The Highs and Lows of Visual Salience and Status:
Influential Factors in Source Monitoring Decisions

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This dissertation titled
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Influential Factors in Source Monitoring Decisions

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ABSTRACT

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The current studies extended existing research on source monitoring decisions, the process of attributing the introduction of information to a given source (Johnson, 2006), by demonstrating visual salience and status shift source attributions across three studies. The incremental impact of each factor was identified through the use of Batchelder and Reifer’s multinomial model for source monitoring (1990), which made it possible to demonstrate when memory processes and guessing biases were affected by each of these factors. Finally, this research looked at the relationship between visual salience and source monitoring attributions in an applied setting: videotaped police interrogations.

In the pilot study, participants were presented a videotaped interaction in one of three camera formats, manipulating the visual salience of the two actors. This led to corresponding shifts in source guessing. Thus, with simple stimuli, visual salience biases source guessing such that source attributions are higher for the most visually salient actor.

The second study systematically manipulated visual salience, status, and influence (an additional factor related to status) to demonstrate the additive effect of these variables. Visual salience, status, and influence were shown to primarily impact guessing biases (e.g., source guessing and recognition guessing). However, when these cues are combined in the right manner, memory processes can also be affected. Specifically,
words presented by a visually salient, high status individual with greater influence will be recognized more often.

A videotaped interrogation was shown from three different camera perspectives within the third study. Within this context, where the detective is an individual who has much more influence and disproportionately higher status, the likelihood of recognizing words presented by the detective were increased; together high influence and status overwhelmed the effect of visual salience on source guessing – meaning that observers are likely to guess that the detective is the source of introduced information regardless of visual salience. Finally, the relationship between source monitoring and perceptions of voluntariness and guilt were explored. Discussion considered the effect of preexisting schemas about interrogations, which likely exert independent influence on participant responses, and future research directions.

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# TABLE OF CONTENTS

Abstract ............................................................................................................................... 3

Acknowledgments ............................................................................................................... 5

List of Tables ...................................................................................................................... 9

List of Figures ................................................................................................................... 10

Overview ........................................................................................................................... 11

Source Monitoring ........................................................................................................... 12
  The Source Monitoring Decision Process ................................................................. 12
  Internal and External Sources ................................................................................... 17
  Discriminating Between External Sources ............................................................... 19

Illusory Causation ......................................................................................................... 24
  The Mechanisms Underlying Illusory Causation ..................................................... 27

Camera Perspective Bias ............................................................................................... 32
  Stage 1 ....................................................................................................................... 33
  Stage 2 ....................................................................................................................... 40

Police Interviews and Interrogations ............................................................................ 48
  Interrogation Techniques .......................................................................................... 49

Schemas, Status, and Source ......................................................................................... 52
  Status Cues ................................................................................................................ 54

Multinomial Modeling .................................................................................................. 56

Current Research ............................................................................................................... 62

Overview of Pilot Study ................................................................................................ 64
  Method ...................................................................................................................... 66
  Materials ............................................................................................................... 66
  Video ..................................................................................................................... 66
  Origin-of-item test ............................................................................................... 66

Participants ..................................................................................................................... 66

Overview of Study 1 ..................................................................................................... 74

Status Pilot ....................................................................................................................... 76
  Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger
  For The Actor Who Was Made Visually Salient .................................................. 77
  Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger
  For The Actor With Higher Status ........................................................................ 77
  Hypothesis Three: Source Discrimination Parameters (d2) Would Be Larger For
  The Most Influential Actor ............................................................................... 77
Hypothesis Four: Higher Actor Status Would Be Associated With a Higher Source Discrimination Parameter Value (d₁ And d₂) ........................................... 78
Hypothesis Five: Correct Detection Of “Old” Words (D₁ And D₂) Would Not Significantly Differ Across Status, Actor, or Camera Perspective ....................... 78
Method ...................................................................................................................... 78
Participants ................................................................................................................ 78
Design ....................................................................................................................... 78
Materials ............................................................................................................... 79
  Video ................................................................................................................. 79
  Status Manipulation .................................................................................. 79
Procedure .................................................................................................................. 80
Results ....................................................................................................................... 80
Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger For The Actor Who Was Made Visually Salient .................................................. 82
Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Actor With Higher Status ........................................................................ 83
Hypothesis Three: Source Discrimination Parameters (d₂) Would Be Larger For The Most Influential Actor ................................................................................... 84
Hypothesis Four: Higher Actor Status Would Be Associated With a Higher Source Discrimination Parameter Value (d₁ And d₂) ........................................... 84
Hypothesis Five: Correct Detection Of “Old” Words (D₁ And D₂) Would Not Differ Significantly Across Status, Actor, or Camera Perspective ....................... 84
Discussion ................................................................................................................. 85
Overview of Study 2 ..................................................................................................... 87
Hypotheses ................................................................................................................ 88
Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger For The Actor Who Was Made Visually Salient .................................................. 88
Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Detective ................................................................................................. 89
Hypothesis Three: The Detective’s Higher Status Would Lead To A Higher Source Discrimination Parameter Value (d₁).......................................................... 89
Hypothesis Four: Correct Detection Of “Old” Words (D₁ And D₂) Would Not Differ Significantly Across Status, Actor, or Camera Perspective ....................... 89
Hypothesis Five: Higher Visual Salience, Manipulated by Camera Format, Would Elicit Higher Voluntariness Judgments ................................................................. 90
Hypothesis Six: Total Number of Attributions Toward the Suspect Would Mediate the Influence of Camera Format on Voluntariness Judgments............ 90
Method ...................................................................................................................... 90
Participants ................................................................................................................ 90
Design ....................................................................................................................... 91
Materials ............................................................................................................... 91
  Simulated confession .................................................................................... 91
  Origin-of-item test ............................................................................................ 91
  Voluntariness judgments ................................................................................. 91
Procedure .................................................................................................................. 92
Results ....................................................................................................................... 92
Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger For The Actor Who Was Made Visually Salient .................................................. 94
Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Detective ................................................................................................. 94
Hypothesis Three: The Detective’s Higher Status Would Lead To A Higher Source Discrimination Parameter Value (d1).......................................................... 95
Hypothesis Four: Correct Detection Of “Old” Words (D1 And D2) Would Not Differ Significantly Across Status, Actor, or Camera Perspective ............... 95
Hypothesis Five: Higher Visual Salience, Manipulated by Camera Format, Would Elicit Higher Voluntariness Judgments ......................................................... 96
Hypothesis Six: Total Number of Attributions Toward the Suspect Would Mediate the Influence of Camera Format on Voluntariness Judgments............. 96
Exploratory Analyses .......................................................................................... 97
Discussion .......................................................................................................... 98
General Discussion ............................................................................................... 101
Fitting the Three Models Together .................................................................... 101
Limitations ........................................................................................................... 106
Issues Related to Participant Demographics ...................................................... 106
External Validity .................................................................................................. 106
Relevant Schemas ............................................................................................... 107
Potential Order Effects ....................................................................................... 107
Future Directions ............................................................................................... 108
Source Monitoring .............................................................................................. 108
Police Interrogations ........................................................................................... 108
Concluding Remarks .......................................................................................... 109
References .......................................................................................................... 110
Appendix A: Confession Questionnaire ............................................................... 135
LIST OF TABLES

Table 1.1: Recognition by Camera Perspective .............................................................. 124
Table 1.2: Total Source Attributions .............................................................................. 125
Table 1.3: Source Monitoring Ratio ............................................................................... 126
Table 1.4: Correctly Detected “Old” Words Presented By Actor A ............................... 127
Table 1.5: Pilot Study Parameter Table .......................................................................... 128
Table 2.1: Study 1 Parameter Table ................................................................................ 129
Table 3.1: Parameter Confidence Intervals ..................................................................... 130
Table 3.2: Study 2 Parameter Table ................................................................................ 131
Table 3.3: Voluntariness Index ....................................................................................... 132
Table 3.4: Total Number of Source Monitoring Attribution .......................................... 133
Table 3.5: Correlations with Detective Source Monitoring Attributions ....................... 134
LIST OF FIGURES

Page

Figure 1: Source Monitoring Decision Making Trees and Parameters.......................... 123
OVERVIEW

Consider the following scenario. You observe an interaction between two of your colleagues. Later you relate this conversation to someone else, attributing the introduction of information to one of the aforementioned colleagues. How you come to the decision that specific information was first introduced by one colleague and not the other is an example of source monitoring. Many different factors will influence your source decision, and the source monitoring model outlines many of these relevant factors (Ray & Johnson, 1980). However, other aspects of the initial interaction may have influenced your decision. For instance, was one of your colleagues more visually salient? Could the fact that one of your colleagues was tenured and the other a recently hired assistant faculty have been influential when attributing the introduction of information?

