Suspect Cooperation: Examining Turning Points in Investigative Interviews

by

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Abstract

Suspect interviews are pivotal opportunities to gather relevant information in criminal investigations. The present study applied Druckman’s (2001; 2004) conceptual framework of turning points to better understand pivotal moments in an interview where the suspect’s cooperation shifts toward increased disclosure or withdrawal. The overarching goal was to examine, using a sample of 28 investigative interviews with suspects, whether interviewer behaviours (i.e., question types, evidence presentation/confrontation, rapport, and language style matching) were associated with shifts in suspects’ cooperative stance during the interview. The findings revealed that evidence presentation/confrontation and the positivity aspect of rapport (e.g., friendliness, empathy) were positively associated with turning points, irrespective of whether the turning point was positive or negative. Overall, this study represents an important contribution to the field of investigative interviewing as it is the first to apply the concept of turning points to suspect interviews.
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## Contents

Abstract .................................................................................................................................................. ii
Acknowledgements .............................................................................................................................. iii
Table of Contents ................................................................................................................................. iv
List of Tables .......................................................................................................................................... vi
List of Figures ......................................................................................................................................... vii

### Suspect Cooperation: Examining Turning Points in Investigative Interviews .... 1

- Styles of Investigative Interviewing ................................................................................................. 1
  - Accusatory Interviewing .................................................................................................................. 2
  - Humanitarian Interviewing .............................................................................................................. 4
- Interviewing Practices in Canada ....................................................................................................... 5
- Offender’s Perspective of Interviewing Practice .................................................................................. 6
- Suspect Interviewing: A Dynamic Process .......................................................................................... 8
- Turning Points ..................................................................................................................................... 9
- Turning Points in Investigative Interviewing ...................................................................................... 13
- Language Style Matching ................................................................................................................... 19

### Current Study .................................................................................................................................. 24

### Methodology ................................................................................................................................... 25

- Sample .............................................................................................................................................. 25
- Procedure .......................................................................................................................................... 25
  - Identifying Turning Points ................................................................................................................ 25
  - Identifying Precipitants ..................................................................................................................... 27
  - Interpreting Consequences .............................................................................................................. 31
  - Examining Language Style Matching ............................................................................................ 32
- Data Analysis .................................................................................................................................... 32

### Results ............................................................................................................................................. 33

- Question Types .................................................................................................................................. 33
- Rapport and Linguistic Synchrony ..................................................................................................... 34
- Suspect Cooperation ............................................................................................................................. 35
- Turning Points .................................................................................................................................... 36
- Precipitants ........................................................................................................................................ 37
List of Tables

Table 1: Question Type Categories and Definition ................................................ 28
Table 2: Rapport Components, Indicators, and Examples ................................. 31
Table 3: Descriptive Statistics of Question Types, Rapport, and Language Style
Matching ................................................................................................... 35
Table 4: Pearson’s Correlations Between Turning Points and Interviewer
Behaviours.............................................................................................. 37
Table 5: Multiple Linear Regressions Analyses of Positive and Negative Turning
Points Based on Question Types ............................................................... 41
Table 6: Single Linear Regressions Analysis of Positive and Negative Turning
Points based on Rapport ............................................................................ 42
Table 7: Single Linear Regressions Analysis of Positive and Negative Turning Points
Based on Language Style Matching .......................................................... 42
List of Figures

Figure 1: Frequencies and Standard Errors of Question Type Precipitants for Positive and Negative Turning Points .......................................................... 38

Figure 2: Frequencies and Standard Errors of Rapport Type Precipitants for Positive and Negative Turning Points ........................................................................ 39
Suspect Cooperation: Examining Turning Points in Investigative Interviewing

Suspect interviews frequently represent pivotal opportunities to gather relevant information to advance criminal investigations (Inbau et al., 2001; Meissner et al., 2017). Ideally, suspects will be cooperative throughout the investigative interview, providing the interviewer with detailed, relevant, and accurate information pertaining to the crime. However, it is unlikely for suspects to remain consistently cooperative throughout the interview given that the suspect and interviewer often have different goals (i.e., downplaying culpability vs. determining guilt). Thus, there are likely to be instances throughout the interview where the suspect shifts from being cooperative to uncooperative (and vice versa). These shifts in behaviour - turning points - are the primary focus of the current study. Specifically, the study aimed to examine the relationship between various interviewer behaviours (i.e., questions asked, rapport building strategies, and linguistic synchrony) and turning points in suspect behaviours.

Styles of Investigative Interviewing

With the aim of obtaining a verifiable account, an interviewer can engage in a range of ethical, evidence-based behaviours that have been shown to optimize information gathering (Meissner et al., 2014; Vrij et al., 2007). For instance, findings from multiple studies highlight the effectiveness of open-ended questions and rapport building for gathering information during suspect interviews (Kelly et al., 2016). However, interviewers can also engage in oppressive and coercive behaviours (Meissner et al., 2014). Specifically, studies have demonstrated the negative influence of techniques such as repetitive questions on information gathering during suspect interviews (Goodman-Delahunty, 2020; Meissner et al., 2014). In response to certain techniques used by interviewers, suspects can also display a variety of different behaviours during an interview. For example, suspects can be cooperative (e.g., provide information) or uncooperative
(e.g., respond to questions in aggressive, passive, or disengaged ways). Accordingly, interviewers confronted with resistance from suspects may attempt to facilitate cooperation to increase information yield. Interviewer-interviewee behaviours partly influence each other, thus making a suspect interview a fluid, changing, and dynamic process (Kelly et al., 2016).

In practice, two main styles of investigative interviewing can be observed: the accusatory and the humanitarian styles (Gudjonsson & Pearse, 2011). These interview styles are discussed below.

**Accusatory Interviews**

The accusatory interview is rooted in psychologically coercive strategies such as confrontation, assumptions of guilt, and manipulation (Meissner et al., 2014). For example, interviewers may threaten a suspect with harsh punishment (maximization) or offer moral justification for the alleged crime (minimization). Although systematic research has found the accusatory style of interviewing increases the likelihood of false confessions (Meissner et al., 2014), accusatory methods are still widely taught and used in the United States, Canada, and many Asian countries (Costanzo & Redlich 2010; Smith et al., 2009). The dominant model for interviewing suspects in North America is the Reid Model of Interrogation (Inbau & al., 2013), which is inherently confrontational and accusatorial (Meissner et al., 2012; Miller et al., 2018).

The Reid Technique is comprised of a 15-item behavioral analysis interview (BAI), followed by a nine-step interrogation (Inbau et al., 2013). The purpose of the BAI is to assess suspect’s guilt (i.e., detect deception) or innocence based on various behavioural cues. For instance, the BAI assumes that a guilty suspect will respond evasively or provide ambiguous answers (Masip et al., 2012). Subsequently, suspects perceived as guilty by the interrogator are then subject to the nine-step accusatory interrogation. Throughout the entire interrogation, the
interviewer relies on various deception detection cues (e.g., eye contact, emotional reactions) to assess the veracity information provided by the suspect.

The goal of the accusatory interrogation is to obtain a confession from suspects and is characterized by various psychologically manipulative tactics, including promises of leniency, the use of (implicit) false evidence ploys, prevention of denials, and objections (Snook et al., 2014). Beyond being morally dubious, two main issues arise from the accusatorial interview style. First, studies have repeatedly shown that individuals are very poor at detecting deception. Specifically, a meta-analysis demonstrated that individuals can accurately differentiate truths from lies only at chance levels (Bond & DePaulo, 2006). Similar findings have been reported for samples of police officers (Ekman & O’Sullivan, 1991). When employing the Reid Technique, a lack of accuracy in deception detection increases the risk of subjecting an innocent individual to an accusatory interrogation.

Another major concern with accusatory interview styles is that they increase the risk of obtaining inaccurate information and false confessions (Drizin & Leo, 2004; Snook et al., 2014). In experimental research, the ALT KEY paradigm has been frequently used to investigate the effect of psychological manipulation on confessions (Kassin & Kiechel, 1996). Studies using this design have demonstrated that participants completing a fast-paced data entry computer task were more likely to falsely confess to pressing the “alt” key on the keyboard compared to less vulnerable individuals (Horselenberg et al., 2003; Kassin & Kiechel, 1996). Moreover, when confronted with false incriminating evidence, most participants who were wrongfully accused of causing the computer crash falsely confessed (Horselenberg et al., 2003; Kassin & Kiechel, 1996). Similarly, a novel experimental paradigm encouraging a pool of university participants to intentionally cheat and then be questioned about it (Russano et al., 2005), found that
minimization (i.e., inferred leniency) led to increased confessions, from both guilty and innocent participants. Further research by Horgan et al. (2012) also found that minimization tactics (e.g., instances when the seriousness of the crime is diminished or normalized) led to a higher rate of false confessions among participants compared to interviews that did not use techniques to manipulate the perceived consequences of confessing. Moreover, manipulation of perceived consequences of confessing reduced the diagnostic value of confessions (i.e., reduced likelihood of obtaining true confessions relative to false confessions).

**Humanitarian Interviews**

The second main interview type is the humanitarian style, an ethical approach (i.e., respects human integrity and rights) which encourages information gathering over securing a confession (Snook et al., 2014). The aim of a humanitarian interview is to obtain detailed and accurate information about a crime to conduct an efficient and effective investigation. In England and Wales, a national review of investigative interviewing practices led to the introduction of the PEACE Model of Investigative Interviewing (Planning and Preparation, Engage and Explain, Obtain and Account, Closure, Evaluation; see Milne & Bull, 1999). The first phase (Planning and Preparation) requires interviewers to develop an extensive plan of their goals and questions. For instance, police officers must gather information on the interviewee and establish all investigative elements to be questioned. The next phase of the interview (Engage and Explain) is characterized by engaging the interviewee in a personalized conversation and explaining interview process and procedures. Specifically, interviewers are expected to explain their role, reason(s) for the interview, outline guidelines for an effective interview, and build rapport. The third phase of the interview (Account) aims to obtain a detailed account from the suspect. During this phase, the interviewer may also clarify and challenge the information provided by the
interviewee. Interviewees are encouraged to provide an uninterrupted account of the experienced events. However, open-ended (i.e., Tell, Explain, Describe) and focussed prompts (i.e., Who, What, When, Where, How) can also be used (Farrugia et al., 2018). The fourth phase of the PEACE model (Closure) requires the interviewer to provide an overview of the interview and allow for any adjustments of the account by the interviewee. Finally, the last stage (Evaluation) encourages interviewers to self-evaluate their performance and request feedback.

The PEACE model encourages rapport building, a relaxed atmosphere, and the use of empirically supported memory enhancement techniques (Farrugia et al., 2018; Snook et al., 2014). When confronted with uncooperativeness from suspects, interviewers are instructed to continue acting ethically by avoiding arguments and ignoring resistance (Shepherd, 2007). Moreover, a humanitarian interviewing style promotes open-mindedness and neutrality during questioning. Multiple field and experimental studies have observed benefits of employing a humanitarian interview style. In their meta-analysis, Meissner et al. (2014) found that information-gathering interviewing styles are more effective in eliciting information, and equally effective in securing confessions, when compared to accusatorial interviewing styles. For instance, a study examining 49 suspect interviews found that the use of noncoercive strategies increased disclosure of relevant information compared to coercive strategies (Alison et al., 2014). Evidently, the absence of coercive techniques reduces the risk of inadmissibility in courts of justice, and suspect’s resentment (Snook et al., 2014).

**Interviewing Practices in the Canada**

Research examining investigative interviewing practices among Canadian interviewers has shown that they generally adopted an information gathering approach, while still incorporating some strategies from accusatorial interviewing models, such as deception detection
cues (Miller et al., 2018). A study by Snook et al. (2012) analyzed 80 transcripts of suspect interviews from a Canadian Police Force and found that best practices (e.g., asking open-ended questions, engaging in active listening, avoiding opinion statements, and more) known for eliciting complete and accurate accounts were not being frequently used by interviewers. Results demonstrated that interviewers were not providing enough opportunities for suspects to talk and disclose information freely (Snook et al., 2012). Additionally, a recent critique of the Phased Interviewing Model (i.e., an interviewing model developed and used by the RCMP, Canada’s federal police force) revealed that it instructs interviewers to use tactics shown to be problematic in the scientific literature (Snook et al., 2020). For example, the use of minimization techniques and leading questions are encouraged in the Phased Interviewing Model, but as mentioned, these tactics increase the risk of false confession.

