CREDIBILITY ASSESSMENT OF CRIMINAL SUSPECTS THROUGH STATEMENT ANALYSIS

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This paper discusses the research and theoretical underpinnings of statement analysis techniques for credibility assessment purposes with criminal suspects. Although the principles of statement analysis have long been recognized, only recently have specific techniques been formalized. It is argued that, in seeking patterns of verbal deception in the interrogation context it is necessary to integrate theories considering emotional, motivational, cognitive, and linguistic factors. Approaches emphasizing memory suggest that there exist systematic differences between accurate and inaccurate memory accounts. Approaches emphasizing deception indicate that discernible differences may exist between truthful and dishonest language behaviors. Directions for future research are described focusing on the need for eclectic strategies with both experimental and field studies.

Key words: statement analysis; interrogation; deception; credibility; language

INTRODUCTION

And the Lord said unto Cain, “Where is Abel thy brother?” And he said “I know not: Am I my brother’s keeper?” (Genesis 4:9)

It did not take long for humans to employ language to attempt to circumvent penalty for misdeeds. In this first case, Cain’s deception is quickly ascertained by the Deity who imposes a harsh punishment for his murderous transgression. Unfortunately, human investigators are not omniscient and must seek alternative methods of credibility assessment in criminal cases. Hocking, Bauchner, Kaminski, and Miller (1979) described a scroll from 900 BC articulating an Egyptian method based in part on the suspect’s verbal behaviors:

- The liar does not answer questions, or they are evasive answers; he speaks nonsense, rubs the big toe along the ground and shivers; his face is discoloured; he rubs the roots of his hair with his fingers.

More recently, Camps and Berger (1966) examined investigators’ use of verbal clues in the 1938 London homicide case involving John Christie. Police located eight women murdered in the vicinity of Christie’s residence. Christie eventually admitted responsibility for the deaths of the women. However, the delusory elements of his statements became evident with systematic evaluation (mainly by noting discrepancies between his testimony and physical evidence). Retrospectively, it was possible to assess their accuracy and completeness, revealing Christie’s deceptions. Nonetheless, a more sophisticated system of statement analysis may have prevented several deaths; Christie had been questioned earlier and released, after which other women were killed and the wrong man was hanged (Camps et al., 1966).

Another notable example of statement analysis occurred following the capture of the notorious Nazi officer, Adolf Eichmann, in 1960. His interrogator, Avner Less, observed that a
specific verbal clue was crucial in assessing credibility and directing the investigation. Less (1983) noted: "As time went on, I noticed that each time Eichmann said "Never! Never! Never, Herr Hauptmann!" or "At no time! At no time!" he was lying. That was always a cue for me to ask my colleagues to search for additional material with which to probe the sensitive spot."

The question of whether truthful and deceptive accounts can be reliably differentiated based on verbal clues has been investigated empirically only recently (Landry and Brigham, 1992). Increasingly complex methods of credibility assessment have been developed, notably the polygraph. Despite its renown, however, the polygraph has not gained unequivocal status as an effective technique. A major criticism of the polygraph is the elevated rate of false positive decisions it yields (e.g., Gale, 1988; Honts and Perry, 1992), counter to a legal system designed to protect the innocent (Iacono and Patrick, 1987). Also guilty people can "fool" the polygraph under certain circumstances (Honts, Raskin and Kircher, 1994). Other components of the detection arsenal including narcoanalysis, hypnosis, and voice analysis (Psychological Stress Evaluator) are also associated with serious shortcomings (e.g., Gunn and Gudjonsson, 1988). Similarly, research has negated the assumption that the experience or intuition of an investigator is superior to any formal technique (e.g., DePaulo and Pfeifer, 1986; Kohnken, 1987). Ekman and O'Sullivan (1991) found that robbery investigators, psychiatrists, judges, professional polygraphers, college students, and a special interest group who had received training in detecting deceit all performed at chance levels in assessing videotaped reports whereas Secret Service agents did so slightly above chance level.

These problems suggest an exigency for the development of novel, innovative techniques, especially if one considers that often the sole evidence available to the police are the words of the complainant and the accused. For example, in cases of sexual assault there is frequently little physical evidence with which to evaluate an allegation (e.g., Yuille, 1988). Cases of this type have been increasing at an alarming rate (Finkelhor, 1986; Finkelhor and Dziuba-Leatherman, 1994) causing tremendous difficulties for investigators and adjudicators.