The current research investigated the influence of two different factors on source monitoring decisions. The unique contribution of visual salience on source monitoring attributions was examined. Additionally, this research includes preliminary exploration of the influence of status cues on source attributions. Ultimately, this research seeks to demonstrate the importance of these factors on source monitoring decisions by embedding them into the context of videotaped police interrogations. This will tie the source monitoring literature to research on the camera perspective bias, which has repeatedly demonstrated that the camera angle from which a videotaped criminal confession is presented influences observers’ judgments of confession voluntariness (Lassiter, Ratcliff, Ware, & Irvin, 2006). In this context, it was possible to examine the influence of source decisions on perceptions of confession voluntariness and likelihood-of-suspect-guilt.
Thus, the current proposal extends knowledge in the domain of source monitoring by empirically testing the influence of two factors previously unidentified as influential in source monitoring decisions. Additionally, the research on illusory causation, the theoretical foundation of visual salience effects, and status cues has been expanded. Finally, demonstrating the influence of these factors on judgments made from videotaped police interrogations anchors these findings in an applied realm and broadens the importance of the camera perspective bias.

Source Monitoring

Source monitoring is the process of attributing the origination of a memory to a particular source (Johnson, Hashtroudi, & Lindsay, 1993; Johnson, De Leonardis, Hashtroudi, & Ferguson, 1995; Johnson & Raye, 1981). The term source refers to a set of characteristics specifying the conditions under which a memory was first created (Johnson et al., 1993; Lindsay, Johnson, & Kwon, 1991). Memories can be formed either through the perception of external sources or through mental operations such as thoughts and fantasies (Johnson & Raye, 1981; Lindsay et al., 1991). A fundamental assertion of source monitoring is that people do not retrieve memory sources directly; instead, identifying the source of a memory involves a decision process that occurs while remembering (for review see Johnson et al., 1993; Lindsay & Johnson, 1989).

The Source Monitoring Decision Process

This decision process is largely based on the availability of source cues and the decision criteria employed (Dodson & Johnson, 1993; Johnson, 1988; Johnson et al.,
Johnson and her colleagues (Johnson, 1988; Johnson & Raye, 1981) have created a source monitoring framework based on the different cues relevant to source monitoring. This framework was first established in investigations of how different cues are utilized in reality monitoring (Raye & Johnson, 1980; Johnson & Raye, 1981).

Reality monitoring, a form of source monitoring, requires discriminating between internal and external sources (Johnson, 1988; Johnson et al., 1993; Johnson & Raye, 1981; Kahan & Johnson, 1990). Internally generated memories, which are subjectively no less real than perceptually encoded memories, are created through re-representations (thinking about or remembering a perceptual experience), cotemporal thoughts (the elaborative thoughts associated with an experience), and fantasy (combining thoughts and memories in novel ways) (Johnson, 1988; Johnson & Raye, 1981; Raye & Johnson, 1980). In contrast, perceptual memories, also called external memories, are derived from perceptually encoded information.

Different cues are used to help distinguish between internal and external sources (Johnson, 1988; Johnson, Nolde, & De Leonardis, 1996; Johnson & Raye, 1981; Raye & Johnson, 1980). For instance, memories from external sources tend to have a greater number of cues in the following categories: spatial and temporal information; sensory information, such as sound or smell; semantic details, such as specific information and event order; and affective content (Dodson & Johnson, 1993; Ferguson, Hashtroudi, & Johnson, 1992; Johnson et al., 1993). Concurrently, internally generated memories are purported to have more operational, or cognitive, attributions. An example of an operational attribution would be, “I thought ‘water’ and that reminded me of the beach.”
Source monitoring decisions are made frequently, and often involve little
deliberate thought (Gordon, Franklin, & Beck, 2005; Johnson, 2006; Johnson et al., 1995;
Johnson et al., 1993). Essentially, people have been found to capitalize on differences in
cue categories and cue volume within these categories. Often a higher number of cues
falling into the operational attributions category would be used in a source monitoring
decision to indicate that a source is internal, whereas higher numbers of cues falling into
one of the other four categories would be indicative of an external source (Johnson &

The ease of cue recall and the categories for which accessible cues and associated
memories fall into usually lead to quick and relatively effortless decisions about source
(Johnson et al., 1993; Lindsay et al., 1991). However, in addition to the cue categories
available for a memory, the decision criteria put in place can shift source attributions
(Dodson & Johnson, 1993; Johnson et al., 1993; Lindsay & Johnson, 1989). Factors
relevant to decision criteria include availability of cognitive resources, the purpose for
making a source attribution, the biases present, relevant goals, the confidence associated
with the memory and relevant source attribution, the weighting criteria assigned to
available cues, as well as the criteria adopted for plausibility (Johnson et al., 1993). For
instance, if making a correct source monitoring decision is crucially important, as it is in
the case of eyewitness identification, more stringent criteria will be put into place. The
decision will likely be effortful and systematic, rather than relying on familiarity and
other heuristic processes, as long as cognitive resources and time are available both at
encoding and retrieval (Jacoby, Woloshyn, & Kelley, 1989; Johnson et al., 1993;
Zaragoza & Lane, 1994). Thus, the decision making process itself is described as including both heuristic and systematic components:

In the source-monitoring framework, both heuristic and systematic processes require setting criteria for making a judgment and procedures for comparing activated information with criteria. For example, heuristic judgments involve criteria such as “if the familiarity level is above $X$, the event probably happened,” or “if the amount of perceptual detail exceeds $X$, the event was probably perceived.” Criteria for systematic processes might include, for example, limits on the degree of inconsistency between the known and remembered that will be acceptable. (Johnson et al., 1993, p. 5).

One way to set decision criteria would be to weight different cues to reflect their specific relevance, if the spatial location of a source was particularly relevant than that cue would be weighted more heavily (Ferguson et al., 1992). Additionally, plausibility corrections help to determine context and confidence in source identification (Johnson, 2006; Johnson et al., 1993; Johnson et al., 1996). For example, it might seem likely Mike was the source of a statement based on what is previously known about Mike, but plausibility of this occurrence is rated low – it is known that Mike was out of town at the time. However, had the plausibility criteria been less stringent, this correction may not have been made.

Though creating stringent criteria and engaging in systematic decision making will increase successful source identification, reflexive (a.k.a., automatic) retrieval of associated information, which may or may not be accurate, will also push plausibility and confidence judgments (Dodson & Johnson, 1993; Lindsay & Johnson, 1989). This
reflexive retrieval of associated information occurs during memory reconstruction and the source monitoring decision process. If, during these processes, information is flagged as associated that information may be utilized to make a source judgment, even if it is inappropriate.

Further, relevant motivations, goals and biases can influence the decision making process (Dodson & Johnson, 1993; Gordon et al., 2005; Johnson et al., 1993). For instance, Gordon and colleagues (2005) found that people tend to make source monitoring errors in their favor, attributing positive outcome information to a more accurate source and attributing undesirable outcomes to sources previously identified as inaccurate.

Thus, the decision making processes as a whole involves establishing context, setting criteria and weighting available cues (Dobson & Markham, 1993; Dodson & Johnson, 1993; Johnson et al., 1993; Lindsay & Johnson, 1989). More stringent criteria for making a source attribution will decrease the likelihood of making a source monitoring mistake, as long as the weighting criteria appropriately capture the available cue information (Dodson & Johnson, 1993). However, putting more effort into the decision making process and tightening the criteria for making a source judgment does not guarantee accurate source attributions (Chambers & Zaragoza, 2001; Dodson & Johnson, 1993; Lindsay, 1990). As will be discussed, a number of factors can affect the accuracy of source monitoring.
Raye and Johnson (1980) conducted two studies demonstrating that reality monitoring between internal and external sources of information leads to more accurate source attributions than discriminating between more than one external source. In the first study, participants were assigned one of three roles: recorders, speakers, or listeners. It was explained to participants that speakers and recorders would act as experimenters, whereas listeners were the “participants” who would later be tested on their memory of the “conversation” they would be witnessing. The group was given a topic to start off the “conversation.” Speaker A responded to the topic word with an associated word, to which Speaker B responded. For example, if the original word was “rain,” Speaker A might respond “cloud,” to which Speaker B might have responded “white.” The two speakers alternated back and forth a total of 15 times, each responding to the other with a single, highly related word. Throughout, two recorders wrote down all the words spoken by their assigned speaker: Recorder A wrote down all the words spoken by Speaker A, and Recorder B did the same for Speaker B. Listeners were instructed to pay attention to both speakers. All participants then spent 1 hour doing a filler task before completing a recognition test, which only the listeners were expecting. The recognition test required all participants to discriminate between new and old items. Further, for items identified as old, participants were asked to attribute the word’s origin to one of the two speakers.

As Raye and Johnson (1980) hypothesized, the speakers, who were identifying between internal and external sources, were significantly better at correctly identifying the origin of the items (90% source accuracy). This was due to the different categories of cues that speakers had to rely on in order to determine the source of each word. Self-
generated words which have an internal source, for instance, were likely associated with
cognitive operations. This type of discriminatory cue was unavailable to listeners and
recorders, who were forced to rely on discriminating external cue content (e.g., the
speakers’ voices) leading to a decrease in accurate source identification (81% accuracy).

