrogations. For example, Meissner, Evans, Brandon, Russano, and Kleinman (2010) drew a distinction between the information-gathering interview, the purpose of which is to obtain reliable information about an event, and the interrogation, the purpose of which is to obtain a confession, which can be presented at trial to obtain the conviction of a guilty party. We use the term *investigative interview* to refer to information-gathering interviews to obtain infor-

This article was published Online First September 3, 2012.

Tripp Driskell and Eduardo Salas, Department of Psychology, Institute for Simulation and Training, University of Central Florida; Elizabeth L. Blickensderfer, Human Factors and Systems Department, Embry-Riddle Aeronautical University.

Research support was provided by the Department of Defense. We acknowledge Susan E. Brandon, Federal Bureau of Investigation, and James E. Driskell for their contributions.

Correspondence concerning this article should be addressed to Tripp Driskell, Department of Psychology, Institute for Simulation and Training, University of Central Florida, P.O. Box 161390, Orlando, FL 32826. E-mail: tdriskel@ist.ucf.edu

mation that is useful for intelligence or investigation purposes.

Although many investigative interviews are conducted using a single interviewer, some research has suggested that there may be advantages to conducting “tandem interviews,” in which two interviewers are present during an investigation (Kincaid & Bright, 1957). Employing two interviewers may achieve the traditional advantages of teamwork, such as the ability to pool resources and exchange information. On the other hand, anecdotal evidence suggests that the introduction of a third party member, into an otherwise dyadic communication process, may negatively impact the interview process. According to the National Center for Credibility Assessment (NCCA), a federal center and clearinghouse for credibility assessment in intelligence and law enforcement, several complications may arise with the introduction of a third party in the investigative interview, specifically that “three is a crowd,” and that it may be “more difficult to establish rapport” (DACA, 2007, pp. 2–12). In fact, the Department of Defense field manual on intelligence collection cautions that a “third person in the communications loop” may negatively impact the establishment of rapport (Department of the Army, 2006).

This may be especially problematic because of the emphasis on the use of rapport-based interview techniques in law enforcement and intelligence settings. As stated in a recent U.S. DOJ Office of the Inspector General report (2008), “the FBI has consistently stated its belief that the most effective way to obtain accurate information is to use rapport-building techniques in interviews.” In a recent United States Intelligence Science Board report on gathering information, Fein (2006) concluded that rapport is both the most critical element in investigative interviews and the most difficult to establish. In a review of law-enforcement interview procedures, Schollum (2005) stated that the ability to establish rapport is one of the core factors in police interviews.

The objective of this research is to examine how the introduction of a third party (i.e., a second interviewer) affects interviewee rapport in an investigative setting. In the following, we discuss group-dynamics research that informs this question, define the construct of

rapport, and present an empirical examination of the effects of a third party on interviewee rapport in real-world investigative interviews.

Three Is a Crowd: The Effects of Group Size and the Presence of Others

As prescribed in the book of Ecclesiastes, “Two are better than one, because they have a good return for their toil” (Ecclesiastes 4:9–12, cited in Forsyth, 2011). And, some 2,000 years later, existing research tends to support this claim. Increases in group size can, under certain conditions, increase overall productivity (Laughlin, Hatch, Silver, & Boh, 2006), although increased group size can also lead to more negative affect and dissatisfaction (Shaw, 1981). However, Simmel (1964) was perhaps one of the earliest researchers to compare differences in group dynamics between dyads and triads. He proposed that the dyad and triad were fundamentally different in terms of intimacy, noting that “This particular closeness between the two is most clearly revealed if the dyad is contrasted with the triad. For among three elements, each one operates as an intermediary between the other two” (Simmel, 1964, p. 127). According to Simmel’s view, the intimacy or closeness that is inherent in the dyad is less evident in the triad. This suggests that the addition of a third party to the interviewer–interviewee dyad may negatively impact mutual involvement and disrupt the development of rapport.

Other research has examined the effects of the presence of others on the individual. Mullen, Bryant, and Driskell (1997) argued that the presence of others may have positive effects in terms of providing resources necessary for coping with a stressful situation, or the presence of others may have negative effects in increasing apprehension and attentional conflict. In a meta-analysis of this research literature, they found that the presence of an *audience* (i.e., those explicitly monitoring and observing the participant’s behavior) led to more negative affect or greater perceptions of tension or unease. Given that one goal in establishing rapport is to create a positive atmosphere, this would lead us to expect that, adding a third party to the interviewer–interviewee dyad, especially in that they constitute another potential evaluative other, may result in lower interviewee rapport.

Thus, we have two opposing maxims. The prevailing wisdom holds that two heads are better than one, and yet on the other hand we have the adage that three is a crowd and Old's (1946) tongue-in-cheek suggestion that the optimal size for a group is approximately 0.7 people. More precisely, drawing from both Simmel (1964) and Mullen et al. (1997), we find some theoretical and empirical rationale for the suggestion that the addition of a third party to the interviewer-interviewee dyad may negatively impact rapport.

Rapport

The word "rapport" comes from the French *raport*, or to report. Thus, the earliest use of the term referred to the act of reporting, bringing back information, or connecting one party with another. In this sense, a *rapporteur* was one who connected or formed a relationship between two parties through the act of reporting some type of information. The use of the term *rapport* evolved from the earliest meaning as the act of reporting or connecting two parties with information to a more current meaning that reflects a connection or relationship between two parties.