Corresponding to the need for new techniques, a multitude of studies on the nonverbal correlates of deception have appeared (Ekman, 1992; DePaulo, 1992) but comparatively very few on verbal correlates. Yet, some have argued that verbal behaviors are more reliable indices of deception than nonverbal behaviors (e.g., Bauchner, Kaplan and Miller, 1980; de-Turck and Miller, 1985; Hocking et al., 1979; Zuckerman, Depaulo and Rosenthal, 1981). In the Zuckerman et al. (1981) study it was determined that the accuracy of detecting deceptions from verbal content was higher than from any other channel (facial expressions, body language, etc.), spurring the authors to conclude that this evidence "is in direct contradiction to the belief that nonverbal channels are more likely to disclose deception than are verbal cues", (Zuckerman and Driver, 1985, p. 130). Also, many interrogators appear to have "blind faith" in nonverbal clues (Gudjonsson, 1992), even though they are often unreliable indicators of deception (Ekman, 1992). McCormack (1992) lamented that a "primitive view" of deceptive interaction exists partly because of the myopic focus on nonverbal cues, arguing that researchers must examine the content of the messages to effectively detect deception.

In general, the statements of suspects elicited during the interrogation are quite amenable to analysis. A usual tactic is to solicit a suspect's uninterrupted narrative account of the crime being investigated or his/her alibi (Buckwalter, 1983), regardless of apparent fabrications.
This statement is audio- or video-taped and subsequently transcribed creating an ideal document for credibility assessment. It is likely that in many cases a non-admitting guilty suspect will provide either a narrative relating a false alibi or one relating a distorted version of the circumstances of the crime, conducive to systematic analysis. Statement analysis may have less applicability with statements of denial (e.g., "I know nothing about this crime."), total memory loss (e.g., "I was so drunk I can't remember what happened"), or obviously cases in which the suspect refuses to make a statement (e.g., Moston and Stephenson, 1992), found that 16% of the suspects in their sample utilized this option.

Although the idea for this paper was galvanized from applied issues relating to interrogations, it is crucial to describe the theoretical approaches on which it is founded. To this point, there has been little integration of the theoretical perspectives in this area. Two theoretical approaches will be emphasized: (1) Memory-based approaches describing how accurate and inaccurate memory reports can be distinguished and (2) Deception-based approaches describing how deceptive and truthful statements can be distinguished.

1. PERSPECTIVES ON MEMORY ACCURACY

a. The Undeutsch Hypothesis

Undenstreich, a German psychologist, was instrumental in the genesis of a systematic procedure for assessing child witness reports known as Statement Validity Analysis (SVA). SVA's theoretical basis—the "Undeutsch Hypothesis"—asserts that accounts based on memory for an experienced event differ qualitatively and quantitatively from fictitious accounts. For example, it is posited that memory reports for a true event contain a richness of detail not present in inaccurate accounts (Undenstreich, 1967). A high degree of detail is a good indication of credibility in that it is difficult to embellish a false testimony with many details because they do not exist in memory (Arntzen, 1983). As well, witnesses may not provide a multitude of details because of the increased difficulty of maintaining the story's consistency. A report is considered detailed if it contains the exact description of the place, vivid person descriptions from different aspects, and a step-by-step description of the sequence of events (Steller and Kohnken, 1989).

SVA has been formalized by an international group of researchers (Undenstreich, Steller, Kohnken, Raskin, Esplin and Yuille; see Raskin and Yuille, 1989). The procedure consists of two components: (1) criteria-based content analysis in which a statement is examined for evidence of features associated with actual experiences (2) examination of other evidence in the case. Nineteen criteria are used to evaluate the credibility of the statement (e.g., quantity of details, logical structure, accounts of subjective mental state (Raskin and Yuille, 1989)).