An investigator’s approach to questioning suspects can positively or negatively impact information gathering. In the next section, the offender’s perspective on interviewing practices will be explored.

**Offender’s Perspective on Interviewing Practices**

A substantial body of literature has examined how various interrogation methods influence suspect’s decision to be (un)cooperative. During investigative interviews, suspects actively engage in a complex decision-making process; better understanding their experiences contribute to the continued development of best interviewing practices. Studies examining offenders’ perspectives of interviewing practices have shown that suspects strongly dislike interviewers’ use of dominance-oriented tactics. For example, Holmberg and Christianson (2002) gathered written responses from ninety-four inmates in a Swedish prison regarding their experiences of police interviews. Their findings showed that dominance-oriented/accusatorial
style interviews (i.e., interviews characterized by confrontations, interruptions, impatience, aggression) were associated with a higher proportion of suspect denials of involvement in a crime when compared to humanitarian interviews (i.e., interviews characterized by empathy, personalized conversations, positive attitudes). Their study also found that humanitarian interviews were associated with higher proportion of admissions. When treated with respect during a humanitarian interview, inmates appeared more inclined to cooperate compared to participants experiencing anxiety during an accusatorial interview.

Additional research examining suspects’ perspectives of interrogation practices showed that appropriate interviewing increased the likelihood of cooperation with the interviewer. For instance, a study using self-reported data found 21% ($n = 45$) of detainees changed their initial intention to confess during an interrogation (Deslauriers-Varin et al., 2011). Among those who changed their intention to confess, 49% wanted to confess prior to interrogation but decided not to confess. Accordingly, 51% of those who initially did not intend to confess, eventually confessed during the interrogation. Considering these findings, the authors concluded that suspects’ decision-making process is not static, rather it can be influenced by situational factors (e.g., interview tactics, methods, techniques). Although data on the relationship between interviewing strategies and confessions were not collected, the authors suggested that interrogation practices and interviewer attitudes may negatively influence suspects’ decisions to confess (Deslauriers-Varin et al., 2011).

A more recent study examining inmates experienced with police interviews showed that their decision whether to confess was largely influenced by the investigators (Deslauriers-Varin, 2022). Specifically, inmates reported that perceived mistrust of police, pressure to confess, and fear of investigators’ reactions were salient factors in their decision to (not) confess. The use of
interviewing strategies known to increase rapport (e.g., demonstrating empathy, responding to suspects’ needs) may decrease suspects’ distrust and distress, thus positively impacting information provision. The likelihood of cooperation appeared to increase when interviewers fostered a climate of trust. Similarly, studies using suspects’ self-reported data also demonstrated that cooperation was greatest when interviewers used a humanitarian approach when interviewing, and when suspects had little experience with the justice system (Goodman-Delahunty & Martschuk, 2020; Snook et al., 2015). The convergence of evidence regarding suspects’ viewpoints has suggested that an interviewer’s behaviour during an interview can significantly influence a suspect’s decision to cooperate.

**Suspect Interviewing: A Dynamic Process**

Research examining suspect interviews has largely ignored the dynamic nature of interviewer-interviewee behaviours, and the interaction of specific factors that influence interview outcome. However, understanding how complex and dynamic human interactions unfold during investigative interviews requires studying the active process by which methods employed change within an interview and how they influence suspect responses over time (Kelly et al., 2016). Identifying key moments during an interview that subsequently change the pattern of suspect responses can potentially inform the likelihood of cooperation during investigative interviews. Thus, considering how different elements (i.e., techniques, tactics, procedures, methods) of an interview build upon each other to successfully gather information from suspects is of theoretical and practical value.

The field of negotiation may offer some insight into behavioural changes during investigative interviews. For example, the concept of *turning points* has been used widely in the negotiation literature to gain insight into key moments when the course of the negotiation
changes. Specifically, a turning point refers to “a clear and self-evident change from earlier events or patterns in the form of an impactful decision taken by one or all parties” (Druckman & Olekalns, 2013, p.334). In the fields of crisis negotiation and investigative interviewing, it is of practical value to understand the circumstances surrounding decisive moments that alter the course of the interaction. The evaluation of these dynamic changes possibly allows for the identification of events that precipitated them.

**Turning Points**

To better understand why and how suspects may shift their behaviour (i.e., become cooperative/uncooperative) throughout an interview, it is important to consider the evolution of the interviewer-interviewee interaction that leads to key moments of information disclosure. A body of literature from the field of negotiation – specifically, turning points – can potentially inform the shifts in cooperation during investigative interviews.

In the late 1980s, a seminal study analyzed bilateral negotiations between Spain and the United States over military base rights (Druckman, 1986). The study examined the interaction dynamics that took place inside negotiations, with specific attention to each side’s moves and statements. Ultimately, the aim was to identify the process(es) by which turning points occurred. The methodology consisted of examining patterns of “soft” (e.g., accommodation, promise) and “hard” (e.g., retraction, threat) verbal statements between both parties. Druckman (1986) also created an index for crises (i.e., an impasse characterized by recess or a cease of proceedings), turning points (i.e., recovery from a crisis that resumes collaboration), or periods of stability (i.e., neither a crisis nor a turning point). Quantitative analysis revealed that larger differences between the two parties in “hard” statements increased the likelihood of a period of crisis. Specifically, prior to the onset of a crisis, one party was characterized as “soft” while the other
party was “hard”. During the period of crisis itself, the “soft” party would increase its level of “hard” behaviour to match their counterpart. From these results, Druckman (1986) noted that parties would respond either in a synchronous (e.g., tit-for-tat exchange) or asynchronous (e.g., initiation countered with an accusation) matter. A lack of synchronization between two negotiating parties may cause impasses. This primary analysis revealed that key moments in negotiations may share some features. From that point onwards, the topic of turning points surfaced in the literature and researchers began to question which changes influenced the direction of a negotiation toward agreements or impasses (Druckman, 2017).

With the intention of developing a turning points framework, Druckman (2001) analysed 34 international negotiations, which included security, trade, and political issues. Accordingly, Druckman (2001) classified negotiations into three distinct parts. First, the framework identified precipitants, which are defined as external, substantive, or procedural events or behaviours that trigger a change in process. External precipitants can refer to third-party interventions (e.g., a shift of policy), while substantive precipitants can refer to the introduction of new concepts or ideas to the negotiation (e.g., breaking down discussion into several topics), and procedural precipitants can represent changes to the structure or format of the conversation (e.g., inviting experts into deliberations). Second, the framework introduced process departures, which refer to turning points. Process departures can be abrupt changes to an interaction (e.g., an unexpected agreement), or non-abrupt changes (e.g., predictable responses to new proposals). Specifically, departures can be identified by four common features: (1) there is a change from earlier events or patterns, (2) there is a change in the relationship between parties, (3) changes are self-evident and agreement between observers is easily reached, (4) an action leads to consequences for both parties (Druckman, 2004). Lastly, the framework identified immediate and later consequences,
such as achievement of agreements or reaching impasses. The initial step of Druckman’s framework requires the identification of departures, followed by precipitants that happened before these departures, and finally the consequences of the departures (Druckman, 2001). In other words, the turning points analysis consists of coding for causes (precipitants) and effects (consequences) of departures.

Druckman’s (2001) framework contributed to the methodology of numerous studies. In the following years, studies examined the psychological and social processes that characterize turning points in negotiation contexts. For instance, two experimental studies looking at the influence of social perceptions on turning points in negotiations found that social cues of trust and power filter interpretations and influence outcomes (Druckman et al., 2009). The findings revealed that a positive social climate, characterized by high trustworthiness and low power, resulted in more movement toward agreement and frequent cooperative turning points. On the other hand, fewer cooperative turning points were seen in a negative negotiation climate, which was characterized by low trustworthiness and high power (Druckman et al., 2009). Hence, the researchers concluded that social climates in negotiations moderate precipitants and influence negotiation outcomes. Apart from laboratory simulations, the three-part turning points analysis (precipitants, departures, consequences) has been successfully used in studies looking at various negotiation cases. For example, the framework was used in studies of cases of international (Chasek, 1997) and domestic (Hall, 2008; 2014) environmental negotiations, and nuclear arms control (Druckman et al., 1991).

More recently, Griessmair and Gettinger (2020) analyzed a sample of 30 negotiation settlement dyads (i.e., reached an agreement) and 30 impasse dyads (i.e., did not reach an agreement) for turning points profiles using Druckman’s (2001) framework. Their work
extended the existing framework by considering social signals (i.e., changes in the emotional climate of the negotiation) as precipitants preceding departures. Moreover, the methodology included an additional analysis of action-reaction sequences that introduce and conclude turning points (e.g., how Negotiator A responds to the action of Negotiator B and vice versa). The researchers concluded that verbalizing negative goal-oriented emotions may contribute to creating turning points when they are followed by positive other-oriented emotions (e.g., “I’m confident that if we work together on the problem, we will be able to reach an agreement that is beneficial for both of us.”; Griessmair & Gettinger, 2020). Overall, the turning points framework has provided knowledge on how negotiations processes unfold and has provided insightful advice for negotiators.

The concept of turning points has also been a useful for studies outside the field of negotiation. For example, Jameson et al. (2014) successfully applied Druckman’s (2001) analysis to mediation transcripts to identify turning points. Specifically, Jameson et al. (2014) used speaking turns (i.e., entire utterance of each speaker) as units of analysis to examine conflict transformation in mediation. They identified departures as key speaking turns that were followed by evident changes in the interaction. Because researchers were only interested in positive departures between disputants, they coded departures as utterances that caused evident cooperation. Accordingly, coded transcripts were compared among three researchers to ensure validity and consensus regarding identification of departures. Once departures were identified, researchers coded three speaking turns preceding each departure to identify whether utterances were substantive (i.e., referring to the conflict itself) or procedural (i.e., discourse relating to next topic) precipitants. Lastly, outcome was coded as agreement only, or transformation from adversarial to cooperative. Their results demonstrated that reciprocity (i.e., the quality of an act,
process, or relationship in which one person receives benefits from another and, in return, provides an equivalent benefit; APA Dictionary of Psychology, 2022) enhanced the likelihood of agreement, and earlier statements of understanding led to greater cooperation. Moreover, departures leading to cooperation were characterised by acknowledgement of new information, recognition of the other party’s experience, receipt of recognition, or explicit verbalization of emotion (Jameson et al., 2014).

**Turning Points Within Investigative Interviews**

In investigative interviews, little is known about what leads to a change in the suspect’s responses over time (Kelly et al., 2016). Comparable to crisis negotiations, it is important to consider that an investigative interview is a dynamic process between two parties. Changes in the interaction can impact cooperation and thus, information gathering. Although the level of intensity and urgency can differ between crisis negotiations and interrogations, it can be argued that both share several features. In both crisis negotiations and investigative interviews, it can be insightful to understand key moments that alter the course of the interaction. The evaluation of these shifts possibly allows for the identification of events that precipitated them. In other words, turning points in investigative interviews refer to changes in suspect’s responses that shift toward cooperation, or conversely, shift toward resistance (Goodman-Delahunty & Martschuk, 2020).