Cappella (1990) defined rapport as a "feeling state experienced in interaction with another as interest, positivity, and balance" (p. 303). Walsh and Bull (2012) recently examined rapport in investigative interviews, describing rapport as "a harmonious relationship [of subjects] with their interviewers" (p. 1). Gremler and Gwinner (2000) define rapport in service relationships as "a customer's perception of having an enjoyable interaction . . . characterized by a personal connection between the two interactants" (p. 92). Kleinman (2006) uses the term "operational accord" to refer to a relationship "with a source that is marked by a degree of conformity and/or affinity and is based on a sense of understanding of, and perhaps even guarded appreciation for, respective concerns, intentions, and desired outcomes" (p. 244).

Perhaps the most comprehensive attempt to define the nature of rapport was presented by Tickle-Degnen and Rosenthal (1990). Tickle-Degnen and Rosenthal defined rapport conceptually as comprised of three core components: (a) *mutual attentiveness*, the expression of mutual attention and involvement with the other, (b) *positivity*, feelings of mutual friendliness

and warmth, and (c) *coordination*, or harmony and synchrony of interaction. Further, rapport is reflected in both feelings and behavior. Thus, the experience of rapport will be reflected in feelings of attentiveness and related behaviors, such as body posture and feelings of positivity; behavioral correlates, such as smiling or nodding; and feelings of coordination or being "in sync" and behaviors related to interactional synchrony.

Tickle-Degnen and Rosenthal (1990) further noted that although all three components are central to rapport, the relative importance of attention, positivity, and coordination may vary depending on the stage of interaction. They argue that in the early stages of interaction, positivity is most important to the perception of rapport, whereas in later interactions, coordination is more salient to perceived rapport. The importance of mutual attention remains constant throughout the lifecycle of an interaction. The temporal aspects of the Tickle-Degnen and Rosenthal model are presented in Figure 1.

To test the effects of a third party on interviewee rapport, real-world investigative interview transcripts were acquired from local and state law-enforcement agencies. The investigative interviews of criminal cases that have been adjudicated are public records, and were obtained by requesting these from the appropriate agencies. The interviews were typically conducted in an interview room setting; they were

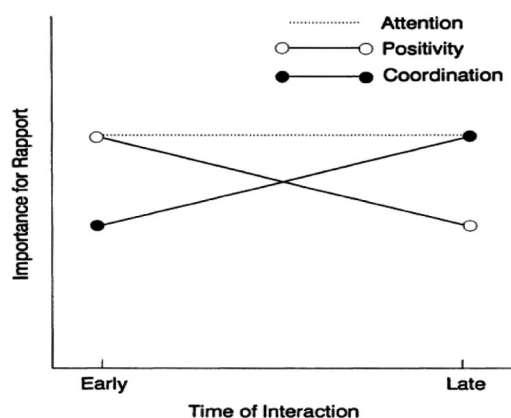


Figure 1. Tickle-Degnen and Rosenthal (1990) three-component model of rapport. Reprinted with permission of Taylor & Francis Ltd. from "The Nature of Rapport and Its Nonverbal Correlates," by L. Tickle-Degnen and R. Rosenthal, 1990, *Psychological Inquiry*, 1, pp. 285–293.

conducted to gather information from a witness or suspect for a variety of offenses, from burglary to assault; and varied in that either one interviewer or two interviewers conducted the interview. We compared investigative interviews in which one interviewer was present to interviews in which two interviewers were present to examine differences in interviewee rapport.

Method

Materials

Investigative interview transcripts acquired from state and local police departments in the southeastern United States were used as the source material for this study. We requested that these agencies provide samples of investigative interview transcripts that had been adjudicated and were available in their files. Specifically, 55 investigative interview transcripts were obtained and used. The content of the transcripts subsumed two principal areas: criminal investigations and internal affairs. From these two principal areas, 21 transcripts came from criminal investigations and 34 came from internal affairs.¹ Of the 55 transcripts, 30 were dyadic interviews (one interviewer and one interviewee) and 25 were triadic interviews (two interviewers and one interviewee). The interviews were conducted by male officers in both the dyadic and triadic interviews. Of the 55 interviewees, 16 were female and 39 were male.

Several features of the investigative transcripts bear mentioning. First, the investigative interviews covered a variety of offenses. For example, one criminal case involved an investigation of an individual charged with extortion and molestation of a minor. One internal affairs investigation, for instance, involved a use-of-force case in which an officer lethally wounded a suspect. Second, the interviewees included both suspects and witnesses. However, the interviewees in the investigative interview transcripts are not classified as specifically one or the other, and we do not make a distinction between the two. Third, either one or two investigators conducted the interviews. We were not able to discern any specific rationale for the use of one or two interviewers. Officers questioned stated that it did not depend on any specific factor, such as the severity of the crime,

but usually on whether another case officer was present and available for the interview or not.

The average word count of the investigative transcripts was 3,768.29, and ranged from 623 to 15,434 words. On average, dyadic interviews consisted of 2,883.97 words ($SD = 2,160.31$), and triadic interviews consisted of 4,829.48 words ($SD = 4,034.10$). This latter difference was significant, $t(53) = -2.28$, $p < .05$. When examining word counts of interviewers and interviewees separately, interviewers in dyadic interviews averaged 1,214.03 words ($SD = 1,247.31$), whereas those in triadic interviews averaged 1,891.44 words ($SD = 1,846.08$). This difference was not significant. Moreover, interviewees in dyadic interviews averaged 1669.93 words ($SD = 1,096.91$), and those in triadic interviews averaged 2,938.04 words ($SD = 2,735.39$). This difference was found to be significant, $t(53) = -2.33$, $p < .05$.