Scientific evaluations have tested the efficacy of SVA with children's statements yielding very positive results. Yuille (1988) had children of ages six and eight years prepare one false and one truthful story with two days of preparation time. SVA correctly classified 74.4% of the false stories and 90.9% of the true accounts. Steller, Wellershau and Wolf (1988; cited in Steller and Boychuk, 1992) conducted a study aimed at increasing validity. Children were provided a list of hypothetical experiences containing aspects of direct involvement, loss of control, and negative emotional tone (e.g., having dental work done) and then asked to come
up with a true and false story about one of these events. The true and false accounts were successfully distinguished by nine of the SVA criteria. Unfortunately, there has been a dearth of studies addressing the effectiveness of SVA with adult witnesses. It is, of course, possible that SVA is context-dependent and its proper niche is solely with children’s accounts. Nonetheless, the two studies evaluating its utility with adults have reported moderately high rates of classification accuracy. Landry et al. (1992) asked participants to judge the truthfulness of the videotaped statements of twelve adults; six were true and six related an invented traumatic personal experience. For trained subjects, ten of the fourteen criteria yielded significant differences in the predicted direction (reproduction of conversation, spontaneous corrections, and self-doubt were particularly effective), offering compelling evidence for SVA’s potential with adults. Also, subjects trained in SVA outperformed the untrained subjects in detecting deception. Zapariniuk, Yuille, and Taylor (1993) had one group of participants view a videotaped event and then recalled it as if it has been witnessed. SVA distinguished the truthful and deceptive statements with a “reasonably” high degree of accuracy (mean hit rate of 76%).

Despite its apparent utility with witnesses and victims (children and adults), it is difficult to evaluate the efficacy of SVA with criminal suspects based on this research. Verbal clues associated specifically with committing an offense, planning the lie, and being motivated to escape likely detection did not emerge. Hence, deception leakage in their language may have been minimal. The only research addressing these factors was a recent investigation by Porter (1994). To increase validity, participants were falsely informed that they would be participating in a study addressing “security effectiveness”. They then either committed a theft from a specified office “to test the effectiveness of a new security guard” (they were led to believe that an un-uniformed guard was patrolling the halls because of recent thefts) or carried out a similar but innocuous task in the same location. They were then asked to provide a: (1) truthful alibi (2) partially deceptive account (3) completely false alibi or (4) truthful confession to “an interviewer also hired for the purpose of investigating thefts”. To increase motivation, honest and dishonest participants were offered a monetary incentive for convincing the interrogator of their veracity and all participants were provided fifteen minutes to prepare their accounts. A profile of three SVA variables emerged which strongly differentiated the truthful and deceptive accounts. Deceptive accounts contained many fewer details (although not fewer words) and were rated as less coherent than the truthful reports describing essentially the same event. As well, deceptive suspects less frequently admitted lacking memory for some aspect of the crime. A discriminant analysis indicated that these three criteria successfully classified 76.7% of the truthful and 80.0% of the deceptive reports.

Despite Porter’s (1994) findings, the issue of account length and degree of detail is not completely resolved. Some authors (e.g., deTurck and Miller, 1985; Knapp, Hart, and Dennis, 1974; Kraut, 1976; Mehrabian, 1971) contend that liars tend to be more laconic than people being truthful (i.e., fewer details), compatible with the Undeutsch Hypothesis. Macdonald and Michaud (1987) argued that “the suspect who gives only brief answers is almost certainly lying through concealment of information” (p. 36). Knapp et al. (1974), in an extensive examination of deceptive language, found that deceivers used fewer words, fewer different words, fewer past tense verbs, more “other” references (they, them, etc.), fewer group references (we, our, etc.), and fewer self-references. In contrast, Harrison, Halek,
Raney, and Fritz (1978) reported that deceivers in their study used more words than truthful subjects, particularly in the presence of an interviewer. Similarly, Arcaro (1990) and Macdonald et al. (1987) asserted that an excessively detailed alibi is indicative of deception because an innocent person would not recall insignificant activities coinciding with the time of the offense. In this view, excessive detail is a clue to a rehearsed response. Zuckerman et al. (1985) conducted a meta-analysis examining visual behaviors, linguistic behaviors, and verbal behaviors that had been previously cited in the deception literature. Response length was significantly negatively correlated with deception. The behaviors most strongly associated with deception (p. < .001) included pupil dilation and adaptors (visual), speech hesitations (linguistic), immediacy (–) and negative statements (verbal). Other relationships between verbal clues and deception included speech errors, pitch, irrelevant information, and leveling (overgeneralized statements indicated by “every”, “all”, “none”, etc.).