Only a few studies examined the dynamic process and interactions that influences cooperation between the interviewer and the interviewee. Without directly examining turning points within a theoretical framework, researchers have attempted to determine the relationship between certain behaviours, strategies, and interview outcomes. Bull and Soukara (2010) conducted four studies to identify which tactics and skills are used during real-world suspect interviews. In their third study, authors analyzed 50 audiotaped suspect interviews of various
alleged offenses and found some positive relationships between interviewer skills (e.g., rapport building, open-mindedness, flexibility) and suspect behaviours (e.g., cooperation, responsiveness to interviewer). Specifically, each interview was coded on a 5-point Likert scale to evaluate the presence of six different interviewer skills, seventeen tactics, and four suspect behaviours. Their results demonstrated that interviewers’ skills of communication, open-mindedness, flexibility, rapport building, and responsiveness to the suspect were positively correlated to suspects’ responsiveness to the interviewer. Moreover, results showed a significant positive correlation between suspect cooperation and interviewer’s open-mindedness, flexibility, rapport building, and responsiveness to the suspect. Together, these findings support that interviewer behaviours are related to suspect behaviours.

In their fourth study, Bull & Soukara (2010) evaluated the timing of various tactics used throughout an interview. The researchers examined whether the timing of different tactics was related to a change within interviews from denial to confession. With a sample of 40 audio-recorded interviews with confessions, the researchers divided each recording into 5-minute segments. Then, coders monitored which tactics were used by interviewers in each segment while also noting timing of confessions. This process identified specific interviewing strategies used minutes prior to the confession. Their findings suggested that suspect’s responses and decision to confess were influenced by disclosure of evidence, open questions, and repetitive questions; however, it may be that these three tactics set the scene for later ones to be successful at encouraging suspects to confess.

Similarly, a study by Kelly et al. (2016) involved the coding of video-recorded suspect interviews to examine the use of interrogation methods on suspect’s cooperation over time. The researchers coded the relationship between several interrogation methods, using a sample of 29
recordings of suspect interrogations in 5-minute segments, on suspect cooperation. Precisely, four domains of investigative interviewing methods were examined: rapport and relationship building, emotion provocation, presentation of evidence, and confrontation/competition. A measure of the suspect’s responses along two dimensions, cooperative and resistant, was also examined. Cooperativeness was categorized into nonincriminating information, self-incriminating information, or alibis or reasons justifying why they could not have committed the crime. Resistance was categorized into denials, claims of poor memory or lack of knowledge, partial silence, withdrawal of earlier admissions, or references to *Miranda* rights. This interactional approach between methods and cooperativeness in a timely manner goes beyond the simple examination of outcomes. In fact, this analysis allowed the observation of how certain methods in investigative interviews interact with suspect’s responses throughout the interview. The most interesting finding was that confrontation/competition was associated with resistant responses, and undermined cooperation for 15 minutes after the use of accusatorial techniques. Moreover, the analysis showed suspect cooperation was positively influenced by rapport and relationship building. Suspects cooperation was also negatively influenced by presentation of evidence. Regarding emotion provocation, results appeared to demonstrate that its efficacy on suspect cooperation is most likely dependant on when it is used during the interview. In cases where suspects confessed, the method of emotion provocation was largely observed at the beginning of the interview and gradually decreased afterwards (Kelly et al., 2016).

In a similar manner to the concept of turning points, Feld (2012) aimed to identify various interrogation techniques, how suspects responded to them, and the outcome of the interview. Feld categorized interrogation techniques into either minimization or maximization. With a sample of 295 interviews transcriptions of juvenile suspects, the analyses examined the
types and frequency of maximization tactics (e.g., confront with evidence, accuse of lying, confrontational tactics); the same analysis was conducted for minimization tactics (e.g., neutralizing guilt, appealing to self-interest, expressing empathy, appealing to honor). Results of this primary analysis demonstrated that police officers used at least one maximization tactic in nearly 70% of cases. Moreover, results indicated that minimization tactics were used much less than maximization tactics. For instance, techniques of neutralization were observed in 15% of cases. Once the primary analysis was gathered, Feld examined juveniles’ response to tactics mentioned above as well as the outcome of the interrogation. More precisely, the suspects’ overall attitudes were coded as cooperative or resistant, and outcomes as confessions, admissions, or denials. Accordingly, findings demonstrated that nearly 80% were cooperative and 20% were resistant. Among the resistant suspects, only 9% ended up confessing. Moreover, the findings showed that only 12% of suspects denied involvement. Feld suggested that the low number of resistant suspects and deniers means that most juveniles are effectively influenced by the pressures of interrogation. Alternatively, one may argue that suspects most often decide whether they will resist or cooperate prior to their interrogation.

Recently, Kelly & Valencia (2021) examined the interaction between questions and interview techniques on suspect cooperativeness. With a sample of 15 recorded suspect interviews from an American police agency, the researchers examined the relationship between question type and interview techniques, as well as the relationship between question type and cooperation. The methodology of this study involved analyzing the question types, interviewing techniques, and suspect responses within 5-minute intervals. This coding procedure was similar to that used in other studies that attempted to capture dynamic shifts in suspect interviews (Bull & Soukara, 2010; Kelly et al., 2016). To allow further statistical analysis of question type, Kelly
& Valencia (2021) developed a single variable of Appropriate Question Differential (AQD) to capture the difference between appropriate and inappropriate questions. The coding was also conducted for four domains of interrogation taxonomy being rapport and relationship-building, emotion provocation, confrontation/competition, and presentation of evidence. Finally, the study coded cooperation on a single five-point scale from strong resistance to strong cooperation. When observing relationships between these variables, results indicated that appropriate questions were positively related to higher rapport-building techniques. Furthermore, results showed that appropriate questions were positively related to higher cooperation. It appeared that appropriate questions on their own are not sufficient to increase information gathering. When interpreting these findings, Kelly and Valencia concluded that rapport-based techniques may increase suspect cooperativeness, while appropriate questions result in better information gathering. This study demonstrated the existence of an interactive sequence between interview methods, suspects responses and cooperation. However, another cluster, other than question type or interview methods, might be influencing suspect cooperation. As seen in the aforementioned study by Bull and Soukara (2010), there was a significant positive correlation between suspect cooperation and interviewer’s skills of open-mindedness, flexibility, rapport building, and responsiveness to suspect. Therefore, it is possible that a third cluster such as interviewer skills is associated with question type and/or methods.

A significant field study by Alison et al. (2013) used a novel coding framework to examine the influence of rapport-based techniques on information provision with 29 suspected terrorists. Researchers' in-depth analysis of interviews with convicted terrorists found that interviewer’s motivational interviewing (see Tedeschini & Jung, 2018 for more information on motivational interviewing) was positively related to adaptive interpersonal responses from
suspects leading to greater information provision. Specifically, motivational interviewing strategies of autonomy, acceptance, adaptation, empathy, and evocation, were found to contribute to rapport building throughout interrogations. However, interviewer’s maladaptive interpersonal behaviour led to increased maladaptive responses from suspects and reduced information provision. For example, interviewer’s maladaptive comments expressing sarcasm or attack often led to suspect resistance (e.g., “no comment” or reinforcement of previous statements). Such findings highly contribute to interrogation literature as they shed light on the relationship between the interpersonal interviewer-interviewee interaction and information provision.

To date, only a single study applied Druckman’s (2001) framework of turning points to identify what precedes or triggers a turning point within interviews (Goodman-Delahunty & Martschuk, 2020). Because the framework of turning points is a generalizable model, researchers were able to apply parallel steps in the context of suspect interrogations. More precisely, this study questioned a sample of 34 partitioners and a sample of 30 high-value detainees about their recall of an interview that included a dynamic shift at one point. By using Druckman’s (2001) model, Goodman-Delahunty and Martshuck identified factors triggering or leading to a change (precipitants), the reactions that follow these precipitants (departures), and the consequences on the direction of the interrogation. Specifically, the turning points analysis allowed evaluated interviewers’ behaviours and strategies that triggered changes in the responses of the suspect causing cooperation or resistance. The results of the above research showed that noncoercive strategies such as breaks, comfort, use of evidence and memory facilitation were associated with more positive turning points, increased cooperation, and increased reliable information. Moreover, Goodman-Delahunty and Martshuck’s results demonstrated that coercive techniques
such as physical assault, threat, intimidation, and bribery increased resistance in suspects, silence, or disclosure of false information. In some cases, circumstances such as coercion, deception, and intimidation led to false admissions. By using the concept of turning points, not only did this study pinpoint key moments in high-stakes interviews that were followed by a change in the dynamic of the interaction, but it also identified some behaviours that are responsible for those changes. It should be noted, however, that the study by Goodman-Delahunty & Martschuk used data from recalled memories of experienced investigative interviews. When relying on memory retrieval of past events, it is important to consider that memory is reconstructive and does not perfectly reflect past experiences (Loftus, 2005). Hence, it becomes highly probable that some important features of the interview such as strategies or outcomes are forgotten or misremembered. To gain greater knowledge about actual methods used by interrogators, it is important to rely on the analysis of video interrogations, audio recordings, and/or transcripts.

**Language Style Matching**

To understand interpersonal dynamic shifts between suspects and interviewers, it is also important to evaluate what words and language can tell us about these unique interactions. Analyses of interaction patterns can contribute to understanding when, why, and how turning points occur. Words and language are the medium by which human beings communicate various internal states such as emotions and thoughts (Tausczik & Pennebaker, 2010). Much can be understood about people’s experience of the world by analyzing how they verbally express themselves and how they influence each other (Tausczik & Pennebaker, 2010). Research in social psychology has demonstrated that humans tend to synchronize with each other in many ways (Ireland & Pennebaker, 2010). Specifically, two interacting individuals display mimicry
and coordination on both verbal and nonverbal behaviours. Moreover, verbal imitation processes can operate on an unconscious level to facilitate cognitive coordination (Ireland & Pennebaker, 2010). The communication accommodation theory (CAT) offers a theoretical explanation of how people adapt their verbal and nonverbal cues to match (convergence) or differ (divergence) from their conversational counterpart (Dragojevic et al., 2016; Giles & Coupland, 1991). Verbal and nonverbal adjustments can refer to factors such as tone changes, gestures, choice of articles, and prevalence of adjectives. Therefore, communication dynamics can change depending on individuals’ desire to adjust the social distance between them. Put otherwise, verbal synchronization allows people to manage the level of association with their conversational partner. Researchers found that fostering a conversational climate of convergence increased trust, rapport, and liking (Curhan & Pentland, 2007; Dragojevic et al., 2016).

Similarly, the interactive alignment model (IAM) states that basic forms of imitation are unconscious and encourage successful conversational outcomes (Garrod & Pickering, 2004). Alignment between individuals occurs when syntax and word choices become similar over time. The interactive alignment model posits that conversational partners coordinate their linguistic behaviors to align their linguistic representations on a phonological, syntactic, and/or semantic level. Hence, one can argue that higher occurrences of alignment are related to increased mutual understanding and collaboration. Studies demonstrated that greater alignment in language styles between individuals results in increased cooperation (Chartrand & Lakin, 2013; Duffy & Chartrand, 2015; Richardson et al., 2019).

To quantify synchronization in language use, researchers have used the measure of Language Style Matching (LSM; Ireland et al., 2010; 2011; Richardson et al., 2019). Initially introduced in the field of social psychology (Niederhoffer & Pennebaker, 2002), LSM measures
the degree to which two individuals are synchronizing their use of function words. Specifically, LSM codes for nine function word categories such as articles, personal pronouns, and prepositions (Pennebaker, 2011). By analyzing style rather than content of chosen words, LSM captures interpersonal alignment across different psychological phenomena (Ireland et al., 2011). Style words play a key role in social cognition because they reflect how people communicate (Ireland et al., 2010). For instance, to understand the sentence “I will meet you there soon” an individual would need to know who “I” and “you” refer to, and the location of “there” (Tausczik & Pennebaker, 2010); hence, this sentence assumes that the speaker and the listener have access to the same knowledge of these style words (Chung & Pennebaker, 2007).

To measure LSM in pairs, Ireland and Pennebaker (2010) developed a metric that calculates a weighted difference score for each function word category. To obtain these new scores, the following formula is used: 

$$LSM_{\text{category}} = 1 - \frac{|\text{category}_1 - \text{category}_2|}{\text{category}_1 + \text{category}_2 + .0001}$$

where category_1 represents the percentage of the category of interest in the first text, and category_2 represents the percentage of the category of interest in the second text file. The value of .0001 added to the denominator accounts for the possibility of zero percentage frequency in a word category for both text files. Accordingly, a single LSM score for dyads is obtained once all nine function word categories are averaged.