The Linguistic Inquiry and Word Count (LIWC) 2007 program (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007) was used to analyze the transcripts and assess interviewee rapport. LIWC is one of the most extensively developed and widely used computerized text-analysis programs (Pennebaker, Chung, et al., 2007). LIWC is a computerized word-count program that categorizes words into standard grammatical categories (pronouns, propositions, etc.) and into psychologically derived categories (such as negative emotions, anxiety, etc.; Pennebaker, Mehl, & Niederhoffer, 2003). More specifically, LIWC provides a means to examine interviewee rapport by assessing differences in attentiveness, positivity, and coordination.

Measures

The way that people use specific words or specific language can reveal much about the individual's state of mind (Pennebaker et al., 2003). For example, Pennebaker and Chung (2008) recently examined the speeches of Osama bin Laden and Ayman al-Zawahiri to

¹ T-tests employing a Bonferroni correction indicated no significant differences (two-tailed) between the two principal areas and the three components of rapport (mutual attentiveness: $t(53) = .99$, $p = .33$; positivity: $t(53) = -.14$, $p = .89$; coordination: $t(53) = .19$, $p = .85$). Thus, these two principal areas were collapsed for subsequent analyses.

explore changes in the presence of emotionality, anger, and other social and psychological states. This form of linguistic analysis, according to Pennebaker and Chung, “studies how the language people use in writing a document (or even naturally speaking) reflects who the authors are. That is, the manner(s) in which people use language reflects their basic social and psychological state” (p. 3).

The LIWC program was devised as a tool to analyze language on a word-by-word basis (Pennebaker, Booth, & Francis, 2007). It analyzes text files or verbal transcripts for groups of words that match a number of predefined categories, and provides measures of total word count, linguistic dimensions, word categories tapping psychological constructs, such as social processes, and other paralinguistic dimensions, such as fillers or nonfluencies. For each conversation, LIWC calculates each linguistic category, such as the use of positive emotion words, and expresses each as a percentage of total words in the text.

In this study, and consistent with Tickle-Degnen and Rosenthal (1990), rapport is conceptualized as including three primary components: mutual attentiveness, positivity, and coordination. Each component will be assessed in the following manner (see Table 1).

Mutual attentiveness may be defined in terms of immediacy and mutual attention. Pennebaker et al. (2003) have examined attentional focus using the term *verbal immediacy*. Verbal immediacy reflects the extent to which people exhibit closer psychological distance, or the extent to which speakers are socially engaged. According to Pennebaker et al. (2003), “Individuals who are verbally immediate tend to use the present tense, are more personal in their interaction, and

draw on the speaker and audience’s shared reality” (p. 563).

We assess mutual attentiveness or immediacy by the following LIWC categories: (a) use of first person plural pronouns such as *we*, (b) use of the present verb tense, and (c) and use of words related to social processes. The proportionate use of first-person plural pronoun usage (e.g., *we*) has been used by Wegner and Giuliano (1980) and Mullen, Chapman, and Peaugh (1989) to assess self-focus versus other-focus in groups. Driskell, Salas, and Johnston (1999) used this measure to assess collective orientation in teams, and found that it was correlated with other measures of social engagement, such as the extent to which participants perceived themselves as a team. The use of the present verb tense reflects temporal closeness in distance and time (see Pennebaker et al., 2003) and is seen as an indicator of the extent to which people are living in the moment (Petrie, Pennebaker, & Sivertsen, 2008). The use of words related to social processes reflects reference to other people through communication (see Pennebaker et al., 2003), and was shown to be significantly related to extraversion (Pennebaker & King, 1999).

Positivity, the second component of rapport, has been defined by Tickle-Degnen and Rosenthal (1990) in terms of positive emotion or affect. Positive affect is reflected in the LIWC categories of (a) greater positive emotion and (b) less negative emotion. Research demonstrates that the presence of positive emotion and the absence of negative emotion are thought to be unique concepts (Bradburn, 1969), and validation studies found that the LIWC measures of positive and negative emotion accurately distinguished between emotional expres-

Table 1
Three-Component Model of Rapport as Measured by LIWC

Rapport component	LIWC categories
Mutual attentiveness	- use of first person plural pronouns such as <i>we</i> - use of the present verb tense - use of words related to social processes
Positivity	- greater positive emotion - less negative emotion
Coordination	- fewer speech errors or non-fluencies - greater expressions of assent or agreement - greater expressions of certainty - fewer conjunctions such as <i>but</i> .

sion when manipulated by the act of writing happy or sad autobiographical excerpts or by viewing happy or sad films (Kahn, Tobin, Massey, & Anderson, 2007). The LIWC category of *positive emotion* is comprised of terms (e.g., happy, good) that reflect positive emotion or positively valenced words. The LIWC category of *negative emotion* is comprised of terms (e.g., hate, worthlessness) that reflect negative emotion or negatively valenced words. Pennebaker and Francis (1996) assessed the external validity of LIWC and found that judges' ratings correlate highly with LIWC scales for positivity ($r = .41$) and negativity ($r = .31$), suggesting "that LIWC successfully measures positive and negative emotions" (Pennebaker, Chung, et al., 2007, p. 9).

Coordination, the third component of rapport, may be defined in terms of equilibrium and predictability in interaction, and a lack of awkwardness, misunderstanding, and error. We assess coordination in interviewee speech by the following LIWC categories: (a) fewer speech errors or nonfluencies, (b) greater expressions of assent or agreement, (c) greater expressions of certainty, and (d) fewer conjunctions such as *but*.