In a second study, Raye and Johnson (1980) ruled out the possibility that this
accuracy difference could be due to idiosyncratic contribution knowledge rather than cue
category differences. In the first study, it was possible that speakers’ higher accuracy in
source identification was due to their own idiosyncratic knowledge of their responses,
rather than utilization of discriminatory cues between internal and external sources. A
speaker may have recognized an old item and been better able to identify the source as
the other speaker because they knew they would never have generated that specific word.
In fact, later studies have demonstrated increased source monitoring accuracy for self-
generated items (Kahan & Johnson, 1992).

To eliminate this possible explanation, Raye and Johnson (1980) recreated the
first study, making specific modifications. A “director” was added to each group. The
director, alternating between each speaker, asked questions designed to elicit specific
responses. For example, the director might have asked “What is a word that is the
opposite of fast, beginning with s and ending in w?” This limited speaker responses to a
specific answer, eliminating idiosyncratic response knowledge. The rest of the study was
identical to the first, with all participants completing a recognition and origin-of-item test.

Again, speakers were found to have better source identification, further bolstering
the assertion that different discriminatory cues between internal and external sources
increase accurate source monitoring (Raye & Johnson, 1980). Listeners and recorders had
equally low source identification, again hypothesized to occur because they were forced to try to identify specific content origin while relying on the same set of cues. Directors, whose recognition accuracy was just as high as all other participants, had particularly poor source discrimination. This demonstrates that simply attending to the item does not guarantee accurate source encoding (Johnson et al., 1993; Raye & Johnson, 1980).

In fact, source monitoring studies frequently uncover a discrepancy between recognition and source monitoring accuracy, indicating that these two processes tap into different aspects of memory (Bornstein & LeCompte, 1995; Johnson et al., 1993; Johnson et al., 1996; Lindsay & Johnson, 1991). Often recognition and recall can be very high while at the same time accurate source monitoring is low (e.g., Johnson et al., 1996; Kahan & Johnson, 1990). In some instances, when discriminating cues are very similar, source monitoring accuracy is as low as chance (Kahan & Johnson, 1990). Anecdotally, source monitoring failures are one of the most common breakdowns in memory, and this is supported by a volume of research (Lindsay & Johnson, 1989).

*Discriminating Between External Sources*

When attempting to distinguish between two external sources in memory, there is a reliance on the same set of cues: spatial/temporal, sensory, affective, and semantic (Ferguson et al., 1992; Raye & Johnson, 1980). Thus, discrimination between two external sources requires differentiating between specific content originating from each source (Ferguson et al., 1992; Johnson et al., 1996; Johnson & Raye, 1981; Raye & Johnson, 1980). In comparison to reality monitoring, this leads to consistently lower source monitoring accuracy (cf. Bornstein & LeCompte, 1995; Johnson et al., 1993).
Further investigation of external source monitoring has provided additional evidence to support the proposition that source decisions are founded on available memory/source characteristics (Ferguson et al., 1992). The specific purpose of this study was to examine the differences in cue utilization between young and older adults during external source monitoring (referring to college age adults and adults near or above retirement age, respectively). External source monitoring, as demonstrated by Raye and Johnson (1980), has been shown to be more difficult than discriminating between internal and external sources (Bornstein & LeCompte, 1995; Foley, Johnson, Raye, 1983). This difficulty increases, as the research conducted by Ferguson and colleagues (1992) showcases, along with source similarity (Kahan & Johnson, 1990; Lindsay & Johnson, 1991).

The first study conducted by Ferguson and colleagues (1992) investigated the use of a single, discriminating-perceptual cue, gender, to aid in source monitoring. Participants sat across a table from either a female/female or a male/female pair of actors. The actors took turns speaking words at measured intervals. To eliminate spatial cues as a second discriminatory cue, the actors switched seats halfway through the study. An unexpected recognition test followed the word presentation, which also required that the source (one of the two actors) be identified for any word recognized as old. Young participants were equally good at source monitoring between female/female and male/female pairs (accurately identifying the source approximately 70% of the time), whereas older participants were significantly better at identifying the source of a recognized word in the male/female pair condition than with female/female pairs (69% compared to 56%, respectively).
Ferguson and colleagues (1992) conducted a second study to investigate age differences between external source monitoring when multiple discriminating perceptual cues, spatial cues in addition to the sex of the actors, were available. This study was conducted using the same methodology except only male/female pairs were viewed. Further, actors sat in front of different backgrounds (i.e., a poster or a plant) to establish a spatial cue. In the no-cue group, the actors switched places halfway through the study, whereas actors in the spatial-cue group remained in the same seats throughout. Findings indicate that young adults’ source monitoring accuracy significantly improved when both perceptual cues were present, whereas older adults were not aided by having multiple perceptual cues. Across all conditions source monitoring accuracy ranged between 67 and 83%.

A third study sought to investigate the effectiveness of spatial cues alone (Ferguson et al., 1992). This study was methodologically the same as Study 2, except all actors were female. When only one perceptual cue was available, both age groups demonstrated increased source monitoring accuracy. However, young adults’ source monitoring scores remained higher across conditions than their older counterparts. The range of source monitoring accuracy in this study was wider, 60 to 83%.

Ferguson and colleagues (1992) attribute age differences in source monitoring across these studies to two factors. The primary difference being that difficulty discriminating between external sources is exacerbated by cue similarity to a greater degree for older adults (i.e., female/female pairs, or both actors having sat in front of both backgrounds). Secondly, older adults do not benefit from the availability of multiple
perceptual cues, whereas younger adults are better able to use multiple discriminatory cues to increase source monitoring accuracy.

One of the primary contributions of this article was to demonstrate that external source monitoring is reliant on perceptual cues, as changes in cue availability lead to shifts in accuracy (Ferguson et al., 1992). Also, similarity between cues (i.e., same sex pairs, or lack of spatial cues) led to a decrease in source monitoring precision by as much as 14%.

When differences in age groups are assessed in the context of reality monitoring, no age differences are found between older and young adults (Hashtroudi, Johnson, & Chrosniak, 1989). However, when young and older adults were asked to discriminate between two external sources (i.e., words spoken by two different actors), older adults again had lower source monitoring accuracy. These findings suggest that effective utilization of perceptual cues decreases with age. This is true even though the ability to recognize previously presented material remains largely unaltered as age increases. This finding is consistent with other memory research (Ferguson et al., 1992; Johnson et al., 1995). Likely, gains in one category of cues (e.g., spatial location) hampers retention of information in another cue category (e.g., perceptual information such as the sex of the actor) (Ferguson et al., 1992).

Data buttressing this possibility came from two studies conducted by Johnson and colleagues (1995). Participants from two age groups, young and older adults, were asked to determine the source of words presented by two different actors. A video of the actors, either a female/male or a female/female pair, was presented to participants with both actors equally visible. Participants were asked to perform one of two possible cognitive
operations while viewing the video: rate the pleasantness of each spoken word, or rate the
pleasantness of the word if it was spoken by Actor A and answer whether the word was
liked (yes/no) if it was spoken by Actor B. In order to eliminate spatial location as a cue, the
actors switched locations halfway through the video.

Similar to previous findings, older adults had less accurate source monitoring than young adults when cues were similar (i.e., same sex pairs or similar cognitive operations performed for both actors). When multiple cues were available, only older adults had a significant reduction in source monitoring accuracy. Further, it seems that generating cognitive operations reduces encoding of perceptual cues for older adults. Finally, the reduction in successful source monitoring between external sources was not related to a battery of neuropsychological tests assessing frontal lobe function, indicating that successful utilization of multiple cues is negatively related to age, even when taking into account neurological decline that occurs as age increases (Johnson et al., 1995).

Other studies have demonstrated the inherent difficulty in discriminating between two external sources. However, these studies tend to present information in two different types of media and ask participants to identify which source introduced the information. For instance, participants may read about a scene in addition to the scene being shown as a slide (Lindsay & Johnson, 1989; Lindsay, Johnson, & Kwon, 1989). The written and visual scene will contain a number of inconsistencies and participants are asked to identify where specific information was originally presented. Again, these studies find that reliance on the same cue categories force participants to discriminate between source content, resulting in lower source monitoring accuracy.
Effective use of discriminatory cues and how that process is altered across age during external source monitoring is important to consider. Given that older adults can and do serve on juries, differences in discriminatory cue utilization is relevant, though it will not be investigated in the research currently being proposed. Other studies have investigated how well children at different ages are able to accurately identify between external sources (Lindsay et al., 1991). This research is beyond the scope of the current proposal and will not be addressed further. However, all of these studies, across age categories and media format, arrive at the same conclusions. The more similar external sources are the more error prone the source attributions (Ferguson et al., 1992; Johnson, 2006; Johnson et al., 1996; Kahan & Johnson, 1990). During the decision making process, if appropriate criteria are not in place, source judgments can be based on volume of cues within a category or familiarity; these heuristic processes may not lead to necessary corrections inflating the likelihood of source attribution errors (Johnson et al., 1993). Finally, a number of factors influence which decision criteria are adopted; among these factors, relevant biases have been identified as possibly affecting source monitoring decisions (cf. Johnson et al., 1993; Kahan & Johnson, 1990). It is a possibility that visual salience may introduce a bias that leads to systematic errors in source monitoring.