One of the premier studies to examine cues from multiple behavioral indices addressed the issue of length. DeTurck et al. (1985) compared the videotaped accounts of deceptive subjects who had been induced by a confederate to cheat on a task (to win a prize for performance) to those who had been engaged in a task-related discussion with the confederate. Five nonverbal and four verbal (number of speech errors, number of pauses, length of response latency, and message duration) cues to deception were examined. Results indicated that six cues (adaptors, hand gestures, pauses, speech errors, response latency, and message duration [–]) were significantly associated with deception. The authors argued that these findings support the assertion that verbal cues are more important than nonverbal cues in detecting deception. Stiff and Miller (1986), employing a similar methodology, found that deceptive statements were predicted by verbal content (how plausible, definite, clear, and concise the response was), statements of personal responsibility, self-references, and number of words. In summary, most studies addressing the account length/veracity relationship have found a positive correlation lending support to Undeutsch's original claim.

One of the first published formal applications of statement analysis to an actual crime considered the Undeutsch Hypothesis (Yuille and Cutshall, 1989). These authors examined the 1972 case of Jeffrey MacDonald who was found guilty of brutally murdering his family. MacDonald maintained that “drug-crazed hippies” had entered his home and committed the offenses. One Helena Stoeckley corroborated this account, claiming for years that she was among the intruders of whom he spoke. Yuille and Cutshall examined Stoeckley’s statements and concluded that “the logical consistency of her statements, particularly the relationship of her account to the general pattern of the murders, the spontaneous nature of her description, and the wealth of details in her statements provide evidence which supports the credibility of Helena Stoeckley’s account (p. 188).

b. Reality Monitoring

A seminal paper by Johnson and Raye (1981) addressed how memories for past perceptions of actual events can be distinguished from memories for fictitious events, using a model termed “Reality Monitoring.” This model posits that perceptual memories are associated with a higher level of external sensorial information (e.g., “It was a large cedar home”) whereas self-generated memories are the result of creative cognitive processes and are thus
associated with more internally-generated cognitive details and subjective idiosyncratic information ("I remember seeing the home and thinking how lovely cedar homes are"). Schooker, Gerhard, and Loftus (1986) demonstrated that memory descriptions differ in ways congruous with this theory. Some participants were induced to recall an object not actually witnessed (employing Loftus' postevent misinformation paradigm). The genuine memories (in written form) contained more references to attributes of the memory stimulus, fewer references to cognitive processes, fewer "hedges" (e.g., "It seems to me" or "I believe"), and fewer words. These results were replicated in a second study in which more critical memory items were employed and spoken than written accounts were elicited (Schooker, Clark, and Loftus, 1988). Nonetheless, as pointed out by Leippe, Manion, and Romanczyk (1992), the memory stimuli used in these studies were noncomplex (e.g., a stop sign) and more clues may have emerged in accounts concerning an event of higher complexity. To address this possibility, they staged an interactive, elaborate event in which participants were given a "skin sensitivity test" including touching and conversation. When the memory reports were divided into high and low accuracy levels, it was found that the accurate accounts were delivered more confidently, contained less instances of verbal hedging, less admissions of memory failures (e.g., "I don't know"), and were lengthier. As well, people judging the accuracy of the accounts generally overused confidence and undervalued the other cues in determining the accuracy of the accounts. The authors concluded that "with further research and insight, it may be possible to train people to look for them (cues) and so become better judges of memory reports" (p. 195).

2. PERSPECTIVES ON DECEPTION

a. Emotional-Motivational Approaches

Inability to lie is far from being love of truth. Be on your guard. (Nietzsche's Zarathustra)

Presumably, lying is a difficult undertaking for most people, especially when the consequences are of considerable magnitude. As noted by Simpson (1992), a liar acts self-consciously against a moral convention. Accordingly, emotional and motivational factors have been implicated as being critical in detecting deception in the interrogation (see Ben-Shakhhar and Furedy, 1992). According to the "punishment mechanism" theory, fear of deception failure leads to a physiological response associated with anxiety (Ben-Shakhur et al., 1992). In an interrogation, a suspect with guilty knowledge is expected to exhibit high arousal due to this fear, leading to discernible changes in verbal behaviors. Nonetheless, as pointed out by Inbau, Reid, and Buckley (1986), signs of nervousness in both guilty and innocent suspects may be independent of veracity (e.g., concern that police and family will discover other crimes; concern for false conviction). However, they argue that guilty suspects will experience higher levels of anxiety because of their knowledge of the crime.