In addition to these individual-level linguistic measures of coordination, we also examine the interactive measure of verbal coordination called *language style matching* (LSM) (Niederhoffer & Pennebaker, 2002; Ireland & Pennebaker, 2010; Ireland et al., 2011). LSM provides a dyad-level measure of synchrony in social interaction by examining the extent to which two persons in conversation match each other's speech style. By examining the relative use of nine function-word categories (e.g., personal pronouns, adverbs), LSM provides a measure of verbal coordination between two individuals. We expect LSM to provide an alternative measure of coordination and to correlate with the individual-level coordination items.

Procedure

The investigative interview transcripts used in this study were scanned and cleaned using the LIWC protocol, and entered into LIWC for analysis. For example, to clean transcripts for analysis, the following conventions were followed: If an interviewee uttered nonfluencies such as "uh," or "um," the LIWC protocol was

followed by typing them into the transcripts. Fillers, such as "you know" and "I mean" were changed to "youknow" and "Imean" to be coded as LIWC fillers. Words commonly used as fillers (e.g., "well" and "like") were entered as "rrwell" and "rrlike," also to be coded as fillers.

The LIWC output presents each relevant linguistic category expressed as a percentage of the total number of words, thus controlling for the length of the interview. The mutual attentiveness measure was computed by aggregating the scores for first-person plural, present verb tense, and social-processes categories. The positivity measure was assessed by positive-emotion word usage minus negative-emotion word usage. The coordination measure was computed by aggregating the scores for speech errors (negatively scored), assent, certainty, and conjunctions (negatively scored), as well as by examining language style matching (LSM).

In the analysis of the three components of rapport, we chose to focus specifically on interviewee rapport, rather than aggregating rapport at the group level. A considerable amount of research on rapport, including Tickle-Degnen and Rosenthal's (1990) work, derives from research on intimate relationships such as friendships, in which mutuality of rapport is critical. That is, rapport in intimate relationships is a property that requires a mutuality, in that both individuals must experience feelings of attentiveness, positivity, and coordination for rapport to be present. As Duncan (1990) stated, "Rapport is not achieved if only one person is interested" (p. 310). However, other researchers, such as LaFrance (1990) have argued that the *instrumental* role of rapport as a strategy for gaining cooperation in applied settings (such as the investigative interview) has been largely overlooked. In such a setting, LaFrance stated, "Rapport is sought not because it is desirable in and of itself, but because it is a means to an end" (p. 318). Thus, in an investigative interview setting, it is likely to be less important that the interviewer experiences rapport than it is that the interviewee experiences rapport. Accordingly, our goal is to examine the effects of a third party on *interviewee* rapport in an investigative interview setting.

However, the LSM measure of coordination requires the analysis of speech coordination at the dyad and triad level. We calculated an LSM score for each dyad, following Ireland and Pen-

nebaker (2010), as the absolute value of the difference between the two speakers in the use of the nine function-word categories—personal pronouns, impersonal pronouns, articles, auxiliary verbs, adverbs, prepositions, conjunctions, negations, and quantifiers—divided by the total for each category. The LSM score was calculated for each of the nine function-word categories using the following equation:

$$LSM_{(\text{function})} = 1 - \left[\frac{(|\text{function}_1 - \text{function}_2|)}{(\text{function}_1 + \text{function}_2 + .0001)} \right]$$

In this formula, function_1 represents the percentage of personal pronouns, for example, used by Dyad Member 1, and function_2 represents the percentage of personal pronouns used by Dyad Member 2. An overall LSM score is computed by averaging the LSM scores of the nine function-word categories.

To calculate an LSM score for triads, Gonzales, Hancock, and Pennebaker (2010) note that there are multiple ways in which LSM scores for groups larger than dyads could be calculated. The approach they adopted for group analysis was to compare each person's speech with the average of the remaining group members and averaging these scores to obtain an overall group score. Given the structure of the investigative interview, we chose to calculate LSM by simply comparing the interviewee's speech with the average of the two interviewers' speech for each of the nine function categories. The LSM score was calculated for triads as follows: $LSM_{(\text{function})} = 1 - \left[\frac{(|\text{function}_1 - \text{function}_{\text{group}}|)}{(\text{function}_1 + \text{function}_{\text{group}} +$

.0001)], in which function_1 reflects the function-word category for interviewee speech, and $\text{function}_{\text{group}}$ reflects the function-word category for both interviewers' speech. Thus, for dyads, LSM compares the speech of the interviewee with the speech of the interviewer, and for triads, LSM compares the speech of the interviewee with the average of the two interviewers.

Results

Table 2 presents the results for the individual linguistic categories comprising the three composite measures of rapport for the dyad and triad interviews. To investigate group-composition differences in relation to rapport, a one-way multivariate analysis of variance (MANOVA) was performed using the three composite, dependent variables of mutual attentiveness, positivity, and coordination. The independent variable was group composition (dyad vs. triad). Preliminary assumption testing was conducted to check for normality, linearity, univariate, and multivariate outliers. Several of the items that comprise the composite variables were transformed to meet the assumption of univariate normality. A square-root transformation was performed on the following variables: first-person plural, nonfluencies, and assent. Following the transformations, resulting histograms and probability–probability plots were reassessed to determine if they met normality. Other than these deviations, no serious violations were noted. The results from the analysis indicate that there was no statistically significant difference between dyads and triads on the combined