Illusory Causation

Illusory causation is the tendency for causality to be erroneously attributed to objects or persons that capture visual attention, either by increased prominence in the visual field or due to distinctive attributes that draw attention (McArthur, 1980; Taylor & Fiske, 1978; Lassiter, 2002). Koffka (1935) reported the earliest example of illusory
causation upon discovering that participants attributed an increase in distance between
two pinpoints of light to the light they were looking at, regardless of whether it was the
light that actually moved. Thus, visually salient targets can be interpreted within the
Gestalt context of “figural emphasis,” where the target draws a disproportionate amount
of attention compared to its surroundings (Pryor & Kriss, 1977; Robinson & Zebrowitz
McArthur, 1982).

Empirical investigations have consistently found that an increase in a target’s
salience is accompanied by an increase in causal ascriptions. The manipulation of target
salience has been achieved through the use of mirrors (Duval & Wicklund, 1973), seating
arrangement, instructions directing observers’ attention (Taylor & Fiske, 1975), as well
as distinctive target attributes such as skin color (Taylor, Fiske, Close, Anderson, &
Ruderman, 1976), hair color (McArthur & Solomon, 1978), motion, sex, distinctly
colored or patterned apparel, through the use of lighting (McArthur & Post, 1977), and
the donning of leg braces (McArthur & Solomon, 1978). Thus, by making an actor
visually conspicuous through the employment of one of these methods, there tends to be
a corresponding increase in observers’ causal attributions.

By manipulating participants’ seating arrangement in order to control available
visual content, Taylor and Fiske demonstrated that illusory causation affects more
complex interpersonal attributions of causality and control (1975). Small groups of
participants were seated around two actors engaged in a casual conversation. Two
participants whose vision was trained on the front of Actor A were found to attribute
greater causality to this actor in terms of setting the conversation’s tone, determining
what information was exchanged, and influencing the conversation partner. Two other
participants sitting behind Actor A, their line of sight directed on Actor B, perceived Actor B to be more causal in the conversation on these same measures. The remaining participants, able to see profiles of both actors, judged both actors as having equal influence throughout the five-minute conversation. Thus, participants attributed causality to the actor most prominent in their visual field.

Directing visual attention via explicit instruction also results in biased judgments of causality. Taylor and Fiske (1975, Study 2; Fiske, Kenny, & Taylor, 1982, Study 1) instructed participants to pay attention to one of two actors in a videotaped conversation. These instructions replicated illusory causation findings, suggesting that increased visual attention on a target is responsible for eliciting biased causality judgments.

Briggs and Lassiter (1994) have demonstrated that increased visual prominence leads to increased causality judgments, even when the overall contribution of the more visually salient actor is minimal. By presenting participants with the same conversation in one of three video formats, it was again demonstrated that an increase in visual prominence is associated with an increase in related causality judgments. This increase was found even for an actor who asked only 3 out of 10 questions and continued to endure when actor participation was decreased to 2 out of 10 questions.

McArthur and Solomon (1978) discovered that the cause of an aggressive actor’s behavior was attributed more to an interaction partner when the partner was made visually conspicuous – by either wearing a leg brace or having a novel hair color. This study demonstrated that the behavior of an aggressive individual can actually come to be perceived as being the fault of a non-aggressive interaction partner if some characteristic of that non-aggressive partner draws observers’ attention. This outcome is especially
interesting as it intuitively seems likely that the aggressive behavior should draw attention, leading observers to make dispositional judgments about the aggressive target. Instead, if the non-aggressive partner was wearing a leg brace or had red hair, observers were found to blame the partner for the aggressive behavior they were encountering.

The Mechanisms Underlying Illusory Causation

Originally within illusory causation research, investigations focused on determining whether differential attention corresponded with differential volume of information encoded for conspicuous targets through recall measures (Taylor & Fiske, 1978). Recall results in this area have been mixed (McArthur, 1981; Taylor & Fiske, 1978). At least ten studies have tried to measure volume of recall: five studies found that participants were able to recall more about the more salient actor, and five studies were unable to find a correlation between salience and recall (Taylor & Fiske, 1978).

When seating arrangement was used to manipulate actor salience, recall was not found to increase with visual salience (Taylor & Fiske, 1975, study 1; Taylor et al., 1979, study 1). Because Taylor and Fiske (1975) were able to find preferential recall in their second study, they hypothesized that ceiling effects impeded their ability to get recall differences in the first study.

McArthur and Post (1977) conducted five studies, and found preferential recall only when the actor was made salient by being brightly lit. Though salience effects were found when the actor was made salient through motion, sex, or by having on bright or patterned apparel, none of these increases in causal attributions were accompanied with
increased recall. Thus, McArthur and Post (1977) concluded that preferential encoding, measured through recall, was unrelated to illusory causation findings.

More explicitly, in another publication, Robinson & Zebrowitz McArthur (1982) concluded:

“...it should be noted that such recall would not provide a satisfactory explanation for illusory causation effects. Specifically, it fails to explain how perceivers come to recall more information representative of a salient actor’s causal influence rather than other types of information about the salient actor. In essence, this explanation seems to require that we selectively perceive the causal efficacy of a salient actor, which is just what the representative recall mediator is attempting to explain.” pp. 245.

Instead of finding supporting data for the overrepresentation of information in memory, Fiske, Kenny, and Taylor (1982) found evidence leading them to posit that observers construct beliefs—or schemas—that a salient target is more causal and then attend to and search for supporting information (McArthur, 1980, 1981). Schema-driven inferences were hypothesized to result from observers’ general knowledge of social interaction rules, leading them to search for information relevant to causality (Fiske et al., 1982). This expectation-driven information search is suggested to lead observers to search for information supporting the existing schema that the most salient actor must be more causal.

When exploring this possible mechanism, Fiske and colleagues (1982) had participants complete questionnaires rating actors’ causality, as well as perceptions of dispositional and situational information. Then each participant indicated the extent to
which each of the questionnaire items contributed to their causality ratings. Increased information, tested using recall, about salient stimuli was not demonstrated to be a plausible mediator of illusory causation. Schema-relevant recall enhancement for salient information (only that information considered by the observer to be relevant to causality) was supported by mediational analyses.

However, support has been found for the possibility that the initial registration of information from the environment is a critical determinant of illusory causation (Ware et al., 2008). This hypothesis was founded on Newtson’s (1973) argument that perceivers actively regulate the information they extract from ongoing behavior by segmenting the behavior into meaningful action units. Newtson further suggested that perceivers can vary the strategies employed to extract information from ongoing events, and this variation in perceptual analysis in turn influences the quantity of information obtained. Specifically, it was hypothesized that the strategy of breaking ongoing behavior into fine action units leads to greater information gain than breaking the behavior into larger units. Further, it was suggested that varying the type of perceptual strategy employed could alter the type or kind of information selected from the event (Mussad, Hubbard, & Newtson, 1979). Therefore, the quantity as well as the quality of information obtained from a behavior sequence is dependent on the segmentation (i.e., unitization) strategy utilized during the initial encoding of behavior.

Newtson and colleagues demonstrated that participants are forced to process visual information more finely when situational milestones were not visible (Newtson, Rinder, Miller, & LaCross, 1978). Participants in this study segmented a fairly mundane action—the collating and stacking of questionnaires. Participants were either allowed to
see the growing stack of papers or a box obstructed their view. Participants unable to track the progress of the task because of the position of the box failed to break the ongoing behavior into larger chunks, supporting the possibility that illusory causation is mediated by visual attention. That is, the information available in the environment appears to influence the initial registration or perceptual organization of such information, and this process may then directly influence judgments related to causal attributions.

Four studies conducted by Lassiter, Geers, Munhall, Ploutz-Snyder, and Breitenbecher (2002) strongly suggest that illusory causation is a perception-based processing error instead of a memory-based bias. Using hand held-tally registers, participants were asked to unitize (break into meaningful events) a “getting-acquainted conversation” filmed from three different camera perspectives. Participants were instructed to press a button whenever they perceived a meaningful or important action to have occurred in the video. Study 1 revealed that camera perspective led participants to unitize information differently, which in turn led them to different conclusions about actors’ causality.

Using a simulated confession video from a previous study (Lassiter et al., 1992), participants in Study 2 either unitized or simply watched the suspect-focus or the detective-focus format (Lassiter, Geers, Munhall, et al., 2002, Study 2). The act of unitizing was not found to alter participants’ judgments, showing that the unitizing task was non-reactive. Participants exposed to the suspect-focus format perceived the confession as more voluntary. Also, unitization was found to mediate the influence of the
camera perspective on confession-voluntariness judgments, reinforcing the hypothesis that illusory causation is influenced by initial registration of information.

A third study again used a “getting acquainted video.” Participants either unitized the stimulus into meaningful actions or simply watched the video (Lassiter, Geers, Munhall, et al., 2002, Study 3). Participants were found to have better recall for the most salient target. Again, increased visual salience led to corresponding increases in causality judgments. However, when segmenting and recall were partialled out, the influence of visual salience became non-significant. This finding demonstrated that the effect of visual salience, manipulated by the camera perspective, indirectly affects causality judgments. There was further indication that both initial registration—represented by unitization—and recall account for variance in causality judgments.