Other affective-based hypotheses include the "conditioned response theory", postulating that lying produces autonomic reactions because the critical questions are associated with negative experiences (i.e., past lying was linked with aversive stimuli) and "conflict theory" (Kohnken, 1985) positing that observable reactions result from the conflicting needs to lie (situational demand) and tell the truth (societal or familial demand).
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Obviously, the impetus is high for a guilty suspect to successfully deceive his/her inquisitor. In considering motivational considerations in deception detection, Ekman and Friesen (1969) asserted that it is most difficult to lie successfully when the consequences are great (and hence the greater the likelihood of detection (Davis, 1961)). More recently, DePaulo and Kirkendol (1989) have referred to this phenomenon as the “motivational impairment effect”. Physiological research has demonstrated an association between motivation and detection rates (e.g., Gustafson and Orne, 1963; Elaad and Ben-Shakhar, 1989). When the ramifications are this significant, deception clues, or “leakage”, will likely be emitted through speech, voice, body, and face (Ekman, 1992) despite the liar’s attempts to conceal emotional portrayals. Motivational factors influence people to “make verbal mistakes that can provide both leakage and deception clues” (Ekman, 1992, p. 85).

One aspect of Zuckerman et al.’s (1985) study concerned motivation for lying. Highly motivated deception was associated with response length (–), speech rate (–), speech errors, speech hesitations, pitch, negative statements, self-references (–), and leveling more so than unmotivated deception. The criteria related to language proved particularly useful in detecting deception under increased motivation. The authors concluded:

It appears that although the content of the speech may be quite controllable, its semantic structure may be as leaky as the body and/or tone of voice. Consequently, the search for cues to deception must focus on both verbal and nonverbal behaviors (Zuckerman et al., 1985, p. 144).

Research has indicated that the experience of lying may result in an elevated frequency of speech errors, possibly related to the motivational impairment effect. Comber and Canter (1983) conducted a study to determine whether hoax and truthful fire alarm calls could be distinguished on the basis of their verbal characteristics. Eight malicious and eight non-malicious calls were compared on the number of speech errors occurring in the call (number of times the operator and caller spoke simultaneously, filled pauses [“umm”, “ahh”] in the caller’s speech, questions asked by the caller, and false starts in the operator’s and caller’s speech). Although no single variable significantly differentiated the calls (probably due to the small sample), differences were in the predicted direction for all criteria leading the authors to conclude that “it was possible to differentiate the two types of calls based on the overall configuration of speech behavior within the call” (p. 460).

b. Cognitive Approaches

For words, like NATURE, half reveal
And half conceal the soul within. (Alfred Lord Tennyson)

The interrogation may be viewed as a context in which deceptive information is employed as an adaptive response to a dangerous situation (McCormack, 1992). People are often confronted with interactions in which the competing goals of conveying information and minimizing the damage which might result from the information are operating. Thus, people present deceptive messages in ways fostering control of dangerous information. Building on this premise, McCormack (1992) formulated “Information Manipulation Theory” (IMT), postulating that deceptive messages covertly violate principles guiding conversations. IMT suggests that although deceptive messages are limitless, the information in them varies in systematic, identifiable ways. Given that conversational interactants possess expectations of quantity, quality, manner, and relevance of the information presented, it is likely that deceiv-
ers violate these expectations. In the interrogation, IMT would predict that the information presented by a guilty suspect would be distinctive because of the “danger” sensed by the deceiver. Deceptive suspects are unlikely to fulfill the informational requirements of the interrogation, provide information that is irrelevant to the central topic, and provide information in a less coherent fashion.

Others have also contended that information processing and attentional strategies are important considerations in a deception detection task. Waid and Orme (1981) suggested that detection may depend on how the suspect processes the questions presented in the interview. Suspects may avoid detection by responding mechanically to these stimuli without “deeply” processing them (Craik and Lockhart, 1972), circumventing the problem of anxiety by superficial encoding. One counteractive interviewing strategy involves the use of interrogative probes (e.g., “Come on. It is obvious that you are lying to me. What really happened?”) and other negative feedback (Gudjonsson and Clark, 1986). Verbal cues may be differentially useful for credibility assessment in the context of a confrontive, negative interrogation (cf. Stiff and Miller, 1986).