Table 2
Individual LIWC Categories

Construct	LIWC categories	Dyads	Triads
Mutual attentiveness	1st-Person plural pronouns	19.87	21.66
	Present verb tense	.87	.98
	Social processes	6.97	7.97
Positivity		12.04	12.71
	Positive emotion	.35	.48
	Negative emotion	1.32	1.67
Coordination		.97	1.12
	Non-fluencies	–6.17	–5.51
	Assent or agreement	1.04	1.06
	Certainty	1.82	1.67
	Conjunctions	1.03	1.22
		7.34	6.85

Table 3
Tests of Between-Subjects Effects

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
Group	Mutual attentiveness	43.39	1	43.39	1.70	.197
	Positivity	.26	1	.26	.341	.562
	Coordination	5.87	1	5.8	2.09	.154

dependent variables, $F(3, 51) = 1.33, p = .275$, Wilks' $\lambda = .93$; partial $\eta^2 = .07$. Subsequent univariate tests were nonsignificant (see Table 3). The overall results are presented in Table 4.

An independent-samples t test was conducted in order to investigate group-composition differences in respect to the LSM metric. The means between dyadic and triadic interviews on the composite LSM indicated no significant difference, $t = -1.82$, n.s. Comparable to the measure of coordination, the means for the LSM are as follows: dyadic interviews = .85 and triadic interviews = .87. Moreover, the *coordination* measure and the composite LSM were significantly correlated, $r = .48, p < .001$.

To examine the temporal aspects of rapport over the course of the investigative interview, each transcript was segmented into thirds by word count, representing early, middle, and late phases of the interview. We separated the investigative interviews into equal thirds for two reasons. First, from an investigative interviewing perspective, the stages of the social interaction are often divided into three phases. For example, the PEACE model (UK Central Planning & Training Unit, 1992) reflects a staged interview process: Specifically, a preparation and planning stage, an engage and explain phase, an account clarification and challenge phase, a closure phase, and an evaluation phase. And second, although an exact time to be spent

in each interview phase has not yet been identified, Schollum (2005) notes that each phase of the interview should be complete and given equal weight.

Recall that according to the Tickle-Degnen and Rosenthal (1990) model of rapport, in the early phase of an interaction, positivity is more important than coordination; in the later phase, coordination is more important than positivity; and the importance of attention remains constant throughout the interaction. Figure 2 depicts how the three components of rapport evolve over the course of the investigative interviews. Figure 3 presents the results for positivity and coordination on a more suitable scale. Results are not shown separately for dyads and triads because the patterns observed in Figures 2 and 3 were consistent for all groups. The results are in general agreement with the Tickle-Degnen and Rosenthal model of rapport, in that attentiveness is consistent from early to later stages of interaction, and there is a tendency for positivity to decrease and coordination to increase over the course of the interaction.

Post hoc analyses of the temporal aspects of the investigative interview were conducted via separate analyses of variance (ANOVAs) for each component of rapport. In terms of mutual attentiveness, no significant differences were found between the three phases of an investiga-

Table 4
Overall Results

Dependent variable	Group	Mean	SE	95% Confidence interval	
				Lower bound	Upper bound
Mutual attentiveness	Dyad	19.87	.92	18.03	21.72
	Triad	21.66	1.01	19.63	23.68
Positivity	Dyad	.35	.16	.03	.67
	Triad	.48	.18	.13	.84
Coordination	Dyad	-6.17	.31	-6.78	-5.56
	Triad	-5.51	.34	-6.19	-4.84

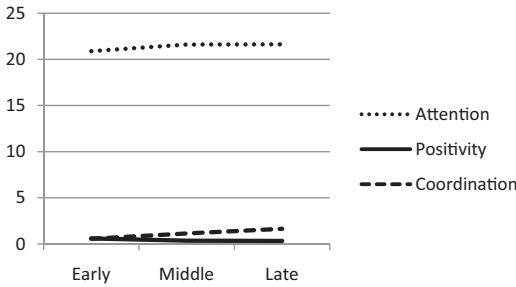


Figure 2. Evolution of the three components of rapport.

tive interview, $F(2, 138) = .276, p = .759$, partial $\eta^2 = .004$. For coordination, a significant result was found, indicating that significant mean differences exist between the three phases of an investigative interview, $F(2, 138) = 3.983, p = .021$, partial $\eta^2 = .06$. Post hoc comparisons using the Tukey’s Honestly Significant Difference (HSD) indicated that the early phase of the interview ($M = .56, SD = 1.95$) showed significantly less coordination than the late phase of the interview ($M = 1.64, SD = 1.51$). The middle phase ($M = 1.11, SD = 2.03$) did not differ significantly from either the early or late phase. Although there was a tendency for positivity to decrease over the three stages, these results were not significant, $F(2, 128) = .894, p = .411$, partial $\eta^2 = .013$.

Additionally, post hoc analyses of the temporal aspects of the investigative interview were conducted via simple linear regression for the LSM metric. We used the total word count of the investigative interview (i.e., interviewee word count + interviewer word count) as a proxy for time. Specifically, total word count was the predictor variable and composite LSM score was the outcome variable. The regression analysis revealed that the total word count of an investigative interview was a significant predictor of its overall LSM score, $b = .427, t(53) = 3.44, p < .01$. Additionally, total word count accounted for a significant portion of variance in overall LSM score, $R^2_{adj} = .17, F(1, 53) = 11.81, p < .01$. Results indicate that as length of the investigative interview increases, the verbal coordination between interviewees and interviewers also increases. This finding is in general agreement with the Tickle-Degnen and Rosenthal (1990) model of rapport.