Studies examining linguistic synchrony between individuals have observed important associations with cognitive and behavioural outcomes. For example, researchers have argued that individuals who share language style are also likely to share similar views of the situation and potential solutions (Nidderhoffer & Pennebaker, 2002). Moreover, higher levels of verbal mimicry were found to promote understanding between two individuals (Gonzales et al., 2010). A notable body of research has used the measure of LSM to shed light on cognitive and
behavioural outcomes in various fields such as relationships (Ireland et al., 2011; Rains, 2016), group cohesion (Gonzales et al., 2010; Schwanda et al., 2011), power dynamics (Muir et al., 2017; Richardson et al., 2018), psychotherapy (Borelli et al., 2019; Aafjes-van Doorn et al., 2020), and cooperation (Taylor & Thomas, 2008; Rogan, 2011; Muir et al., 2020; Richardson et al., 2014, Richardson & Nash, 2020). The examination of the relationship between linguistic synchrony and cooperation has provided significant insight into complex social interactions (e.g., hostage negotiations, suicidal crisis negotiations, interrogations).

Research in crisis negotiation have previously explored relationships between language style matching and negotiation outcomes. In their study, Taylor & Thomas (2008) aimed to investigate how language shapes conflict dynamics. Taylor and Thomas found a positive relationship between successful outcomes and high levels of LSM. Specifically, their findings demonstrated that particular words and word patterns were associated with positive outcomes. Successful negotiations occurred when negotiators matched hostage taker on word count, sentence organization, and verb tense. Moreover, a focus on the present and on alternatives, and a reciprocation of positive affect was observed in transcripts of successful negotiations. Conversely, negotiators use of negations, past tense, emphasis on discrepancy, and use of first-person singular statements were observed in transcripts of unsuccessful negotiations. These findings are practically significant as they can be integrated in negotiation strategies for best practice.

In the field of investigative interviewing, little is known about the relationship between communication dynamics and cooperation. However, insight into linguistic style matching in negotiation interactions can be relevant to other forensic settings. Similarly, to language analysis in negotiation research, LSM has been identified as a key linguistic measure of synchrony.
between interviewers and interviewees. Previous studies highlight the importance of interpersonal synchrony in investigative interviewing (Alison et al., 2013; Richardson et al., 2014; Walsh & Bull, 2012). Nonetheless, only a few studies explicitly explored the relationship between verbal interaction patterns and suspect cooperation. A study by Richardson et al. (2014) used a sample of sixty-four suspect interrogations to evaluate language style matching for coordination of interaction. Researchers used the Language Inquiry and Word Count (LIWC; Gonzales et al., 2010; Ireland & Pennebaker, 2010; Tausczik & Pennebaker, 2007) software, which splits the text into linguistic categories (e.g., function words, nouns, verbs, and more) and quantifies their frequency (e.g., 3.75% of all words used in a text are auxiliary verbs). Accordingly, researchers produced scores for linguistic categories and conducted a supplementary transformation of results to create a single interrogator-suspect matching score. Their fine-grained analysis of LSM revealed that coordination of language use was related to interrogation outcome. Specifically, Richardson et al.’s findings demonstrated confessions were related to higher scores of suspect matching interrogator’s language style compared to cases of non-confession. In cases of confessors, language style matching occurred through auxiliary verbs, prepositions and quantifies, and in terms of personal pronoun use. Thus, the authors argued that increased linguistic matching indicates that both parties are reaching a common view of the offence story.

Studying language coordination in the context of suspect interrogation may increase understanding of processes preceding turning points. Overall, greater knowledge of turning points and linguistic synchrony within investigative interviewing can contribute to better-informed guidelines of behaviours to adopt or to avoid in human interaction.
The Current Study

The current exploratory study builds on existing research on suspect cooperation by using various approaches to examine the concept of turning points in investigative interviews. The first goal of the study is to evaluate whether it is possible to objectively identify turning points and behaviours associated with increased or decreased cooperation in transcripts of actual suspect interviews. The second goal is to assess whether question types are related to turning points, while the third goal is to explore whether rapport is related to turning points. Finally, the fourth goal is to examine the association between LSM and turning points. Because the present study is the first to evaluate turning points in transcripts of suspect interviews, we make no predictions as to the outcome of our analyses for the first research goal. However, previous studies examining suspect cooperation have shown that appropriate questions (Kelly & Valencia, 2021) and rapport (Alison et al., 2013; Kelly & Valencia, 2021; Walsh & Bull, 2012) were related to greater cooperation. Therefore, it is reasonable to argue that appropriate questions and rapport may also be related to positive turning points (i.e., increased cooperation).

The first hypothesis of the present study is that appropriate questions would be positively associated to positive turning points. Conversely, it was hypothesized that appropriate questions would be negatively associated with negative turning points. Regarding rapport, it was hypothesized that use of rapport building strategies would also be positively associated with positive turning points. Next, it was hypothesized that rapport would be negatively associated with negative turning points. Finally, consistent with prior research looking at the association between LSM and cooperation (Thomas & Taylor, 2008; Richardson et al., 2014), it was hypothesized that overall LSM scores were positively associated with positive turning points and negatively associated with negative turning points. To achieve these goals, a coding guide of
question types and rapport was developed to analyze turning points based on Druckman’s (2001; 2004) framework. Language Style Matching was examined via BUTTER software (i.e., Basic Unit-Transposable Text Experimentation Resource; Boyd, 2019). Ethical approval was received from Carleton University’s Institutional Review Board (#118964) prior to conducting the study.

Methodology

Sample

The data for present study consisted of a sample of 30 transcripts of adult suspect interviews obtained via a UK police force. Two transcripts were used as practice/pilot coding for the two coders; all analyses are therefore based on the remaining 28 transcripts. The mean length of the interviews was 52 minutes and 14 seconds ($SD = 24$ minutes 20 seconds). Two-thirds of the suspects in the sample ($n = 19$) were questioned for a sexual offence against adults, and a third of the sample ($n = 9$) were questioned for a sexual offence against children. All suspects were male. Due to inconsistent availability of data regarding the age of the suspects in the transcripts, this information is not reported here. Regarding interview outcome (i.e., confession or denial), the majority ($n = 24$) of the sample did not confess, while 4 suspects confessed.

Procedure

Identifying Turning Points

To identify turning points within the suspect interviews, the study builds upon Druckman’s (2001; 2004) analytical framework of shared features of departures. Specifically, departures can be located by four common features: (1) there is a change from earlier events or patterns, (2) there is a change in the relationship between parties, (3) changes are self-evident and agreement between observers is easily reached, (4) an action leads to consequences for both parties (Druckman, 2004). Accordingly, the study will identify turning points and work
backwards to identify precipitants. Similar to definitions implemented by previous studies, the present study will use the operationalised definition of turning points incorporated in the Forensic Interview Trace (2022) software:

Turning points refer to events, behaviours, or actions that change the direction of an interaction toward, or away from, achieving the interviewer’s goals. They may be associated with positive consequences (e.g., a shift in interviewee behaviour from silence to talking) or negative consequences (e.g., an initially cooperative interviewee becoming uncooperative).

The two-step analysis began with (1) locating key moments in the interview that change the direction of an interaction toward, or away from, information disclosure, and (2) coding whether the turning point is positive (i.e., suspect shifts from uncooperative to cooperative) or negative (i.e., suspect shifts from cooperative to uncooperative). Similar to coding guides developed in prior research that captured suspect’s cooperation irrespective of the incriminating nature of the information (Kelly et al., 2016), the present study coded cooperativeness on a four-level scale. Precisely, suspect utterances were coded as either fully cooperative (i.e., suspect provides a relevant response to the specific question asked by the interviewer), reasonably cooperative (i.e., suspect provides a somewhat relevant response to the specific question asked by the interviewer), minimally cooperative (i.e., suspect does not answer the specific question asked by the interviewer), or non-cooperative (i.e., suspect does not answer the question at all, does not engage with the interviewer, hostile behaviour). Accordingly, turning points represented instances when a suspect shifted from one cooperation level to another. Positive turning points represented instances when a suspect shifted toward increased cooperation (e.g., from minimally cooperative to reasonably cooperative, while negative turning points represented instances when
a suspect shifted toward decreased cooperation (e.g., from minimally cooperative to non-cooperative).

A pilot testing of this coding scheme was conducted on two interview transcripts \( n = 2 \), which allowed the coders to address any discrepancies. Next, four transcripts \( n = 4 \) were used for inter-rater reliability analyses. The reliability measure used was Cohen’s Kappa (Cohen, 1960). Following Landis and Koch’s (1977) guidelines, the coding scheme for cooperation showed a substantial level of agreement between coders (.67).

**Identifying Precipitants**

In line with Druckman’s (2001; 2004) framework, I identified precipitants (i.e., interviewer’s verbal behaviours) preceding turning points. Precipitants in investigative interviewing are comprised of interrogation techniques and question types that are employed by the interviewer in suspect interrogations. Novel methods such as the 5-minute interval segments (Bull & Soukara, 2010; Kelly et al., 2016; Kelly & Valencia, 2021) have been successfully used to analyze the influence of different interviewing methods on suspect cooperation during interviews. However, the sample of the current study is comprised of transcripts without timestamps, therefore preventing me from employing these novel methods.

As mentioned, an investigative interview is a highly dynamic social interaction that is influenced by many competing factors such as interview style, interviewer’s skills, tactics, and strategies. To capture these factors, question types were coded as they frequently appear in other studies (e.g., Griffiths & Milne, 2006; Kelly & Valencia, 2021; Snook et al., 2012). However, four categories were added for the current study (i.e., summary statements, appropriate responses to suspect, inappropriate responses to suspect, and evidence presentation/confrontation) to
adequately capture all interviewers’ utterances within the sample. Thus, a total of 13 question types were coded in the present study (see Table 1).

Table 1

**Question Type Categories and Definition**

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>These questions elicit responses from interviewees based on their own memory recall. They are usually formulated with words such as &quot;tell,&quot; &quot;explain,&quot; or &quot;describe,&quot; and allow for a broad spectrum of answers. An instance of such a question would be &quot;Describe what you did yesterday.&quot;</td>
</tr>
<tr>
<td>Probing</td>
<td>These questions are designed to prompt more focused answers, and they rely on cues such as specific events or experiences. They can start with “who,” “what,” “why,” “where,” “when,” or “how.” For example, “Who was at the party with you?”</td>
</tr>
<tr>
<td>Closed – yes/no</td>
<td>Questions that are typically answered with a “yes” or a “no”. For example, “Could you see her face?”</td>
</tr>
<tr>
<td>Leading</td>
<td>This type of question is suggestive as it contains the desired answer within the question. “You were desperate, right?” would be an example of a leading question.</td>
</tr>
<tr>
<td>Forced choice</td>
<td>This type of question forces the interviewee to choose between limited options. An example would be: “Did you take a taxi or the bus?”</td>
</tr>
<tr>
<td>Opinions/statements</td>
<td>This type of utterance involves posing an opinion or statements to an interviewee. For example, “I think you know that was wrong”</td>
</tr>
<tr>
<td>Multiple</td>
<td>This question type involves the interviewer posing multiple questions at once before allowing the interviewee to respond. An example of this would be, “How did you get there? What did you do inside? When did you first decide to steal the car?”</td>
</tr>
<tr>
<td>Re-asked</td>
<td>This question type involves the interviewer asking any question that was asked earlier in the interview.</td>
</tr>
<tr>
<td>Clarification</td>
<td>These question types involve the interviewer repeating what the interviewee has said (right before) but forming it as a question. An example of a clarification question would be as follows: “Interviewee: John said he went to a movie.”</td>
</tr>
<tr>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Summary</td>
<td>These statements involve the interviewer summarising whatever the suspect discussed previously. For example, “So you said that after your conversation with Josh, you left Alice’s house and did not call anyone afterwards.”</td>
</tr>
<tr>
<td>Response - appropriate</td>
<td>The interviewer provides an appropriate answer to a question asked by the suspect. “Suspect: What do you mean? Interviewer: I mean how do you define sex?”</td>
</tr>
<tr>
<td>Response - inappropriate</td>
<td>The interviewer provides an inappropriate response to a question asked by the suspect. “Suspect: What do you mean by rape kit? Interviewer: You should know what a rape kit is.”</td>
</tr>
<tr>
<td>Evidence presentation/confrontation</td>
<td>The interviewer presents or confronts the suspect with evidence. “Interviewer: We have three witnesses that saw you follow her out of the bar into the alley.”</td>
</tr>
</tbody>
</table>