The superficial-encoding strategy may be made more effective by planning its implementation prior to the interview. As noted by DePaulo, Lanier, and Davis (1983), lies in the laboratory are usually characterized by low levels of planning, yielding findings that may not be forensically valid. A guilty person usually has the opportunity to prepare for an interrogation or courtroom testimony by inventing and rehearsing a story (Carpenter, 1990). He/she has anticipated lying and, as the critical questions are asked, provides lies that are rehearsed and that he/she is mentally prepared to tell. Additionally, as noted by Buckwalter (1983), fabrication is predominant in the daily lives of many criminals so they may be quite proficient at fabricating information.

O’Hair, Cody, and McLaughlin (1981) investigated both prepared and spontaneous lies. Subjects who had anticipated lying showed shorter response latencies and less postural shifting than truth-tellers. Secondly, the prepared liars showed higher head-nodding rates, lower laugh/smile rates, and shorter messages. This is consistent with Zuckerman et al. (1981) who argued that efforts to conceal deceptions by controlled restraint of behavior can be counterproductive because it now appears overcontrolled and unnatural. Additionally, not all behavior can be controlled equally resulting in leakage from different communication channels.

Alonso-Quecuty (1990) showed subjects a film depicting an assault on a woman during an abortion dispute. Subjects provided both an honest account (the aggressor was convicted) and one in which information was falsified (the man was acquitted). Half of the subjects provided their accounts immediately following the film while the others were given ten minutes to prepare their accounts. The falsified accounts contained less words in the immediate statements but more words in the delayed statements indicating that “the length of the statements may be a good detector of deception when the individual has disposed of the necessary time to elaborate them”.

Kohnken (1985) investigated the utility of an information processing approach with witnesses. He asserted that providing deceptive testimony represents a more difficult cognitive task than giving an honest account and that with cognitive load “symptom substitutions” should appear. Based on previous studies he concluded that cognitive load can result in an
increase in speech hesitations (cf. Macdonald and Michaud, 1987), a reduction of the informational value of applied words, and increased repetitions. To test this model, Kohnken devised an experiment in which subjects viewed a film depicting a theft. Participants were divided into a truthful condition, a deception condition (instructed to implicate the wrong person as the thief and offered an LP record for successful lying), or a hearsay condition (heard a verbal report of the film and were asked to convince the interviewer that they had viewed it; if successful they would receive an LP record). Thirteen criteria were examined including speech rate, filled pauses, self-reflections, self-corrections, type token ratio (TTR; see below), and mean word length. Results indicated that the groups could be reliably distinguished by most criteria (the TTR exhibited the highest discriminating power). Thus, an information processing approach appears to be appropriate in investigating deception in witnesses.

Another cognitive approach to statement analysis considers the complexity of the verbal responses. Osgood (1960) argued that "behavior under increased drive, including encoding behavior, should become more stereotyped—the alternatives selected at all choice points should tend to be the most familiar, the most practiced, and the most expected." Accordingly, a person providing testimony under greater motivation to appear credible should display low lexical diversity (LD) (Hollien, 1990). LD is usually measured by the "type-token ratio" (TTR). The TTR is obtained by dividing the number of distinct words (types) by the total number of words (tokens) in statements or segments of statements. A high TTR indicates a broad vocabulary whereas a low one reflects a communicator's preference for stereotypic language.

Others have argued that deceivers show higher TTRs than those of people uttering truthful statements. Carpenter (1990) provided several case studies in which the suspect's TTR had increased from his/her mean TTR at points in the account later proven deceptive. As Carpenter notes, knowledge of the crime allows guilty suspects to know which of their statements are false or self-incriminating and must be phrased with greater caution during interrogation or courtroom testimony. The additional time needed to phrase such statements results in a higher frequency of comparatively uncommon words occurring in particular components of a statement. Similarly, when hidden knowledge of events constrains a suspect at some points during testimony, the additional time needed to formulate those sentences results in more different words, relatively uncommon to the individual, to be spoken.