A fourth study used two different “getting acquainted conversations” and placed half the participants under cognitive load, reducing working memory. Visual salience was again manipulated by camera format and was significant across both videos. Recall, but not the rate of segmentation or causality judgments, was affected by cognitive load. Medialional analyses determined that under cognitive load, segmentation rate, but not recall, mediated the effect of visual salience on causality judgments; suggesting that illusory causation is perceptually based and not the product of memory (Lassiter, Geers, Munhall, et al., 2002).

More recently, a more direct measure of visual attention, specifically electrooculographic eyetracking, found further evidence supporting the possibility that illusory causation stems from initial encoding of visual information (Ware et al., 2008). Visual attention was either manipulated with instructions or by varying the visual
prominence of a target by presenting the same interaction from one of two different camera angles. When camera angle was used to manipulate visual prominence, increasing the target’s visual salience drew participants’ attention in the same manner as explicitly instructing participants to pay special attention to that target. This effect was so strong that observers’ visual attention was drawn to the most salient actor regardless of who was speaking. The influence of these manipulations on relevant causality judgments was mediated by amount of visual attention focused on the target.

As discussed, it has repeatedly been demonstrated that illusory causation is a pervasive and persistent tendency for individuals to perceive the most salient actor as more causally influential (see McArthur, 1981, and Taylor & Fiske, 1978, for review). Illusory causation effects have been shown to be highly generalizable to both matters of personal import as well as trivial judgments, leading some to suggest that the bias may be automatic as long as visual attention is paid to the presented stimulus (Taylor, Crocker, Fiske, Sprinzen, & Winkler, 1979).

Camera Perspective Bias

Theoretically founded on illusory causation findings (Briggs & Lassiter, 1994; Taylor & Fiske, 1975) and driven by the ever increasing frequency of videotaping custodial interrogations (Gellers, 1992), research on how the perspective of the video camera can influence confession-related judgments has uncovered a robust bias: focusing the camera directly on the suspect leads observers to rate the confession as more voluntary and the suspect as more likely to be guilty (Lassiter, 2002; Lassiter et al., 2006). By increasing the visual conspicuousness of the suspect via camera perspective,
visual attention is drawn to the suspect (Ware et al., 2008). Further, visual attention has been found to mediate the effect of camera perspective on these biased judgments, demonstrating the perceptual foundation of the bias.

Research on the influence of camera perspective on subsequent judgments of a police interrogation is important, as the confession of a suspect in a criminal trial is heavily weighted in the decision of the suspect’s ultimate guilt or innocence (Kassin, 1997; Kassin & Neumann, 1997; Kassin & Wrightsman, 1981; Leo, 1996). Further, the videotaping of interrogations is becoming more common in the United States (Geller, 1992). And the most frequent video format employed focuses the camera directly on the suspect (Lassiter & Geers, 2004).

The influence of camera perspective on confession-related judgments has come to be known as the camera perspective bias (Lassiter, 2002). Research on this bias, which has spanned more than twenty years, can be described in two stages following the recommendations suggested by Diamond (1997). Initial research should identify a problematic procedure related to legal practices. The second stage of a research program should employ methodology considered more representative of legal procedures. By following these stages, psycholegal researchers are more likely to convince the legal system that a problematic procedure does exist and is likely to occur in criminal procedures.

Stage 1

The first stage of experiments employed interrogation simulations across nine studies. This stage of research explored the effects of camera perspective on mock jurors’
perceptions of voluntariness, sentence severity, and likelihood of guilt, as well as the robustness of the phenomenon (Lassiter, 2002; Lassiter, Geers, et al., 2001).

In the initial demonstration of the camera perspective bias, a 2-min simulated police interrogation pertaining to shoplifting was simultaneously filmed from three different camera angles and shown to participants to determine the effect of camera perspective on perceived coercion (Lassiter & Irvine, 1986). The suspect-focus camera perspective allowed participants to see the front of the suspect and a limited portion of the back of the detective; this is the most common format typically presented to judges and jurors (Geller, 1992). The detective-focus format was filmed with the camera trained on the front of the detective, allowing viewers to see only the back of the suspect’s head and shoulders. An equal-focus camera perspective allowed participants to see profiles of both detective and suspect. After watching one of these three formats, participants rated the level of coercion used to elicit the confession. Additionally, participants made either dispositional or situational attributions about the suspect’s behavior.

Within the Lassiter and Irvine study (1986), suspect-focus participants perceived the lowest levels of coercion and ascribed significantly more dispositional attributions to the suspect. Participants presented with the other camera formats ascribed the suspect’s behavior to more situational causes. The detective-focus participants judged the confession to be the most coerced. Equal-focus participants’ judgments of coercion fell between these two groups.

Lassiter, Slaw, Briggs, and Scanlan (1992) performed an extension of the original Lassiter and Irvine (1986) study, demonstrating that the camera perspective bias occurs across three other types of crime (burglary, rape and drug trafficking). This study also
investigated the effect of voluntariness ratings on perceived guilt, as instances of these two judgments diverging have been reported (Kassin & Wrightman, 1980, 1981; Lassiter et al., 1992). Additionally, preliminary attempts to discover individual differences in susceptibility to the camera perspective bias were made by incorporating the shortened form of the Need for Cognition Scale (Cacioppo et al., 1984); however, individual differences in elaborative thought did not eliminate the effect of camera perspective (Lassiter et al., 1992).

After being instructed to assume the role of jurors, participants read a brief definition of coercion before being presented with one of three simulated interrogations either in video (both suspect-focus and equal-focus camera formats were employed), in audio, or in transcript form. Scrutiny of participants’ continuous-scale ratings of voluntariness produced the same pattern uncovered in the original study between the two camera perspectives. When exposed to the suspect-focus video, participants rated the confession as more voluntary than participants who had viewed the equal-focus format. No differences were found between traditional media formats (audio and transcript) and the equal-focus video format. No direct effects of confession-presentation format were found for likelihood of guilt judgments; however, voluntariness judgments were found to be significantly related to guilt judgments (Lassiter et al., 1992).

Four studies attempted to eliminate the influence of camera perspective on these relevant judgments (Lassiter, Beers, Geers, Handley, Munhall, & Weiland, 2002). These four studies were also designed to address the possibility of a mediating relationship between voluntariness judgments and likelihood of guilt judgments. Additionally, the
impact of voluntariness and likelihood of guilt judgments on recommended sentencing severity was explored.

The first study found that allowing mock jurors to deliberate on the voluntariness of the confession before making individual judgments did not eliminate the camera perspective bias (Lassiter, Beers, et al., 2002, Study 1). Providing specific forewarning about the camera perspective bias, as well as providing transcripts of witness testimony for both the prosecution and the defense, also failed to allow participants to adequately correct for the influence of camera perspective (Lassiter, Beers, et al., 2002, Study 2). Manipulating the amount of attention paid to the interrogation, by having participants press a button to designate important information in the interrogation, still produced biased judgments of voluntariness and likelihood of the suspect’s guilt (Lassiter, Beers, et al., 2002, Study 3). Finally, a lengthier, more realistic interrogation based on a real murder interrogation transcript, considered by experts to be an example of a coerced confession, again led participants to make biased judgments when exposed to the suspect-focus camera perspective (Lassiter, Beers, et al., 2002, Study 4). Within this fourth study, camera perspective was found to bias voluntariness judgments, as well as judgments of guilt, and recommended sentence severity.

Across all four studies, a significant effect of camera perspective emerged in the same linear pattern discovered in previous research (Lassiter, Beers, et al., 2002). Participants presented with suspect-focus videos had higher perceptions of confession voluntariness, viewed the suspect as more likely to be guilty, and recommended stricter sentencing than participants viewing an equal-focus version of the interrogation. Equal-focus video formats elicited judgments similar to those obtained from audio and
transcript conditions. Participants in the detective-focus condition had the lowest ratings of confession voluntariness, viewed the suspect as less likely to be guilty, and recommended the most lenient sentencing.

In all four studies, voluntariness judgments were found to mediate likelihood of guilt judgments, demonstrating that camera perspective had a direct effect on voluntariness judgments and an indirect effect on likelihood of guilt judgments (Lassiter, Beers, et al., 2002). Further, camera perspective both directly and indirectly affected, through voluntariness and likelihood of guilt judgments, the severity of sentencing recommendations (Lassiter, Beers, et al., 2002, Study 4). Thus, the effect of camera perspective pervades multiple mock-juror decisions both directly and indirectly.

Though causality judgments relevant to confession voluntariness had been found to be directly affected by camera format, it was important to demonstrate the resilience of the bias. A number of factors make the laboratory different than the jury box. These factors needed to be explored to see if relevant individual difference variables or situational variables would attenuate the camera perspective bias before it was necessary to develop more realistic trial simulations.