Pilot testing of the question coding scheme on two transcripts \((n = 2)\) allowed the coders to assess the reliability of the codes and address any issues or discrepancies. Next, four transcripts were coded by two researchers to assess inter-rater reliability via Cohen’s Kappa \((\text{Cohen}, 1960)\). Following Landis and Koch’s \((1977)\) guidelines, the coding scheme for question types showed a substantial level of agreement between the two coders \( (\text{.76}).\)

Consistent with prior studies \((\text{Griffiths & Milne, 2006; Kelly & Valencia, 2021})\), I categorized questions into two overarching categories: appropriate and inappropriate question types. Appropriate question types consisted of open, probing, closed, clarification, summary statements, and appropriate responses to suspects’ questions. In contrast, inappropriate question types included leading, forced, opinions/statements, multiple, re-asked, and inappropriate responses to suspects’ questions. Evidence presentation/confrontation was left as a stand-alone category of interviewer utterances, while appropriate and inappropriate categories were
calculated by summing the individual question types. This dichotomization of question types allowed me to compute the Appropriate Question Differential (AQD; Kelly & Valencia, 2021) for each interview transcript. The following formula was used to calculate AQD:

\[
\frac{(\text{Appropriate Questions} - \text{Inappropriate Questions})}{(\text{Appropriate questions} + \text{Inappropriate Questions})}
\]

The overall AQD score, ranging from -1 to +1, indicates the relative rate of appropriate to inappropriate question. A value of -1 is interpreted as all questions were inappropriate, while +1 is interpreted as all questions were appropriate.

Next, rapport was coded based on Tickle-Degnen and Rosenthal’s (1990) model of rapport behaviour operationalized by Collins and Carthy (2019). Similar to their study design, the present study used two rapport components of positivity (i.e., mutual focus and interest for each other) and mutual attention (i.e., friendly nature of the interaction; see Table 2). The third component, coordination, was excluded from the coding guide as the interviewer-interviewee coordination was captured by the Language Style Matching analysis.
Table 2

*Rapport Components, Indicators, and Examples*

<table>
<thead>
<tr>
<th>Component</th>
<th>Indicator description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positivity</td>
<td>Empathy</td>
<td>“I can’t imagine how difficult that must have been for you.”</td>
</tr>
<tr>
<td></td>
<td>Use of suspect’s name</td>
<td>“What time did you leave, Jeff?”</td>
</tr>
<tr>
<td>Politeness</td>
<td></td>
<td>“Thank you for answering.”</td>
</tr>
<tr>
<td>Humour</td>
<td></td>
<td>“As you can see by my looks, I am not much of a sports guy (laughs).”</td>
</tr>
<tr>
<td>Friendliness</td>
<td></td>
<td>“How are you feeling today?”</td>
</tr>
<tr>
<td>Reassurance</td>
<td></td>
<td>“I know it can be difficult to put in words, but I have worked here for years, nothing can really shock me”</td>
</tr>
<tr>
<td>Attention</td>
<td>Facilitators</td>
<td>“Mmm.”</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td></td>
<td>“Okay” or “yeah.”</td>
</tr>
<tr>
<td>Paraphrasing</td>
<td></td>
<td>“So you came home around 10pm…” (repeating back what the suspect has said).</td>
</tr>
<tr>
<td></td>
<td>Identifying of emotions</td>
<td>“I see that you are sad.”</td>
</tr>
</tbody>
</table>

*Note.* Table adapted from Collins and Carthy (2019)

We first conducted a pilot testing of the rapport coding scheme on two transcripts \((n = 2)\) to address any issues or discrepancies. Then, four transcripts were coded by two researchers to assess inter-rater reliability via Cohen’s Kappa (Cohen, 1960). Following Landis and Koch’s (1977) guidelines, the coding scheme for rapport showed an excellent level of agreement between the two coders (.82).

**Interpreting Consequences**

When applying Druckman’s (2001) framework of turning points to investigative interviews, consequences represented the outcome of the interview. Specifically, the study coded whether the suspect confessed to the crime or denied it by the end of the interview.
Examining Language Style Matching

In line with previous research looking at the association of language matching and cooperation (Richardson et al., 2014; Taylor & Thomas, 2008), we examined linguistic synchrony using the measure of Language Style Matching. To best capture language use and communication dynamics for each suspect interview, the analysis was be conducted via the BUTTER software (i.e., Basic Unit-Transposable Text Experimentation Resource; Boyd, 2019). BUTTER is a free text analysis program created to combine different methods of text analysis used in social sciences (Boyd, 2019). Of interest to the current study, BUTTER offers a platform to conduct dictionary-based content coding. Specifically, BUTTER text analysis calculates pairwise Language Style Matching scores between each person within a text file. First, the software uses a plug-in called “conversational splitter” to separate utterances by speakers. Accordingly, it conducts a word-by-word analysis of function word categories. Finally, the software produces an output of word count per person and LSM scores for both. The present study will used BUTTER text analysis software to look at LSM scores between interviewer and interviewee across the duration of an interview. Accordingly, the output provided overall LSM scores for each transcript of our sample.

Data Analysis

To examine the prevalence of question types, rapport, and turnings points, descriptive analyses were conducted. Next, bivariate correlations were computed to examine (1) the relationships between question types and both positive and negative turning points, (2) the relationships between the two aspects of rapport (i.e., positivity and attention) and both positive and negative turning points, (3) the relationship between LSM scores and both positive and negative turning points. A correlation of $r = .10$ was considered small, $r = .30$ as medium, and $r$
To further examine whether certain factors predicted positive or negative turning points, multiple linear regression models were conducted. First, a multiple linear regression was conducted to examine whether the Appropriate Question Differential (AQP) and evidence presentation/confrontation predicted positive turning points (as well as for negative turning points). Second, a multiple linear regression was conducted to examine whether the positivity aspect of rapport and the attention aspect of rapport predicted positive turning points (as well as for negative turning points). Finally, a single linear regression was conducted to examine whether LSM scores predicted positive turning points (as well as for negative turning points). The last step of the analysis required identifying precipitants preceding turning points and classifying them into the question type and rapport categories. The frequency of each question type and rapport category for precipitants were assessed. Given the lack of variability in the interview outcomes (i.e., only 4 suspects confessed), no inferential statistics were computed with that variable. Focusing on cooperation in the form of information provision remains more important than interview outcome given that it should be the central goal of suspect interviews, rather than obtaining a confession.

**Results**

**Question Types**

The descriptive statistics for question types, appropriate and inappropriate question categories, the AQP variable, and evidence presentation/confrontation can be found in Table 3. The average number of questions asked by interviewers per interview was 164 ($SD = 107.23$, 95% CI [129.86, 206.36]). The broader category of appropriate question types (i.e., open, probing, closed, clarification, summary, and appropriate responses) were asked, on average, 127.93 times ($SD = 83.92$, 95% CI [99.73, 160.37]), while inappropriate question types (i.e.,
leading, forced, opinion/statement, multiple, re-asked, and inappropriate responses) were asked, on average, 24.11 times ($SD = 27.15$, 95% CI [15.04, 33.64]). Accordingly, the average AQD score was 0.72 ($SD = 0.18$, 95% CI [.65, .79]). Evidence presentation/confrontation had a mean of 11.54 utterances per transcript ($SD = 12.11$, 95% CI [7.64, 16.11]).

Probing questions were asked, on average, 55.57 times per transcript ($SD = 36.31$, 95% CI [42.83, 69.92]), while closed-ended yes-no questions were asked, on average, 42.29 times ($SD = 34.14$, 95% CI [30.76, 56.25]). Also, an average of 16.61 utterances were summary statements ($SD = 18.77$, 95% CI [10.39, 23.53]), 13.61 ($SD = 21.66$, 95% CI [6.86, 22.25]) were opinions/statements, and 11.54 ($SD = 12.11$, 95% CI [7.64, 16.11]) were evidence presentation/confrontation statements. The remaining question types (i.e., open, clarification, appropriate response, leading, forced, multiple, re-asked, and inappropriate response) represented five or fewer utterances per transcript.

**Rapport and Linguistic Synchrony**

The descriptive statistics for both aspects of rapport (i.e., positivity and attention) can be found in Table 3. When examining rapport, the average number of instances of total rapport was 90.00 ($SD = 0.24$, 95% CI [59.17, 133.78]). Specifically, interviewers used an average of 82.21 ($SD = 96.22$, 95% CI [55.248, 123.565]) utterances for the attention aspect of rapport and an average of 7.79 ($SD = 9.39$, 95% CI [6.591, 11.570]) utterances related to the positivity aspect of rapport. Finally, an average LSM score of .84 ($SD = .05$, 95% CI [.823, .858]) was observed across all transcripts.
Table 3

*Descriptive Statistics of Question Types, Rapport, and Language Style Matching*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Subcategory</th>
<th>Mean</th>
<th>SD</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>Open</td>
<td>5.89</td>
<td>6.13</td>
<td>[3.75, 8.21]</td>
</tr>
<tr>
<td></td>
<td>Probing</td>
<td>55.57</td>
<td>36.31</td>
<td>[42.83, 69.92]</td>
</tr>
<tr>
<td></td>
<td>Closed</td>
<td>42.29</td>
<td>34.14</td>
<td>[30.76, 56.25]</td>
</tr>
<tr>
<td></td>
<td>Clarification</td>
<td>4.21</td>
<td>3.99</td>
<td>[2.89, 5.78]</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>16.61</td>
<td>18.77</td>
<td>[10.39, 23.53]</td>
</tr>
<tr>
<td></td>
<td>Appropriate answer</td>
<td>3.82</td>
<td>4.34</td>
<td>[2.36, 5.39]</td>
</tr>
<tr>
<td></td>
<td>Total appropriate questions</td>
<td>127.93</td>
<td>83.92</td>
<td>[99.73, 160.37]</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>Leading</td>
<td>2.54</td>
<td>4.15</td>
<td>[1.29, 4.25]</td>
</tr>
<tr>
<td></td>
<td>Forced</td>
<td>3.25</td>
<td>3.32</td>
<td>[2.11, 4.57]</td>
</tr>
<tr>
<td></td>
<td>Multiple</td>
<td>1.75</td>
<td>1.71</td>
<td>[1.14, 2.39]</td>
</tr>
<tr>
<td></td>
<td>Re-asked</td>
<td>2.96</td>
<td>3.69</td>
<td>[1.82, 4.61]</td>
</tr>
<tr>
<td></td>
<td>Inappropriate answer</td>
<td>0.00</td>
<td>0.00</td>
<td>[.000, .000]</td>
</tr>
<tr>
<td></td>
<td>Total inappropriate questions</td>
<td>24.11</td>
<td>27.15</td>
<td>[15.04, 33.64]</td>
</tr>
<tr>
<td>Appropriate Question Differential (AQS)</td>
<td>0.72</td>
<td>0.18</td>
<td>.65 , .79</td>
<td></td>
</tr>
<tr>
<td>Evidence</td>
<td>Presentation/Confrontation</td>
<td>11.54</td>
<td>12.11</td>
<td>[7.39, 16.14]</td>
</tr>
<tr>
<td>Rapport</td>
<td>Positivity</td>
<td>7.79</td>
<td>9.39</td>
<td>[4.64, 11.28]</td>
</tr>
<tr>
<td></td>
<td>Attention</td>
<td>82.21</td>
<td>96.22</td>
<td>[50.76, 121.95]</td>
</tr>
<tr>
<td>Linguistic Synchrony</td>
<td>Language Style Matching (LSM)</td>
<td>0.84</td>
<td>0.05</td>
<td>.82 , .85</td>
</tr>
</tbody>
</table>

**Suspect Cooperation**

To identify turning points within transcripts, each suspect utterance was coded on the cooperation scale (i.e., fully cooperative, reasonably cooperative, minimal cooperation, and non-cooperation). On average, 188.57 ($SD = 142.80, 95\% CI [138.52, 248.48]$) of suspects’ utterances were fully cooperative, while other cooperation levels represented less than 2
utterances per transcript. Since the sample consisted of mostly cooperative utterances, no inferential statistics were conducted to predict cooperation.