Discussion

The primary objective of this research was to examine the extent to which interviewee rapport is affected by the addition of a third party in the investigative interview. The results showed no significant difference in mutual attentiveness, positivity, or coordination between dyadic interviews in which one interviewer was present, and triadic interviews in which two interviewers were present. This is practically important because many law-enforcement interviews employ “tandem interviews,” where two interviewers are present during an investigation (Kincaid & Bright, 1957). These results suggest that the anecdotal concern that “three is a crowd” and that the addition of a third party may impact rapport in the investigative interview may be unfounded. However, considering the exploratory nature of this research, caution should be taken when extrapolating conclusions from these results. Nevertheless, these results shed light on an understudied and practically relevant topic.

How do we account for these results? Mullen et al. (1997) examined two competing explanations for the effects of the presence of others – Schachter’s (1959) classic affiliation approach and Zajonc’s (1965) drive-arousal mode—and found that both were partially correct. That is, Mullen et al. argue that the presence of *audience* others can increase negative affect (reflecting the negative effect stemming from an additional source of monitoring and attentional conflict), whereas the presence of *coactor* others can decrease negative affect in aversive situations (reflecting the positive effects of social support and affiliation). However, very rarely in

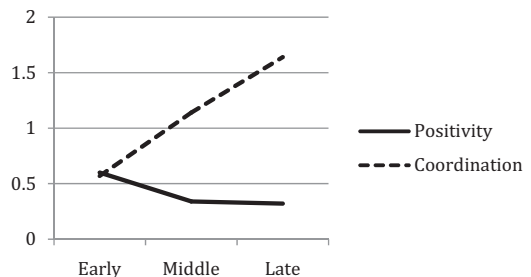


Figure 3. Evolution of positivity and coordination.

the real world are the types of others present (coactor others or audience others), as clearly defined as they are in the experimental laboratory. In a real-world investigative interview, the "other" may have elements of both. That is, a second interviewer in an interviewer-interviewee dyad may serve as an additional evaluative other, as well as serve as an additional coactor involved in the information gathering process. This is speculation, albeit consistent with what we know regarding the presence of others (cf. Mullen et al., 1997). Nevertheless, it is consistent with the results of the current study.

We also examined the temporal nature of rapport over the course of the investigative interview, and found evidence supporting the Tickle-Degnen and Rosenthal (1990) model. According to the model, mutual attentiveness is important over the course of the interaction; positivity is important in the initial stages of interaction and becomes less so in later stages; and coordination is less important in the initial stages of interaction and becomes more important in the later stages of interaction. The rationale for what Tickle-Degnen and Rosenthal call the developmental trajectories of these three components of rapport is based on research on interpersonal relationships. Our results suggest that these temporal predictions may also apply to instrumental interactions, even those of relatively short duration.

There are several strengths of this analysis that should be noted. First, this research attempts to address an applied topic of considerable real-world concern within a framework of group-dynamics research and theory. To our knowledge, this is the first empirical study to address the impact of a third party on rapport in the investigative interview. Second, this question was examined by analysis of archival, law-enforcement investigative interviews, which provide a rich source of real-world data that can be subjected to detailed scrutiny. Third, this is the first research, to our knowledge, in which rapport has been assessed through the examination of natural language use, applying the LIWC linguistic-analysis approach.

On the other hand, there are limitations to this analysis and the implications that can be drawn from it. We used a computerized content-analysis approach to assess rapport. Pennebaker, Chung, et al. (2007) are perhaps most

eloquent in describing content analysis: "The ways that individuals talk and write provide windows into their emotional and cognitive worlds" (p. 3). That is, the words that people use in natural language can provide important cues to their thought processes, emotional states, intentions, and motivations (Tausczik & Pennebaker, 2010). However, there remain drawbacks to this type of approach. For instance, content-analysis programs such as LIWC focus on word usage, but ignore the context, irony, sarcasm, and idioms of language use (Tausczik & Pennebaker, 2010). The word "nice," for example, is coded as a positive emotion word. If an officer informs a suspect that he or she is being charged with a particular crime, he or she may sarcastically utter "nice," and the meaning and intent of his or her utterance would be misinterpreted. Moreover, the decontextualized approach of word-count programs makes it difficult to compare meaning across texts. For example, Mehl (2006) notes that the sentences "the dog bit the man" and "the man bit the dog" are scored exactly the same in linguistic-based analyses. However, proponents of this approach argue that word-count approaches have shown considerable success in a broad number of applications in psychology, and that, for many questions, it is not necessary to specify the relationship between themes or concepts, but it is simply sufficient to know that certain themes exist in speech or writing.

Second, the current research examined rapport as a manifestation of an individual's verbal behavior. Although a person's verbal behavior provides a reasonable approach to assessing rapport, it is likely that rapport is also reflected in other types of behaviors (e.g., nonverbal behaviors, intonation, etc.). Therefore, future research is needed that would employ a multi-dimensional approach to investigating and measuring rapport.

Third, one possible alternative explanation for the results is that, because investigative interviews may be negatively valenced encounters overall, there may be a possible floor effect on rapport in this type of environment. For example, Table 2 indicates that positive-emotion words accounted for approximately 1.3% of the verbal communication in dyad interviews, and approximately 1.7% of the verbal communication in triad interviews. However, Pennebaker, Chung, et al. (2007) reported

that across multiple samples of text and spoken conversations, positive-emotion words account for only about 2.7% of word usage, and Mehl and Pennebaker (2003) found that positive-emotion words account for about 3.2% of word usage in natural conversations. It seems that normal conversation is not heavily laden with positive-emotion words, or negative-emotion words for that matter, and this is not substantially different from what we find in our analyses of investigative interviews.