One such individual difference variable that was empirically scrutinized was attributional complexity. Individuals categorized as high in attributional complexity have the ability to reason thoroughly and to identify complex causal relationships (Fletcher, Danilovics, Fernandez, Peterson, & Reeder, 1986). Individual differences in attributional complexity have been demonstrated to influence judgments, decisions, and the ability to spontaneously generate complex explanations for social behavior. Though similar to need for cognition, attributional complexity accounts for distinct variance. Therefore, it was
hypothesized that participants high in attributional complexity may be able to reduce the biasing effect of camera format on confession relevant judgments (Lassiter, Munhall, Berger, Weiland, Handley, & Geers, 2005). However, both high and low attributionally complex participants were found to be susceptible to the camera perspective bias. Participants in the suspect-focus condition again produced significantly higher judgments of voluntariness than participants in the equal-focus condition. Thus, high attributional complexity failed to moderate the effect of camera perspective (Lassiter et al., 2005).

Under the right circumstances, being held accountable for judgments increases the cognitive effort individuals will expend processing relevant information, which can lead to increased resistance to judgmental biases (Lerner & Tetlock, 1999; Tetlock, Lerner, & Boettger, 1996). Likewise, increasing accountability could increase the realism of mock jurors’ experiences, producing behavior more closely resembling jurors in an actual criminal case (Lassiter, Munhall, Geers, Weiland, & Handley, 2001). To investigate this possibility, participants were randomly assigned to high and low accountability conditions. Those in the high-accountability condition watched a video in which a retired local judge delivered instructions on aspects of the law. These participants were led to believe that they would later meet the judge and provide reasons for their verdict judgments. Conversely, participants in the no-accountability condition were told all responses would be kept confidential. All participants then viewed a 30-min simulated confession created from the transcript of the Bradley Page interrogation in either suspect-focus or equal-focus format.

The Bradley Page trial is considered to be a text-book example of a coerced false confession (Lassiter, 2002; Lassiter, Beers, et al., 2002; Pratkanis & Aronson, 1991).
his interrogation, Bradley Page, a young male suspected of murdering his girlfriend, cooperated with interrogators and imagined a scenario in which he had killed his girlfriend. When later informed that this scenario was being considered a confession, Page immediately recanted. Even though high-accountability participants reported expending marginally more effort, used significantly more information to reach their decision, and showed significantly more complex integration of information, an effect of camera perspective was still found across both continuous and dichotomous judgments of confession voluntariness. The camera perspective bias was not mediated by thought complexity—measured by open-ended responses about interrogation information that participants considered to be important. In fact, participants in the equal-focus condition were found to have more complex thought ratings overall, suggesting the camera perspective bias is a robust perceptual-based bias in encoding not eliminated by careful consideration stemming from increased accountability (Lassiter, Munhall, Geers, Weiland, et al., 2001).

In a related study, both suspect-focus and equal-focus camera formats of the Bradley Page confession were employed. Participants then completed a voluntariness and credibility index to determine whether participants exposed to the suspect-focus format perceived the suspect’s confession to be more credible (Lassiter, Munhall, Geers, Handley, & Weiland, 2001). Voluntariness was again found to be influenced by the camera perspective. However, credibility judgments did not vary as a function of camera perspective, eliminating the possibility that the bias is an artifact of increased perceptions of credibility.
The camera perspective bias has been seen to occur over five types of crime (shoplifting, burglary, rape, drug trafficking, and homicide) using both male and female suspects (Lassiter & Irvine, 1986; Lassiter et al., 1992). High levels of elaborative thought, as measured by the Need for Cognition Scale (Cacioppo & Petty, 1982; Cacioppo et al., 1984), failed to eliminate the camera perspective bias (Lassiter et al., 1992). Likewise, neither increased accountability nor attributional complexity moderated the bias (Lassiter et al., 2005; Lassiter, Munhall, Geers, Weiland, et al., 2001). Possible alternative explanations in which the camera perspective bias is an artifact of inattention or increased suspect credibility have also been falsified (Lassiter, Munhall, Geers, Handley, et al., 2001; Lassiter, Geers, Handley, et al., 2002 Study 3). However, in order for research to be considered by the legal system, more representative methods must be implemented, such as videotaped trial simulations and mock jurors from more heterogeneously diverse backgrounds (Bornstein, 1999; Diamond, 1997).

**Stage 2**

Stage One studies were short and methodologically simple, primarily using continuous measures (Lassiter, Geers, Munhall, Handley, & Beers, 2001). Stage Two experiments, requiring 3 to 5 hours of participant involvement, utilized realistic videotaped simulations of actual trials. Participants were presented with videotapes of direct testimony, several witness cross-examinations, physical evidence presentations, both prosecution and defense statements, and judicial rulings and instruction concerning aspects of the law and legal practices (Lassiter, Geers, Handley, et al., 2002).
Jury eligible community members from southeastern Ohio either volunteered or were monetarily compensated for their participation (Lassiter, Geers, Munhall, Handley, et al., 2001). Participants viewed an interrogation constructed from a transcript of an actual murder interrogation. The partial recreation of the interrogation was based off the Peter Reilly case and was filmed simultaneously from three camera perspectives.

Peter Reilly, an 18 year old boy accused of murdering his mother, was questioned for 16 hours by multiple officers before becoming convinced of his own guilt. Employed police tactics included falsely telling Reilly he had failed a polygraph and that police had discovered evidence connecting him to the crime. Over the course of his interrogation, Reilly became convinced of his own guilt and eventually signed a statement confessing to the murder of his mother. Two years after being imprisoned, Reilly’s conviction was appealed and charges were dropped after it was determined that the prosecution had withheld exonerating evidence (Lassiter, Geers, Munhall, Handley, & Beers, 2001; Lassiter, Munhall, Geers, Handley, et al., 2001).

In addition to viewing the 40-min interrogation, participants were presented with video testimony of prosecution and defense witnesses, judicial rulings, introduction of evidence, and opening and closing arguments for the prosecution and the defense. All stimuli, with the exception of the interrogation, were filmed in a real courtroom from the perspective of the jury box. In its entirety, the trial simulation lasted 2.5 h. After viewing the simulation, half of the participants watched the confession a second time to determine whether viewing the interrogation after all evidence had been presented would affect participants’ judgments. Participants then rated the confession’s voluntariness and the suspect’s guilt on both continuous and dichotomous scales.
Though the dichotomous measures were not significantly affected by camera perspective, the continuous scale ratings revealed the same linear trend discovered in previous research. The more salient Reilly was made in the interrogation, the more voluntary his confession was judged to be and the more likely he was judged to be guilty. Again, camera perspective was seen to have a direct effect on voluntariness judgments and an indirect effect through voluntariness to likelihood of guilt ratings. Judgments did not seem to be affected by viewing the confession a second time, but the authors suggested that a larger sample size be used to decisively make this determination (Lassiter, Geers, Munhall, Handley, et al., 2001).

A second realistic trial simulation was developed and shown to university students and community members, monetarily compensated for their time, from rural, suburban, and urban locations in Ohio (Lassiter, Geers, Handley, Weiland, & Munhall, 2002, Study 1). Student responses were not found to vary from those of community members, which further bolsters the findings of Stage 1 research. In fact, few mock juror studies have found differences between students and more heterogeneous populations; of the 26 studies examined by Bornstein (1999), only 5 found differences between community members and university students—students having been found to be somewhat more lenient.

The professionally filmed trial simulation, similar to the Peter Reilly simulation, was a reproduction of the Bradley Page case (Lassiter, Geers, Handley et al., 2002, Study 1). The Bradley Page trial was used because it, like the Peter Reilly case, is widely known to be a coerced false confession (Lassiter, 2002; Lassiter, Geers, Handley et al., 2002; Pratkanis & Aronson, 1991). Bradley Page, a suspect in the murder of his
girlfriend, was asked by police to imagine a scenario in which he had committed this murder. Upon discovering police had submitted the scenario as a confession, Page recanted his statement, professing it was completely fictitious. In fact, forensic evidence existed in opposition to many of the events contained in Page’s “reconstruction.” It is important to note that these discrepancies were captured in the trial simulation (Lassiter, Geers, Handley, et al., 2002).

Again the trial simulation was filmed from the jury box of an actual courtroom. Judicial instruction was manipulated to determine if it could eliminate the camera perspective bias. Participants were placed in one of three instruction groups. One set of judicial instructions stressed to jurors the importance of considering reliability and fairness in their assessment of the confession—instructions previously found to be moderately effective at getting mock jurors to recognize coerced confessions (Kassin & Wrightsman, 1981)—while another set explicitly instructed participants about avoiding the camera perspective bias. Participants within the third condition received no additional instructions. Judicial instructions were given to jurors via video, manipulating time of delivery (directly before the interrogation presentation or just before rendering a verdict), and were delivered by a retired local judge (Lassiter, Geers, Handley, et al., 2002, Study 1). The trial simulation presented to participants lasted nearly 4 h. The reenactment of Bradley Page’s confession was shown to participants in either the suspect-focus or the equal-focus format.

After viewing the trial simulation, participants provided dichotomous judgments of voluntariness and guilt (Lassiter, Geers, Handley, et al., 2002, Study 1). The use of dichotomous responses increases the realism of jury simulations (Bornstein, 1999).
Participants then indicated their confidence concerning these decisions on a 9-point scale (Lassiter, Geers, Handley, et al., 2002, Study 1).