**Turning Points**

When looking at the frequency of turning points, 53.6% of transcripts in this sample had positive turning points, and 53.6% of transcripts in this sample had negative turning points. Further examination showed that all transcripts featuring turning points had both positive and negative turning points. A total of 90 turning points were observed, with 46 positive and 44 negative turning points. On average, there were 1.64 ($SD = 2.21, 95\% CI [.89, 2.50]$) positive turning points per transcript, and 1.57 ($SD = 1.99, 95\% CI [.89, 2.32]$) negative turning points within each transcript.

Bivariate correlations were computed to examine the relationships of different factors with turning points (see Table 4). Pearson correlations showed that a large positive correlation between negative turning points and evidence presentation/confrontation ($r = .525, p = .002, 95\% CI [.189, .751]$), and a moderate positive correlation between negative turning points and positivity ($r = .481, p = .010, 95\% CI [.131, .724]$). A single moderate negative correlation emerged between AQD and negative turning points ($r = -.394, p = .038, 95\% CI [-.668, - .024]$). All other correlations were not statistically significant.

Similarly, positive turning points had a large positive correlation with evidence presentation/confrontation ($r = .575, p = .001, 95\% CI [-.686, -.056]$), and a moderate positive correlation with positivity ($r = .452, p = .016, 95\% CI [.095, .706]$). Moreover, a moderate negative correlation was observed between positive turning points and AQD ($r = -.420, p = .026, 95\% CI = [-.686, -.056]$). All other correlations were not statistically significant.
Table 4

Pearson's Correlations and Between Turning Points and Interviewer Behaviours

<table>
<thead>
<tr>
<th>Variables</th>
<th>Positive Turning Points</th>
<th>Negative Turning Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>95% CI</td>
</tr>
<tr>
<td>Appropriate questions</td>
<td>.044</td>
<td>[-.334, .411]</td>
</tr>
<tr>
<td>Inappropriate questions</td>
<td>.335</td>
<td>[-.043, .629]</td>
</tr>
<tr>
<td>AQD</td>
<td>-.420*</td>
<td>[-.686, -.056]</td>
</tr>
<tr>
<td>Evidence presentation/Confrontation</td>
<td>.575**</td>
<td>[.257, 781]</td>
</tr>
<tr>
<td>Rapport: Positivity</td>
<td>.452*</td>
<td>[.095, .706]</td>
</tr>
<tr>
<td>Rapport: Attention</td>
<td>.110</td>
<td>[-.274, .464]</td>
</tr>
<tr>
<td>Language Style Matching</td>
<td>-.044</td>
<td>[-.410, .335]</td>
</tr>
</tbody>
</table>

* p < .05, **p < .01, two-tailed.

Precipitants

To identify behaviours that preceded turning points, each interviewer utterance prior to the turning points was coded for question type category and rapport.\(^1\) Accordingly, the sample here was 90 precipitants (i.e., interviewer utterances), with 46 utterances preceding positive turning points ($n = 46$), and 44 utterances preceding negative turning points ($n = 44$). The frequencies of each question type for precipitants for both positive and negative turning points can be found in Figure 1.

For positive turning points, the most frequent precipitants were closed questions (26.1%, $SE = 6.6$, 95% CI [13.1, 39.1]), evidence presentation/confrontation (15.2%, $SE = 5.1$, 95% CI [6.5, 26.1]), and probing questions (15.2%, $SE = 5.2$, 95% CI [6.5, 26.1]). Additionally, 19.6% ($SE = 5.9$, 95% CI [8.7, 30.4]) of utterances preceding positive turning points involved the

\(^1\) Language Style Matching could not be calculated at this level as it had to be done at the entire transcript level.
attention aspect of rapport, while 15.2% ($SE = 5.4$, 95% CI [6.5, 26.1]) included the positivity aspect of rapport (see Figure 2).

Negative turning points were most frequently preceded by probing questions (27.3%, $SE = 6.7$, 95% CI [13.6, 40.9]), closed questions (25%, $SE = 6.8$, 95% CI [11.4, 38.6]), and evidence presentation/confrontation (13.6%, $SE = 5.4$, 95% CI [4.5, 25]). Regarding rapport, 31.8% ($SE = 7.2$, 95% CI [18.2, 45.5]) of precipitants of negative turning points had the attention aspect of rapport, while 2.3% ($SE = 2.3$, 95% CI [0, 100]) of precipitants showed the positivity aspect of rapport (see Figure 2).

**Figure 1**

*Frequencies and Standard Errors of Question Type Precipitants for Positive and Negative Turning Points*

*Note.* Number of positive turning points = 46, number of negative turning points = 44, total $N = 90$. Question types with a null prevalence were excluded from the figure.
Figure 2

Frequencies and Standard Errors of Rapport Type Precipitants for Positive and Negative Turning Points

Note. Number of positive turning points = 46, number of negative turning points = 44, total N = 90.

Associations Between Turning Points and Question Type, Rapport, and LSM

To further explore whether certain factors were associated with turning points, linear regressions were conducted. Accordingly, a regression model was designed for each category of factors (i.e., question type, rapport, and LSM) to investigate its association to (1) positive turning points, and (2) negative turning points. The linear regression models reported below met the assumptions required to perform these analyses. Specifically, tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern (i.e., observed values were below 0.2 on the Tolerance, below 5 on the VIF; Menard, 2002). For single linear
regressions, multicollinearity was assessed using the Durbin-Watson test, which revealed values close to 2 (Durbin & Watson, 1951). Moreover, for all models, the histograms of standardised residuals indicated that the data showed somewhat normally distributed errors, as did the normal P-P plots of standardised residuals. When assessing the homogeneity of variance and linearity, scatterplots of standardised residuals showed that the data met these assumptions as well. Finally, undue influence was examined using Cook’s distance value, which reported no problematic outliers (i.e., no value above 1; Cook, 1977).

**Question Types and Turning Points**

Multiple linear regressions were carried out to explore the associations between question types and turning points. Due to low frequencies or lack of variation of individual question types, they were not included in the regression model. Instead, two predictors were selected for the inclusion in the model: the Appropriate Question Differential (AQD), which captures the relative rate of questions asked during the interview, and evidence presentation/confrontation. For negative turning points, a statistically significant regression equation was observed $F(2, 25) = 5.23, p = .013$, and with 29.5% explained by the model (see Table 3). Evidence presentation/confrontation was significantly related to negative turning points ($b = .072, t(25) = 2.23, p = .035, 95\% CI [0.06, 0.139]$), while AQD was not. For positive turning points, a statistically significant regression equation was found $F(2, 25) = 6.74, p = .005$, with 35.0% of the variation explained by the model (see Table 5). Specifically, the evidence presentation/confrontation was significantly related to positive turning points ($b = .089, t(25) = 2.59, p = .016, 95\% CI [0.018, 0.161]$).
Table 5

Multiple Linear Regressions Analyses of Positive and Negative Turning Points based on Question Types

<table>
<thead>
<tr>
<th></th>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Turning Points</td>
<td>Appropriate Question Differential</td>
<td>-2.01</td>
<td>2.30</td>
<td>-.17</td>
<td>.390</td>
<td>[-6.75, 2.73]</td>
</tr>
<tr>
<td></td>
<td>Evidence Presentation/Confrontation</td>
<td>0.089</td>
<td>0.035</td>
<td>.49</td>
<td>.016*</td>
<td>[.018, .161]</td>
</tr>
<tr>
<td>Negative Turning Points</td>
<td>Appropriate Question Differential</td>
<td>-1.80</td>
<td>2.15</td>
<td>-.16</td>
<td>.412</td>
<td>[-6.23, 2.64]</td>
</tr>
<tr>
<td></td>
<td>Evidence Presentation/Confrontation</td>
<td>0.072</td>
<td>0.03</td>
<td>.44</td>
<td>.035*</td>
<td>[.006, .139]</td>
</tr>
</tbody>
</table>

Note. *p < .05.

Rapport and Turning Points

The attention aspect of rapport showed no meaningful correlation with turning points and violated the linearity assumption of a regression model. Therefore, attention was not included in subsequent inferential analyses. Instead, single linear regressions were conducted to explore the associations between the positivity aspect of rapport and turning points. When looking at negative turning points, a statistically significant regression equation was found, $F(1, 26) = 7.82, p = .01$, with 23.1% of the variation in negative turning points explained by the model (see Table 6). Specifically, the positivity aspect of rapport ($b = .102, t(26) = 2.79, p < .01, 95\% \text{ CI } [.027, .177]$) was significantly related to negative turning points. Next, the analysis of positive turning points resulted in a statistically significant regression equation, $F(1, 26) = 6.69, p = .016$, with 20.5% of the variation in positive turning points explained by the model. The positivity aspect of rapport was significantly related to positive turning points ($b = .107, t(26) = 2.57, p < .016, 95\% \text{ CI } [.022, .192]$).
Table 6

*Single Linear Regressions Analysis of Positive and Negative Turning Points based on Rapport*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Turning Points</td>
<td>.12</td>
<td>.04</td>
<td>.45</td>
<td>.016*</td>
<td>[.022, .192]</td>
</tr>
<tr>
<td>Negative Turning Points</td>
<td>.10</td>
<td>.04</td>
<td>.48</td>
<td>.01*</td>
<td>[.027, .177]</td>
</tr>
</tbody>
</table>

*Note. *p < .05.*

**Language Style Matching**

Next, a simple linear regression analysis was conducted to investigate whether LSM scores predicted positive turning points (see Table 7). A non-statistically significant regression equation was found $F(1, 26) = 0.050, p = .825$, and no significant associations were observed ($b = -2.066, t(26) = -.223, p = .825$, 95% CI [ -21.08, 16.95]). Finally, a simple linear regression was conducted to examine whether LSM scores predicted negative turning points. Consistent with the previously described results, a non-statistically significant regression equation was found $F(1, 26) = 0.016, p = .899$, and no significant associations were observed between LSM scores and negative turning points ($b = -1.064, t(26) = -.13, p = .899$, 95% CI [ -18.15, 16.03]).

Table 7

*Single Linear Regressions Analysis of Positive and Negative Turning Points based on LSM*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Turning Points</td>
<td>-2.07</td>
<td>9.25</td>
<td>-.04</td>
<td>.825</td>
<td>[-21.08, 16.95]</td>
</tr>
<tr>
<td>Negative Turning Points</td>
<td>-1.06</td>
<td>8.31</td>
<td>-.03</td>
<td>.899</td>
<td>[-18.15, 16.03]</td>
</tr>
</tbody>
</table>
Discussion

Although suspect interviewing is widely recognized as a dynamic process rather than static one, only a handful of studies analyzed the dynamic shifts that occur between suspects and interviewers over time. The overarching intention of the present study was to explore changes in suspect cooperation during actual police interviewing of serious crime suspects. As such, the research objectives were threefold: (1) to adopt a novel theoretical approach for understanding cooperation by utilizing Druckman’s (2001) turning points framework, (2) to explore interviewing strategies (i.e., questioning strategies, rapport) that may influence changes in suspects’ cooperation, and (3) to examine the association between Language Style Matching and turning points. Initial analyses revealed a rather homogeneous sample: most suspect utterances were fully cooperative, and interviewers asked more appropriate questions than inappropriate ones. Yet, positive and negative turning points were observed in approximately half of the transcripts, suggesting that examining changes in suspect cooperation was warranted. The present study is the first to systematically identify and explore turning points in transcripts of suspect interviews, shedding light on their associations with various interviewer behaviours. Moreover, the findings revealed that the same factors were related to both positive and negative turning points, thus showing a consistent pattern of relationships across turning points. Similarity between the positive and negative turning points suggests that these factors contribute to a dynamic change in suspect cooperation, which can result in either shifts toward increased or decreased cooperation.