The archival transcripts obtained from the law-enforcement agencies are a rich source of naturalistic investigative interviews. However, it is useful to consider whether or not there may have been systematic differences between the dyad- and triad-interview settings that may have affected the results. Certainly, offenses may differ in terms of severity, and the investigative transcripts involved cases ranging from battery to theft to robbery with a lethal weapon. We queried our contacts in the law-enforcement agencies as to whether the presence of a second interviewer in an investigative interview was related to the severity of the crime, and there was no indication that this was the case, but more a function of whether the second officer was scheduled elsewhere or available for the interview. Nevertheless, the possibility remains that these and other possible confounds may exist.

Finally, we have examined rapport in investigative interviews because (a) rapport is one factor that has been identified in anecdotal reports that may be impacted by the presence of a third party, and (b) rapport is a core feature of current rapport-based interview approaches. However, there are certainly other important aspects of the investigative interview that may be impacted by a third party, such as questioning approaches or deception of deception. Further research is needed to understand the social dynamics of investigative interviewing.

Conclusions

As Loftus (2011) has noted, gathering accurate information by interviewing witnesses or persons of interest has taken on heightened importance in the post-9/11 era. She further notes that “information is also gathered from myriad individuals who have relevant facts to provide, and occasionally the smallest details can be

important” (p. 532). Current perspectives on effective interviewing adopt a rapport-based interview approach, but concerns have been addressed that the use of multiple or “tandem” interviewers may jeopardize interviewee rapport. This research takes an initial step to examine the effect of a third party on interviewee rapport in an investigative interview setting. The results suggest that anecdotal reports implying that “three is a crowd,” and that the addition of a third party may result in decreased rapport, may be unfounded. These results suggest the value of further empirical analysis of the group dynamics of the investigative interview.

References

- Borum, R. (2006). Approaching truth: Behavioral science lessons on educing information from human resources. In R. A. Fein (Ed.), *Educing information: Interrogation: Science and art: Intelligence Science Board Phase I report*. (pp. 17–43). Washington, DC: United States Department of Defense, National Defense Intelligence College.
- Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago, IL: Aldine.
- Brandon, S. E. (2011). Impacts of psychological science on national security agencies post-9/11. *American Psychologist*, 66, 495–506. doi:10.1037/a0024818
- Brenner, M. (2006). Interviewing in educational research. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in educational research* (pp. 357–370). Mahwah, NJ: Erlbaum.
- Cappella, J. N. (1990). On defining conversational coordination and rapport. *Psychological Inquiry*, 1, 303–305. doi:10.1207/s15327965pli0104_5
- Downs, C. W., Smeyak, G. P., & Martin, E. (1980). *Professional interviewing*. New York, NY: Harper & Row.
- Driskell, J. E., Salas, E., & Johnston, J. (1999). Does stress lead to a loss in team perspective? *Group Dynamics: Theory, Research, and Practice*, 3, 291–302. doi:10.1037/1089-2699.3.4.291
- Duncan, S. (1990). Measuring rapport. *Psychological Inquiry*, 1, 310–312. doi:10.1207/s15327965pli0104_8
- Fein, R. A. (Ed.). (2006). *Educing information: Interrogation: Science and art: Intelligence Science Board Phase I report*. Washington, DC: United States Department of Defense, National Defense Intelligence College.
- Forsyth, D. R. (1997). The scientific study of groups: An editorial. *Group Dynamics: Theory, Research, and Practice*, 1, 3–6. doi:10.1037/h0092697