The camera perspective bias persisted across all judicial instruction conditions and order was not seen to have an effect (Lassiter, Geers, Handley, et al., 2002, Study 1). Participants in the suspect-focus condition gave significantly more guilty verdicts and were more apt to find Page’s confession to be given voluntarily. The effect of camera perspective was so strong that the conviction rate doubled from .15 within the equal-focus camera perspective to .31 within the suspect-focus condition. A strong association was found between voluntariness judgments and judgments of guilt. Further, confidence across all participants was reported to be high, demonstrating that the camera perspective bias persists even in highly realistic trial simulations, is not eliminated by judicial instruction, and was unrelated to high levels of judgment confidence (Lassiter, Geers, Handley, et al., 2002, Study 1).

Lassiter, Geers, Handley, Weiland, and Munhall (2002, Study 2) presented another sample of community members with either the equal-focus or the detective-focus version of Page’s confession to determine the effects of the detective-focus format in a more realistic trial simulation. A few modifications were made to the trial simulation, based on questions and concerns voiced in the previous study, such as specifying the year in which the case took place (to explain why DNA evidence was not included in the trial), clarifying the definition of voluntary and involuntary manslaughter, and specifying that a judge had allowed the confession to be admitted as evidence. Judicial instruction was given in only one form, as it had been shown to have no moderating effects on judgments.
After watching the trial simulation, participants were allowed to deliberate in groups for up to 45 min before giving their verdicts and voluntariness judgments individually. Group deliberation failed to attenuate the effect of camera perspective. As with previous research (Lassiter & Irvine, 1986; Lassiter et al., 1992), those participants in the detective-focus condition found the confession to be more coerced and also judged the suspect to be less guilty. The simple change from equal-focus to detective-focus format dropped the conviction rate by 35%, suggesting that by placing themselves in the suspect’s position mock-jurors were better able to detect the coercive influences exerted by the interrogator (Lassiter, Geers, Handley, et al., 2002).

This line of research has progressed beyond simulated suspect confessions to the use of real police interrogations (Lassiter, Ware, Ratcliff, & Irvin, 2009). Participants either listened to the audio, read a transcript, or watched one of two real police interrogations. Because both interrogations were actual suspect confessions, the type and severity of crime as well as the sex of the suspect were not controlled. The first interrogation was a suspect-focus video of a man accused of sexual assault. The second interrogation was an equal-focus video of a Michigan woman who was suspected of starting a fire which caused her daughter’s death. Even though considerable differences existed between the two confessions, results replicated previous findings. A significant difference was uncovered between the suspect-focus video format and traditional media formats. Those participants in the suspect-focus video condition had elevated ratings of confession voluntariness, lower levels of perceived coercion, and viewed the suspect as having more control over the interrogation. When the equal-focus video was compared to traditional media formats, no differences in causal attributions were found. In a second
study, the equal-focus interrogation was digitally edited to create a suspect-focus and a detective-focus and this new suspect-focus version led to increased voluntariness judgments.

To further extend the external validity of this line of research, Lassiter, Diamond, Schmidt, and Elek (2007) presented practicing judges and police interrogators with a simulated sexual assault interrogation. The interrogation, shown in one of three formats (a suspect, detective, or equal-focus video format), produced the same linear trend reported in previous studies. Therefore, the camera perspective bias has been demonstrated to affect the decisions of university students, community members, police, and judges; all of whom find a confession to be more voluntary when the camera perspective has been focused on the suspect.

To further demonstrate that illusory causation is a perceptually based phenomenon, Ratcliff, Lassiter, Schmidt, and Snyder (2006) attempted to interrupt participants’ perceptual registration and thereby remove the illusory causation bias from their judgments. While watching one of three camera formats of a simulated rape interrogation, participants were asked to either remember a eight-digit number or to keep a mental image of the (ostensible) victim in mind. Participants under cognitive load, those engaged in the digit-rehearsal task, were still affected by the camera perspective bias on both dichotomous and continuous measures of voluntariness, supporting past research. However, participants attempting to hold a mental image in mind during the video were unaffected by the camera perspective. Separate research suggests that creating interference within a perceptual channel (such as holding in mind a mental image) can disrupt the registration of information within that channel (Segal & Fusella, 1970). This
perceptually based manipulation has been the first to successfully eliminate the camera perspective bias, and further supports the possibility that illusory causation is an error related to initial information processing.

Taken together, these studies demonstrate the robustness and external validity of the camera perspective bias. Stage Two studies provided realistic trial simulations based on actual murder interrogations resulting in coerced confessions. Heterogeneous mock jurors were exposed to extensive trial stimuli, judicial instruction, and in one instance were given the opportunity to deliberate. Actual felony interrogations were presented to mock jurors. Actual judges and police interrogators were presented with simulated confessions. However, the camera perspective bias has failed to be attenuated and the same linear trend has repeatedly emerged.

If illusory causation occurs during initial registration as research suggests, this would help to explain why increased accountability, judicial instruction, and high need for cognition have failed to moderate the camera perspective bias. If the salience of a figure biases information processing during initial registration, further cognition would be unable to compensate for the initial bias (Lassiter, Munhall et al., 2001; Lassiter, Beers et al., 2002). Due to the failure of experimental manipulation to alleviate the effect of camera perspective, it has been suggested that this bias may be a form of mental contamination (Lassiter, Beers et al., 2002). Mental contamination is considered to be an unwelcome and unconscious bias in information processing adversely affecting judgment, behavior, and emotion (Wilson & Brekke, 1994). The camera perspective is an example of mental contamination that has wide reaching consequences for judgments produced from videotaped police interrogations.
The principle purpose of a police interview is to obtain information relevant to a specific crime from a person either suspected of involvement in the crime (suspects) or believed to have information pertaining to the crime (witnesses and victims) (Hartwig, Granhag, & Vrij, 2005; Memon & Bull, 1991; Powell, Fisher, & Wright, 2005). When police believe a person to be involved in the commission of a crime, they not only seek to extract information relevant to the crime but attempt to obtain a confession (Buckley, 2007; Gudjonsson, 2003; Kassin, 1997; Russano, Meissner, Narchet, & Kassin, 2005). Information acquired from witnesses and suspects about a crime can be an invaluable asset to investigators (Powell et al., 2005). However, improperly conducted interviews can elicit false or distorted information possibly impeding or even preventing a crime from being solved. This possibility increases with certain types of witnesses and suspects, such as children, the mentally ill, or those with intellectual disadvantages (Gudjonsson, 2003; Powell et al., 2005; Redlich, 2004). Due to the potential complications involved with these groups, initial police interviews with witnesses and victims falling into one of these categories are often videotaped and shown to juries in criminal trials (Powell et al., 2005). Further, the majority of custodial confessions obtained in an interrogation are videotaped and are often introduced as evidence against a suspect (Gudjonsson, 2003; Lassiter & Geers, 2004). Juries are presented with these videos and it is commonly assumed that members of the jury take into account who introduced a fact during the interview/interrogation. It is further assumed that this source information will influence subsequent crime relevant decisions.
The research currently being proposed is investigating the possibility that the video format used to record this type of evidence may actually bias subsequent source monitoring decisions. Specifically, focusing the video camera predominantly on the suspect, witness, or victim during a police interview may lead judges or jury members who later see the video to incorrectly attribute the introduction of facts to these visually salient interviewees. This possibility is likely to be exacerbated by the use of certain police interview and interrogation techniques.

**Interrogation Techniques**

Many problematic interrogation techniques fall into the broad category of restricting information. Biased or improperly trained interviewers may ask close-ended questions that will simply elicit a “yes/no” response rather than open-ended questions that are likely to generate more information (Bull & Milne, 2004; Memon & Bull, 1991; Powell et al., 2005). Further, interviewers have been seen to ask questions that assume a specific answer, direct the interviewee to respond in a given way, or interrupt interviewees’ responses to provide their own account of how the crime unfolded. It is possible, across all these questioning techniques, for interrogators to introduce facts, or possible facts, to which the interviewee may confirm. However, interviewees may confirm facts not because they are correct but because interviewees believe that this is what the interrogator wants (Bull & Milne, 2004; Powell et al., 2005).

There are other questioning techniques that are by and large reserved for interrogating crime suspects. The most frequently used interrogation tactics in the United States are those commonly referred to as the Reid Technique (Buckley, 2007; Hartwig et
al., 2005; Inbau, Reid, & Buckley, 1986; Inbau, Reid, Buckley, & Jayne, 2001). The Reid technique manual and training courses makes very specific recommendations on the way to conduct an interrogation.

These recommendations include diminishing suspect’s perceptions of personal control through isolation, carefully setting up the interrogation room to eliminate ornamentation and other distractions, and infringing on suspect’s personal space (Inbau et al, 1986; Inbau et al., 2001). Paramount to the Reid technique is the development of themes. The development of a theme requires an interrogator to suggest a scenario leading up to and culminating in the relevant crime. The type of theme will vary depending on the interrogator’s perceptions of the suspect’s emotionality and the type of crime; however themes are almost universally constructed to be rationalizations or face-saving justifications for committing the crime (Buckley, 2007; Gudjonsson, 2003; Inbau et al., 2001).