Use of Question Types
Appropriate Question Types

The current study found that appropriate question types (i.e., open, probing, closed, clarification, summary, and appropriate answer to suspect’s question) were asked more frequently than inappropriate questions (i.e., leading, forced, opinions/statements, multiple, re-asked, inappropriate answer to suspect’s question). However, and consistent with previous research, open-ended questions that encourage free narratives were rarely asked (Snook et al., 2012; Wright & Alison, 2004) while probing and closed-ended yes or no questions were the most frequently asked question types (Griffiths & Milne, 2011; Snook et al., 2012). Interviewers may be infrequently asking open-ended questions as they can be perceived as less effective in achieving investigative interviewing goals (i.e., getting answers to specific elements of the case). In contrast, asking suspects to provide answers to specific requests, as seen with probing and closed-ended questions, gives interviewers a greater sense of control over interviewing strategy (Griffiths et al., 2011). The summary questions/statements category was the third most frequently used by interviewers in this sample, accounting for just over 10% of the questions asked. While previous methodologies examining question types did not capture the summary questions/statements category (Kelly & Valencia, 2021; Snook et al., 2012), its frequency suggests that it is worth considering in future studies. Similar to the operationalization of summary questions/statements in the present research, a recent study included a category of “statement questions” that encompassed utterances echoing or rephrasing the suspect’s previous responses to encourage further disclosure of information (Leahy-Harland & Bull, 2017). Using summary statements may allow interviewers to effectively pursue their investigative goals by emphasizing important elements in suspect's responses and providing an opportunity for the suspect to rectify any misunderstanding in the narrative. Other studies have included “echo”
statements (e.g., suspect “I was there”, interviewer “you were there?”) as an inappropriate question type (Oxburgh et al., 2012). Therefore, future studies should examine this novel question type category and its role in the interviewing strategies. However, it is worth noting that using verbatim transcripts alone, without audio recordings, may limit the ability to accurately interpret the intonation of an utterance and discern its intended function.

The present study also investigated the relationships between appropriate question types and turning points. Although previous research found that appropriate questions were related to higher cooperation (Kelly & Valencia, 2021), no relationship emerged between appropriate questions and positive turning points. As previously mentioned, transcripts in this sample exhibited a high frequency of overall appropriate questions, which differs from other studies where interviewers asked significantly more inappropriate questions compared to appropriate ones (Oxburgh et al., 2012). The average tendency to ask more appropriate questions (cf. inappropriate ones) suggests that the pool of interviewers in this sample was skilled in information gathering techniques. Interviewer proficiency could be attributed to the fact that interviews were conducted by a police organization in the UK, which has adopted the PEACE interviewing model as standardized training across the country for several years now (Farrugia et al., 2018). At the heart of the PEACE approach is information gathering and ethical interviewing. A diverse sample from different countries with varying interviewing models may provide a better understanding of the specific impact of appropriate question types on turning points. However, it is also possible that appropriate questions may not directly relate to either positive or negative changes in suspect cooperation. Instead, appropriate questions may be playing a role in maintaining communication throughout the interview process.
**Inappropriate Question Types**

Although questioning practices of interviewers in this sample were predominantly appropriate, preliminary analyses indicated the presence of inappropriate question types. Among these inappropriate questions, opinions/statements were most frequently used, accounting for an average of just under 10% of total questions asked in a transcript. This mean frequency aligns with findings from previous research, which reported opinion statements comprising approximately 7% of all questions asked (Snook et al., 2012). The remaining inappropriate question types (i.e., leading, forced-choice, multiple, re-asked, and inappropriate responses) occurred less than 5% of the time. Just as the high frequency of appropriate question types, the relatively low frequency of inappropriate question types may be attributed to interviewers’ training in the PEACE model of interviewing. However, even low frequencies reflect that there is still room for improvement in questioning practices. It is also worth noting that other studies have differentiated between appropriate closed-ended questions, and inappropriate closed-ended questions (Kelly & Valencia, 2021). Assessing inappropriate versus appropriate closed yes/no questions in transcripts without recordings would have been challenging, because they frequently appear identical in wording and only differ depending on their timing within the interview (Griffiths & Milne, 2006). Using such an approach to coding question types would have potentially yielded different results in the present study.

Further exploration of the relationship between overall inappropriate questions and turning points revealed no meaningful correlations. This finding illustrates that an increase in inappropriate questions was not related to a shift in suspects’ cooperative stance. Similarly, previous studies found no significant correlations between inappropriate questions and cooperation (Kelly & Valencia, 2021). In contrast, other studies have shown that inappropriate
questions, specifically negative questions (e.g., “Evidence suggests you were with her that night, don’t you admit to that?”), were associated with increased likelihood of denial of the offence (Leahy-Harland & Bull, 2017). Contradicting results in the literature may be attributed to differences in methodologies between studies, particularly in determining which question types are categorized as appropriate and inappropriate. Personalized coding guides can yield varying conclusions regarding the influence of inappropriate question types on cooperation or interview outcome.

**Appropriate Questions Differential**

In the case of the AQD, the overall average (.72) was much higher than previously observed in other research (.24; Kelly & Valencia, 2021). In the present study, a higher proportion of appropriate questions were asked in comparison to inappropriate questions. However, Kelly and Valencia used a North American sample of audio and video recorded interviews obtained from a Robbery and Homicide Division, which differs on many levels from the sample used in the current study (e.g., crime type, data collection). Several noteworthy differences may have influenced be the AQD average observed in each study. First, the interviewing model widely used in North America remains accusatory in nature (King & Snook, 2009), leading interviewers to ask more inappropriate questions compared to those trained in humanitarian interviewing, such as the PEACE model. Second, access to audio or video recorded interviews potentially allows for better discrimination of the function of a question compared to transcripts without nonverbal cues. Finally, interviewers' strategies may vary depending on the type of crime the suspect is being accused of, leading to differences in question types asked more frequently.
When examining the relationship between AQD and turning points, moderate negative correlations were observed for both positive and negative turning points. The current findings imply that as the AQD increased (i.e., the number of appropriate questions was greater than inappropriate questions asked), a suspect’s cooperation was less likely to fluctuate. Previous research has shown a moderate correlation between the AQD and suspect cooperation, while also noting that the association was non-existent once entered in a regression model (Kelly & Valencia, 2021). A similar observation was made in the current study, suggesting that AQD alone, and by extension appropriate and inappropriate question types, may not heavily account for changes in suspects’ cooperation.

**Evidence Presentation/Confrontation**

The use of evidence presentation/confrontation within the current sample was lower compared to previous studies. Descriptive analysis revealed an average 12 instances of evidence presentation/confrontation in a transcript, whereas Leahy-Harland and Bull (2017) reported an average of 22 instances. The difference between studies can potentially be attributed to the nature of suspected crimes, as the present sample was homogeneously comprised of suspects involved in sexual offences. Specifically, sexual offences generally lack physical evidence (Jordan, 2004). Apart from confronting suspects with the victims’ version of events, interviewers frequently have little evidence to use during an interview (see Wentz, 2020). However, it is also possible that differences in frequency of evidence presentation/confrontation are due to random variability between samples.

Previous research has examined the benefits of presenting evidence during an interview in relation to overall interview outcome. For example, studies showed that disclosure of evidence correlates with confessions (Soukara et al., 2009). Findings from the present study showed large
positive correlations between evidence presentation/confrontation with both positive and negative turning points, suggesting it may play a role in altering the dynamic of the interaction by influencing the suspect’s cooperative stance. The introduction of evidence into the interview may elicit an emotional response from suspects, thereby influencing their inclination either towards or away from cooperation. Literature on offenders’ perspective of forensic interviews has demonstrated that perceived strength of evidence influences their decision-making process (Deslauriers-Varin, 2021) and predicts their likelihood to confess (St-Yves & Deslauriers-Varin, 2009). However, previous research evaluating the relationship between evidence presentation and suspect cooperation showed that they were negatively and moderately related to each other (Kelly & Valencia, 2021). Since the focus of the present study was specifically change in suspect cooperation (i.e., turning points) rather than a static measure of overall cooperation, it is possible that an increased use of evidence led to greater fluctuations in the dynamics of the interaction.

Further examination into the association between evidence presentation/confrontation and turning points revealed that it remained a significant predictor of both positive and negative turning points. This finding suggests that the introduction of evidence into the interview influences the dynamic of the interaction, leading the suspect to shift from a less cooperative stance to a more cooperative one, or vice versa. Strategically using evidence when the suspect is uncooperative may lead to a shift towards increased cooperation and restored communication. Although guilt of interviewed suspects could not be assessed within the current study, research supporting that guilty and innocent suspects adopt different strategies when attempting to deliver a convincing account (Gran Hag & Hartwig, 2008; 2015) may suggest that evidence presentation/confrontation leads guilty and innocent suspects to exhibit different turning points (i.e., positive or negative). Moreover, a growing body of literature has examined the influence of
timing of evidence disclosure on different interviewing outcomes (see Oleszkiewicz & Watson, 2021 for a meta-analysis). Future research should attempt to examine whether the timing (i.e., gradual or late) of evidence disclosure influences turning points in different ways.

**Use of Rapport**

Consistent with previous research examining rapport strategies during interviews with sexual offenders (Collins & Carthy, 2019), the present findings showed that interviewers employed the attention aspect of report more frequently than the positivity aspect of report. Positivity, which is characterized by verbal demonstration of empathy, use of suspect’s name, politeness, humour, friendliness, and reassurance, may be hard for interviewers to exhibit and maintain with suspects of particularly heinous crimes such as sexual offences. Research has shown that interviewers often hold more negative attitude towards sex offenders compared to suspects of other types of offences (Oxburgh et al., 2015). These negative attitudes can potentially influence the rapport-building process by diminishing the use of certain rapport-building strategies. Additionally, the higher prevalence of attention may be due to the PEACE interviewing training (i.e., humanitarian interview) mandatory for interviewers in the UK. In this training, officers are instructed to engage in active listening, a key component of the attention aspect of rapport (Clarke & Milne, 2001).

When looking at the role of rapport during suspect interviews, previous research (Alison et al., 2013, Walsh & Bull, 2012) established that rapport behaviours were positively associated with favorable interview outcomes, such as elicitation of investigative relevant information (Collins & Carthy, 2019). Rapport was also found to be associated to higher cooperation among suspects (Bull & Soukara, 2010; Kelly & Valencia, 2021) and increased likelihood of admissions (Leahy-Harland & Bull, 2017), but specific characteristics of rapport that contribute to
cooperation were previously unknown. By using a methodology that is theoretically sound and empirically grounded in categorizing specific rapport behaviours (Collins & Carthy, 2019), the present study’s findings showed that only the positivity aspect of rapport was associated with turning points, reflecting changes in suspect cooperation. That is, that verbal demonstrations of positivity may play a crucial role in fostering a shift in suspect cooperation and ultimately influencing the successful achievement of investigative goals. Previous research examining sexual offenders’ perspective of their interrogations demonstrated that they were more likely to confess when a sensitive and humane approach was used by the interviewer (Holmberg & Christianson, 2002; Kassin & Gudjonsson, 2004; Kebb ell et al., 2010). Hence, the positivity aspect of rapport, characterized by instances of empathy, friendliness, and politeness, may be the most impactful demonstrations of humanity and sensitivity.