- Forsyth, D. R. (2011). *Group dynamics resource page*. Retrieved from <http://facultystaff.richmond.edu/~dforsyth/gd/>
- Gonzales, A. L., Hancock, J. T., & Pennebaker, J. W. (2010). Language style matching as a predictor of social dynamics in small groups. *Communication Research*, 37, 3–19. doi:10.1177/0093650209351468
- Gremler, D. D., & Gwinner, K. P. (2000). Customer–employee rapport in service relationships. *Journal of Service Research*, 3, 82–104. doi:10.1177/109467050031006
- Ireland, M. E., & Pennebaker, J. W. (2010). Language style matching in writing: Synchrony in essays, correspondence, and poetry. *Journal of Personality and Social Psychology*, 99, 549–571. doi:10.1037/a0020386
- Ireland, M. E., Slatcher, R. B., Easteick, P. W., Scissors, L. E., Finkel, E. J., & Pennebaker, J. W. (2011). Language style matching predicts relationship initiation and stability. *Psychological Science*, 22, 39–44. doi:10.1177/0956797610392928
- Kahn, J. H., Tobin, R. M., Massey, A. E., & Anderson, J. A. (2007). Measuring emotional expression with the Linguistic Inquiry and Word Count. *The American Journal of Psychology*, 120, 263–286.
- Kincaid, H. V., & Bright, M. (1957). The tandem interview: A trial of the two-interviewer team. *Public Opinion Quarterly*, 21, 304–312. doi:10.1086/266716
- Kleinman, S. M. (2006). Barriers to success: Critical challenges in developing a new educating information paradigm. In R. A. Fein (Ed.), *Educating information: Interrogation: Science and art: Intelligence Science Board Phase I report* (pp. 235–266). Washington, DC: United States Department of Defense, National Defense Intelligence College.
- LaFrance, M. (1990). The trouble with rapport. *Psychological Inquiry*, 1, 318–320. doi:10.1207/s15327965pli0104_11
- Laughlin, P. R., Hatch, E. C., Silver, J. S., & Boh, L. (2006). Groups perform better than the best individuals on letters-to-numbers problems: Effects of group size. *Journal of Personality and Social Psychology*, 90, 644–651. doi:10.1037/0022-3514.90.4.644
- Loftus, E. F. (2011). Intelligence gathering post-9/11. *American Psychologist*, 66, 532–541. doi:10.1037/a0024614
- Mehl, M. R. (2006). Quantitative text analysis. In M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 141–156). Washington, DC: American Psychological Association. doi:10.1037/11383-011
- Mehl, M. R., & Pennebaker, J. W. (2003). The sounds of social life: A psychometric analysis of students' daily social environments and natural conversations. *Journal of Personality and Social Psychology*, 84, 857–870. doi:10.1037/0022-3514.84.4.857
- Meissner, C. A., Evans, J. R., Brandon, S. E., Rus-sano, M. B., & Kleinman, S. M. (2010). Criminal versus HUMINT interrogations: The importance of psychological science to improving interrogative practice. *Journal of Psychiatry & Law*, 38, 215–249.
- Mullen, B., Bryant, B., & Driskell, J. E. (1997). The presence of others on arousal: An integration. *Group Dynamics: Theory, Research, and Practice*, 1, 52–64. doi:10.1037/1089-2699.1.1.52
- Mullen, B., Chapman, J. G., & Peaugh, S. (1989). Focus of attention in groups: A self-attention perspective. *The Journal of Social Psychology*, 129, 807–817. doi:10.1080/00224545.1989.9712089
- Niederhoffer, K., & Pennebaker, J. (2002). Linguistic style matching in social interaction. *Journal of Language and Social Psychology*, 21, 337–360. doi:10.1177/026192702237953
- Old, B. S. (1946). On the mathematics of committees, boards, and panels. *Scientific Monthly*, 63, 75–78.
- Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). *Linguistic Inquiry and Word Count: LIWC* [Computer software]. Austin, TX: LIWC.net
- Pennebaker, J. W., & Chung, C. K. (2008). Computerized text analysis of Al-Qaeda transcripts. In K. Krippendorff & M. Bock (Eds.), *A content analysis reader*. Thousand Oaks, CA: Sage.
- Pennebaker, J. W., Chung, C. K., Ireland, M., Gonzales, A., & Booth, R. J. (2007). *The development and psychometric properties of LIWC2007*. Austin, TX: LIWC.net
- Pennebaker, J. W., & Francis, M. E. (1996). Cognitive, emotional, and language processes in disclosure. *Cognition and Emotion*, 10, 601–626. doi:10.1080/026999396380079
- Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology*, 77, 1296–1312. doi:10.1037/0022-3514.77.6.1296
- Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology*, 54, 547–577. doi:10.1146/annurev.psych.54.101601.145041
- Petrie, K. J., Pennebaker, J. W., & Sivertsen, B. (2008). Things we said today: A linguistic analysis of the Beatles. *Psychology of Aesthetics, Creativity, and the Arts*, 2, 197–202. doi:10.1037/a0013117
- Schachter, S. (1959). *The psychology of affiliation*. Stanford, CA: Stanford University Press.
- Schollum, M. (2005). *Investigative interviewing: The literature*. Wellington, New Zealand: New Zealand Office of the Commissioner of Police.

- Shaw, M. E. (1981). *Group dynamics: The psychology of small group behavior*. New York, NY: McGraw-Hill.
- Simmel, G. (1964). *The sociology of Georg Simmel* (K. H. Wolf, Ed. and Trans.). Glencoe, IL: Free Press.
- Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology, 29*, 24–54. doi: 10.1177/0261927X09351676
- Tickle-Degnen, L., & Rosenthal, R. (1990). The nature of rapport and its nonverbal correlates. *Psychological Inquiry, 1*, 285–293. doi:10.1207/s15327965pli0104_1
- United Kingdom Home Office, Central Planning and Training Unit. (1992). *Investigative interviewing: A guide to interviewing*. London, UK: Author.
- United States Department of Defense, Defense Academy for Credibility Assessment. (2007). *PCASS operators course manual*. Ft. Jackson, SC: Author.
- United States Department of Defense, Department of the Army. (2006). *Human intelligence collector operations: US Army field manual on intelligence interrogations* (Publication No. FM 2–22.3). Arlington, VA: Author.
- United States Department of Justice, Office of the Inspector General, Oversight and Review Division. (2008). *A review of the FBI's involvement in and observations of detainee interrogation in Guantanamo Bay, Afghanistan, and Iraq*. Washington, DC: Author.
- Walsh, D., & Bull, R. (2012). Examining rapport in investigative interviews with suspects: Does its building and maintenance work? *Journal of Police and Criminal Psychology, 27*, 73–84. doi:10.1007/s11896-011-9087-x
- Wegner, D. M., & Giuliano, T. (1980). Arousal-induced attention to self. *Journal of Personality and Social Psychology, 38*, 719–726. doi:10.1037/0022-3514.38.5.719
- Zajonc, R. B. (1965). Social facilitation. *Science, 149*, 269–274. doi:10.1126/science.149.3681.269

Received October 14, 2011

Revision received May 21, 2012

Accepted June 27, 2012 ■

E-Mail Notification of Your Latest Issue Online!

Would you like to know when the next issue of your favorite APA journal will be available online? This service is now available to you. Sign up at <http://notify.apa.org/> and you will be notified by e-mail when issues of interest to you become available!