Thus far, however, there is insufficient evidence to conclude that LD has utility in detecting deception in criminal cases. Studies have supported the assertion that statements made by people experiencing apprehension or caution about possible adverse reactions from listeners have higher TTRs than those with no threat (e.g., Dulaney, 1982). Consequently, it is not known whether a high TTR in an interrogation is necessarily indicative of deception; it could result from anxiety or motivation unrelated to guilt (Inbau, Reid, and Buckley, 1986; Porter, 1994). It is possible that examining TTR variations within a suspect's statement could reveal deception. Dulaney (1982) placed participants in a situation designed to elicit truthful and untruthful statements. He found that when falsifying information participants used fewer words, fewer unique words and larger TTRs, smaller perceptual-cognitive activity measures, and fewer past tense verb forms.
Other forensic applications of LD include analysing multiple messages to determine whether they have a common source and to specify communication origin (e.g., confessional evidence) in a process referred to as “stylistometry” (e.g., Arens and Meadow, 1957; Gudjonsson, 1992; Miron, 1984; Morton, 1978) or “cumus analysis” (Cantor, 1992; Morton and Farrington, 1992). This method has also been used in attempts to determine whether threats were genuine or hoaxes. For example, it was successfully predicted that the Symbionese Army who kidnapped Patty Hearst would die in a suicidal confrontation with law enforcement officers (Miron and Pasquale, 1978).

SUMMARY AND FUTURE DIRECTIONS

From error to error one discovers the entire truth. (Sigmund Freud)

In the past, there has been a marked over-reliance on nonverbal clues to deception by forensic researchers and practitioners (McCormack, 1992), with a virtual disregard for the possible utility of verbal clues. This is especially problematic given that in a considerable proportion of forensic cases the sole evidence available to investigators is the words of the complainant and the accused. The situation has been improving with the advancement of SVA with children and some empirical research on verbal clues with adults in the mid-1980s, most notably studies by Zuckerman (e.g., Zuckerman et al., 1981, 1985) and Miller and colleagues (DeTurck et al., 1985, 1986). Nonetheless, there have been few previous attempts to integrate the various theoretical perspectives in the area or to devise research with the issue of external validity in mind (Miller and Stiff, 1993).

This paper formulated the general hypothesis that systematic differences exist between the accounts of honest and deceptive suspects in the interrogation context. One theoretical bent considered in this study was founded on memory accuracy. More specifically, the Un-Deutsch Hypothesis states that accurate memory accounts (reports based on true experience) will differ qualitatively and quantitatively from inaccurate memory accounts (reports based on events not actually experienced). Reality Monitoring posits that accurate (“perceptual”) memory accounts contain more external sensorial descriptive information whereas inaccurate accounts contain more references to cognitive processes and subjective information (and thus more self-references, verbal “hedges”, and references to cognitive processes). The second major theoretical perspective considered in this paper underscores the betrayal of deception in language due to affective and cognitive factors. Emotional-motivational approaches posit that fear of detection results in arousals and associated verbal deception “leakage”. Cognitive approaches are founded on the tenet that deceptive accounts are distinctive quantitatively and qualitatively because of rehearsal, information processing strategies, and cognitive load.

As noted by several forensic researchers (e.g., Davies, 1990; Yuille, Davies, Gibling, Marxsen, and Porter, in press; Porter, Yuille, and Bent, in press; Yuille, 1993), only when we have converging results from diverse methods of inquiry should we generalize to forensic contexts. Much further inquiry is essential especially field studies. Cross-validation studies are crucial with this type of applied research. In certain criminal cases it is possible to determine with a fair degree of certainty whether a suspect had been lying or telling the truth during an interrogation (e.g., in those cases in which the suspect subsequently confesses or
another suspect confesses). As noted by Miller and Stiff (1993) law enforcement agencies frequently record investigative interviews with suspects, witnesses and victims as well as pre-polygraph and polygraph examinations, providing fertile ground for researchers interested in deception.

To this point, it is difficult to apply the information presented here in a particular case. Within-subjects experimental designs are essential to examine whether verbal characteristics change as a function of veracity within individual suspects. If so, one way to utilize this knowledge would be to subtly ask a suspect to relate an event other than the crime being investigated during the interrogation. Patterns within this account would then be compared to those in the account relating to the crime (e.g., an alibi). Similarly, there is a need for establishing the base rates of any verbal characteristics examined for credibility assessment purposes (e.g., in the forensic context). Also, virtually no research has addressed the base rate of lying in the criminal interrogation. This knowledge is important for practitioners of credibility assessment in any applied context.

As previously mentioned, verbal clues to deception may be differentially useful across contexts. As well, there may be a host of verbal clues to deception yet to be examined empirically. The next formidable but attainable step for researchers in credibility assessment is to seek which verbal clues are effective with whom and under which circumstances.

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References


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