Considering that observational studies showed that many interviewers insufficiently engage in rapport building when interviewing suspects (Vanderhallen et al., 2014), the findings from the present study serve to encourage the officers in the field to increase the utilization of positivity during interviews. However, previous research found that the positivity aspect of rapport was unrelated to obtaining investigative relevant information (Collins & Carthy, 2019), suggesting that positivity may be favoring continued communication in forensic interview settings but not necessarily producing relevant information. High prevalence of the attention aspect of rapport, coupled with the non-existent relationship between the attention and turning points, may demonstrate that attention is beneficial to obtain relevant information (Collins & Carthy, 2019), but not enough to change a suspect’s cooperative stance.
Precipitants

Applying Druckman’s (2001; 2004) theoretical framework of turning points to the field of investigative interviewing allowed the exploration the characteristics of precipitants preceding positive and negative turning points. Three major question types emerged as the most frequently used prior to a turning point: closed-ended questions, probing questions, and evidence presentation/confrontation. Although these three categories emerged as most frequent precipitants for both positive and negative turning points, their frequency differed. For positive turning point, closed-ended questions represented over a quarter of precipitants (26.1%). In contrast, precipitants of negative turning points were mostly probing questions (27.5%) and closed-ended questions (25%). Findings from the present study suggest that certain question types may play a role in influencing changes in the dynamics of the interaction.

Regarding rapport, results showed larger differences between positive and negative groups for instances of positivity and attention. In utterances preceding positive turning points, instances of positivity (15.2%) were used more frequently than in utterances preceding negative turning points (2.3%). However, negative turning points were more frequently preceded by instances of attention (31.8%) compared to positive turning points (19.6%). Together, findings suggest that positivity, while occurring relatively infrequently (less than 8 times per interview), explained more of the variance in turning points compared to attention.

Using the conceptual framework of turning points, specifically coding for precipitants, provided a novel approach to understanding changes in the dynamic of the interaction between the interviewer and the suspect. However, the generalizability of the results pertaining to characteristics of precipitants remains limited due to the descriptive (cf. experimental) nature of the analysis. Moreover, research on suspect interviewing has identified and classified a wide
range of techniques that are used by officers in the field (see Kelly et al., 2013; 2016), which may be contributing to dynamic changes within an interview. A fine-grained analysis, employing both a comprehensive coding of all known interrogation strategies and Druckman’s (2001) framework, may allow researchers clarify which factors are closely associated with turning points. However, conducting such an in-depth assessment was beyond the scope of the current study and would not have been realizable due to nature of data (i.e., transcripts rather than audio-video data) and resource limitations. Finally, future researchers may also benefit from incorporating qualitative analysis into their study design to gain a greater understanding of some shared characteristics of precipitants. Specifically, analyzing the content of utterances (e.g., topics addressed within the utterance) preceding turning points may provide valuable insights regarding the contextual factors (e.g., topic changes) and potential themes (e.g., offending history, victim’s account) within the interaction that emerge prior to turning points.

**Language Style Matching**

The current study also investigated the relationship between language coordination and turning points in suspect interviews. Previous research has shown that high levels of Language Style Matching (LSM) are associated with increased cooperation in negotiation (Taylor & Thomas, 2008) and interrogation outcomes (Richardson et al., 2014). Contrary to the initial hypothesis, the bivariate correlations and the regression model revealed no significant relationship between overall LSM score and positive turning points. No significant relationship was observed for negative turning points either. The average LSM score (.84) reported in the present study resembles those reported by similar studies looking at language coordination between suspects and interviewers (.85 and .86; Richardson et al., 2014). Likewise, Richardson and colleagues also reported that no significant differences were observed between LSM scores
of interviews resulting in a confession, and LSM scores of interviews resulting in a non-confession. However, their fine-grained analysis of word categories (e.g., adverbs, articles) revealed significant differences in matching patterns between interrogators and suspects. Conducting a word-category analysis of linguistic coordination in the present study would have potentially uncovered some relationships between word-categories and turning points in suspects’ cooperation. It is possible that individual word categories, rather than absolute LSM scores, may be explaining part of the variability in suspects’ cooperative stance. However, the focus of this study was on the overall impact of language coordination on turning points, rather than conducting a detailed examination of specific word categories. Therefore, conducting an in-depth analysis of language coordination was beyond the scope of the present study.

**Limitations**

An important strength of the present study is the sample is of real-world interviews with suspects of sexual offences. Gaining access to such data is often incredibly difficult, and studies examining field practices allow researchers to advance knowledge of investigative interviewing research and practice. However, such a sample also comes with limitations. Specifically, there are a few limitations with the present research that limit the generalizability of the findings. First, the convenience sample obtained was relatively small and homogeneous: suspects were all interviewed for sexual offences, they were very cooperative, and most did not confess. Due to the sample size and the lack of variance in the data, conclusions drawn from the present findings may not be representative of investigative interviewing practices in different countries and with suspects of various types of offences. It would be relevant for future researchers to replicate the current study on larger scale with a randomly selected sample of suspect interviews. Additionally, researchers should consider examining turning points in interviews conducted in
line with PEACE approach and in those using the Reid model. By comparing turning points between the two models, researchers may be able to identify factors influencing the changes of suspects cooperativeness.

Another important limitation is the exploratory nature of the analyses. Conducting descriptive analyses, coupled with bivariate correlations and regressions, allowed for the adoption of a novel approach to understanding the dynamics of the interviewer-interviewee at a macro-level. While the current research remains correlational, it can serve to inform future experimental research designs analyzing the influence of certain factors, such as question types, evidence disclosure, or type of rapport, on the occurrence of turning points in suspect interviews. Moreover, in-depth analyses, such as multi-level modelling or qualitative analyses, may reveal distinct patterns influencing suspect cooperation.

Conclusion

Although a few studies have examined the relationships between interviewers’ behaviours and suspects’ responses, the present study was the first to systematically analyze turning points in suspect interviews. By doing so, the study addresses the need expressed in the literature to consider the fluidity of the interaction and assess the dynamic nature of suspect interviewing. Despite its limitations, findings showed that the concept of turning points can be informative in the investigative interview research as it can help identify factors related to change in suspect cooperative stance. Specifically, the relationships between evidence presentation/confrontation and the positivity aspect of rapport with turning points may be of interest to study in future experimental research.
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Appendix A

Coding Guide

Step 1. Analysis of Cooperation at a Sentence Level

Code every suspect response according to the following 4 categories of cooperation:

A. Fully co-operative: suspect answers the question asked (i.e., provides a relevant response to the specific question asked by the interviewer) – not necessarily a disclosure (i.e., confession) but full engagement with the interviewer.

B. Reasonably co-operative: suspect partially answers the question asked (i.e., provides a somewhat relevant response to the specific question asked by the interviewer) with a few instances of disengagement/hesitance.

C. Minimal co-operation: suspect provides an irrelevant answer to the question asked (i.e., does not answer the specific question asked by the interviewer) and engages minimally with the interviewer.

D. Non-cooperative: does not answer the question at all, no comment throughout, no investigation relevant/important information, does not engage with the interviewer, hostile behaviour.

Note: The cooperative nature of responses to close-ended questions, such as "yes" or "no," depends on whether the suspect provides an answer that directly addresses the question posed.

Calculate the total number of responses in each cooperation category.

Step 2. Coding Question Types

Code every question asked by the interviewer:

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>These questions elicit responses from interviewees based on their own memory recall. They are usually formulated with words such as &quot;tell,&quot; &quot;explain,&quot; or &quot;describe,&quot; and allow for a broad spectrum of answers. An instance of such a question would be &quot;Describe what you did yesterday.&quot;</td>
</tr>
<tr>
<td>Probing</td>
<td>These questions are designed to prompt more focused answers, and they rely on cues such as specific events or experiences. They can start with “who,” “what,” “why,” “where,” “when,” or “how.” For example, “Who was at the party with you?”</td>
</tr>
<tr>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Closed – yes/no</td>
<td>Questions that are typically answered with a “yes” or a “no”. For example, “Could you see her face?”</td>
</tr>
<tr>
<td>Leading</td>
<td>This type of question is suggestive as it contains the desired answer within the question. “You were desperate, right?” would be an example of a leading question.</td>
</tr>
<tr>
<td>Forced choice</td>
<td>This type of question forces the interviewee to choose between limited options. An example would be: “Did you take a taxi or the bus?”.</td>
</tr>
<tr>
<td>Opinions/statements</td>
<td>This type of utterance involves posing an opinion or statements to an interviewee. For example, “I think you know that was wrong”.</td>
</tr>
<tr>
<td>Multiple</td>
<td>This question type involves the interviewer posing multiple questions at once before allowing the interviewee to respond. An example of this would be, “How did you get there? What did you do inside? When did you first decide to steal the car?”</td>
</tr>
<tr>
<td>Re-asked</td>
<td>This question type involves the interviewer asking any question that was asked earlier in the interview.</td>
</tr>
<tr>
<td>Clarification</td>
<td>These question types involve the interviewer repeating what the interviewee has said (right before) but forming it as a question. An example of a clarification question would be as follows: “Interviewee: John said he went to a movie. Interviewer: Okay, so John went to a movie? Interviewee: Yes, that’s right.”</td>
</tr>
<tr>
<td>Summary</td>
<td>These statements involve the interviewer summarising whatever the suspect discussed previously. For example, “So you said that after your conversation with Josh, you left Alice’s house and did not call anyone afterwards”.</td>
</tr>
<tr>
<td>Response - appropriate</td>
<td>The interviewer provides an appropriate answer to a question asked by the suspect. “Suspect: What do you mean? Interviewer: I mean how do you define sex?”</td>
</tr>
<tr>
<td>Response - inappropriate</td>
<td>The interviewer provides an inappropriate response to a question asked by the suspect. “Suspect: What do you mean by rape kit? Interviewer: You should know what a rape kit is.</td>
</tr>
<tr>
<td>Evidence presentation/confrontation</td>
<td>The interviewer presents or confronts the suspect with evidence.</td>
</tr>
</tbody>
</table>
“Interviewer: We have three witnesses that saw you follow her out of the bar into the alley”

**Step 3. Coding Rapport**

We are going to code rapport according to Collins & Carthy’s (2019) methodology. Specifically, we will code for total instances of two rapport components: positivity (1), and attention (2). Each component is comprised of different indicators.

<table>
<thead>
<tr>
<th>Component</th>
<th>Indicator description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Positivity</strong></td>
<td>Empathy</td>
<td>“I can understand why you might feel nervous.”</td>
</tr>
<tr>
<td></td>
<td>Use of suspect’s name</td>
<td>“Where did you buy the computer James?”</td>
</tr>
<tr>
<td></td>
<td>Politeness</td>
<td>“Thank you for answering my questions.”</td>
</tr>
<tr>
<td></td>
<td>Humour</td>
<td>“Okay thanks for telling me your age. I know you said your date of birth but I couldn't work it out as my maths isn't all that great (laughs).”</td>
</tr>
<tr>
<td></td>
<td>Friendliness</td>
<td>“How are you feeling today?”</td>
</tr>
<tr>
<td></td>
<td>Reassurance</td>
<td>“(Name) has previously worked on a unit, which deals with child investigations. And the reason I tell you that is because there's nothing that you can tell me or (name) that's going to shock me.”</td>
</tr>
<tr>
<td><strong>2. Attention</strong></td>
<td>Facilitators *Do not have to be stand-alone utterances. Can be followed by a sentence or question.</td>
<td>“Mmm.”</td>
</tr>
<tr>
<td></td>
<td>Acknowledgments *Do not have to be stand-alone utterances. Can be followed by a sentence or question.</td>
<td>“Okay” or “yeah.”</td>
</tr>
<tr>
<td></td>
<td>Paraphrasing</td>
<td>“So you downloaded the software …” (repeating back what the suspect has said).</td>
</tr>
<tr>
<td></td>
<td>Identifying of emotions</td>
<td>“I see that you are sad.”</td>
</tr>
</tbody>
</table>
Step 4. Coding Turning Points

- Total positive turning points (a shift from uncooperative to cooperative)
- Total negative turning points (a shift from cooperative to uncooperative)

Step 5. Interview Outcome

Code whether the suspect confessed (0) or did not confess (1).