Let us consider the ramifications of the theme development on later source monitoring decisions based on the subsequent video presentation of the confession. Often the interrogator, not the suspect, puts the crime into a context (Henkel & Coffman, 2004). Throughout the interrogation process, suspects are aided in their attempts to come up with “the truth” by the interrogator (Henkel & Coffman, 2004; Inbau et al., 2001). Thus, it is the interrogator’s version of the crime scenario that is often initially given. The interrogator may seek to get the suspect to confess by providing descriptions of the crime scene, describing the injuries to the victim, or making comments about the perpetrator’s actions. This can also be accompanied by false evidence, such as a witness that ostensibly saw the crime take place (Gudjonsson, 2003; Henkel & Coffman, 2004; Inbau et al.,
The possibility of crucial information being introduced by the interrogator seems more likely when paired with the 80/20 rule suggested by the Reid Technique (Buckley, 2007).

The 80/20 rule is the suggested ratio of speech in an interrogation, where the interrogator speaks 80% of the time and the suspect only contributes 20% of the time (Buckley, 2007). The interrogator’s 80% is used largely for theme development, as well as directly confronting the suspect with the crime, overcoming objections, and then later coaxing the suspect to relate the version of the crime pieced together by the interrogator and suspect throughout the interrogation (Buckey, 2007; Inbau et al., 1986; Inbau et al., 2001).

Because interrogators are doing the majority of the talking and making suggestions on how the crime scenario unfolded, investigators are introducing facts, or possible facts, during a confession. How this impacts judgments made from watching a video of the interrogation is unknown. It is possible that when the video format makes the suspect visually salient the introduction of these facts will be attributed to the suspect and not the detective. Or, it is possible that higher source attributions made toward the detective is tied to voluntariness and likelihood-of-guilt judgments in important ways.

The relationship between source attributions and confession judgments is an important one to understand. As previously mentioned, the vast majority of custodial interrogations are recorded for later presentation to judges or juries, either in audio-only, transcript, or video form (Lassiter & Geers, 2004). Also, the presentation of videotaped confessions is becoming more commonplace. The way that the confession is presented can impact the judgments made by subsequent decision makers (Lassiter & Geers, 2004;
Lassiter et al., 2005). It is necessary to better understand how visual salience may alter source attributions in an interrogation context. However, other factors may also influence confession-relevant judgments in the realm of source monitoring.

Schemas, Status, and Source

A developing body of literature is focused on exploring how prior knowledge and schemas affect the source monitoring process (Hicks & Cockman, 2003; Marsh, Meade, & Roediger, 2003; Mather, Johnson, & De Leonardis, 1999; Spaniol & Bayen, 2002; Tuckey & Brewer, 2003). Johnson and colleagues (1993) discussed that the qualitative characteristics of memories, such as category cues, are one facet of memory trace that is used to assist source attributions. The other part of this decision process will pull heavily from prior knowledge.

This type of previously held knowledge would apply to the current research aim of investigating source monitoring errors in videotaped police interrogations. Individuals already have some preexisting knowledge about police interrogations from a variety of sources such as television, books, and movies (cf. Marsh et al., 2003). This type of information may influence source attributions made from a police interrogation.

For instance, Marsh and colleagues (2003) demonstrated that participants incorporated information presented in stories when completing a general knowledge questionnaire. Further, participants’ preexisting schemas were found to influence later judgments about a presented bank robbery (Tucker & Brewer, 2003). Across multiple interviews, these eyewitnesses’ memory for schema-inconsistent information was found
to decay at a faster rate than schema-consistent information. Also, the results of this study suggest that ambiguous information was encoded in a schema-consistent manner. Mather, Johnson, and De Leonardis (1999) investigated the reliance on stereotype information by introducing statements made by sources with different political affiliations (Democrat vs. Republican) or hobbies (athlete vs. writer). The results indicate that when source memory was suboptimal (i.e., for participants focused on their own reactions or for older adults) stereotype reliance has an increased influence on source attributions. This finding is in line with Sherman and Bessenoff’s (1999) findings, which demonstrated that people inappropriately apply stereotypes during a source task when attentional resources are limited.

In another investigation of the reliance on available schemas during source decision making, participants were presented with schema inconsistent information (e.g., encountering a radio in a bathroom) and schema consistent information (e.g., a soap dish in a bathroom) (Bayden, Nakamura, Dupuis, & Yang, 2000). Later source testing revealed that source attributions tended to be more schema consistent, regardless of which room the object had initially been presented in. Bayden and colleagues (2000) conducted a second study which capitalized on schemas of occupational professions. Specifically, statements were presented from two sources. The statements were either consistent with the schema for doctor, lawyer, or were neutral. Participants were presented with these statements prior to knowing the occupation of the two sources; this information was provided directly before the source test. Neutral items were evenly attributed between the two sources. However, doctor-consistent statements were more frequently attributed to the doctor and lawyer statements were more frequently attributed
to the lawyer. From these findings, it was posited that participants were engaged in a guessing hypothesis; when specific source information was unknown, participants were making schema-consistent source decisions.

However, Hicks and Cockman (2003) ran a methodologically similar study but either provided occupational status of the sources prior to encoding or after the presentation of statements. This led to higher source monitoring accuracy for those participants provided with occupation before encoding and reduced the likelihood of reliance on schema-consistent information during retrieval. Further, a second study suggests that schema-consistent source attributions are associated with elevated confidence. Therefore, Hicks and Cockman argue that prior schematic information has “an independent and generally additive influence on confidence ratings (pg. 498).”

**Status Cues**

One type of schematic information that is likely relevant to videotaped police interrogations is status cues. Status cues are defined as nonverbal behaviors like eye gaze and posture as well as indicators of social categories, such as occupation or ethnic accent (Fiske, Berger, & Norman, 2005; Ridgeway, Berger, & Smith, 1985; Ridgeway, 1987). In interactions between individuals of unequal status, nonverbal behaviors have been shown to vary in predictable ways. For example, in female dyads where the interactants varied in age and education level, high-status females looked at the low-status female the same amount when looking and speaking (Ellyson, Dovidio, Corson, & Vinicur, 1980). Whereas, low-status females were found to look more at the higher-status female while listening compared to talking.
Higher status individuals take up more physical space, have reduced verbal response latencies, and speak at a higher volume (Ridgeway et al., 1985). According to the *salience assumption*, status cues can become salient in a given situation (Fisek et al., 2005). Further status cues do not typically exert influence individually, but rather sets of cues called *cue gestalts* cluster together and relate relevant status. Together, status cues have been shown to influence a number of other factors that influence expectations about ability, quality, and quantity of task-oriented contributions (Ridgeway, 1982).

Interactions involving status-inequity influence all interactants involved. Both high and low-status interactants form lower expectations concerning the contributions of the low-status individual. Further, the influence of individuals with higher status is perceived to be greater (Berger, Cohen, & Zelditch, 1972).

In the context of police interviews and interrogations, the interrogator is in a position of power (Gudjonsson, 2003). The interrogation tactics employed, such as directing the interrogation and interrupting the suspect, are also status cues that reflect a detective’s higher relevant status. This inequality in status may exert an additional influence on source monitoring decisions.

Camera perspective bias research has demonstrated that increasing the visual salience of the suspect leads to a decrease in attributions of the interrogator on such dimensions as dominance and aggressiveness (Lassiter & Irvine, 1986). Also, participants who are presented with a suspect-focus interrogation judge that information is more freely given by the suspect than forced out by the interrogator (Ware et al., 2008). This finding is reversed when the camera is focused primarily on the detective. This may be,
in part, due to more source attributions being made to the detective when he is visually salient and source cues are readily available.

Thus, the status inequity involved in an interrogation may be one type of bias that exerts an influence on source attributions. The influence of status, similar to Hicks and Cockman’s (2003) research on the influence of occupation on source attributions, is proposed to exert an additive influence on source monitoring decisions, beyond the predicted influence of visual salience. Also, stereotypes and preexisting schemas that observers have about police interrogations may be found to further alter source attributions (cf. Mather et al., 1999).

**Multinomial Modeling**

Batchelder and Riefer (1990) have demonstrated that the method initially developed to analyze source monitoring responses (see Johnson & Raye, 1981) confounds memory for an item with memory for the source; these memory judgments have been shown to originate from different memory processes (Broder & Meisser, 2007). Further, the original analysis strategy yokes the memory processes of item and source detection with a number of guessing biases (Riefer, Hu, & Batchelder, 1994). To solve this problem, multinomial models were created that construct independent, theoretically grounded parameters for the origin-of-item task used in source monitoring studies, allowing the contribution of each parameter to be investigated (Batchelder & Riefer, 1990; Batchelder, Hu, & Riefer, 1994; Riefer et al., 1994). This allows disparate functions of memory to be disentangled, specifically the different types of bias and memory processes (Broder & Meiser, 2007).
Multinomial modeling is a statistically based procedure enabling researchers to assess the latent cognitive processes underlying overt behavioral responses (Riefer & Batchelder, 1988; Batchelder & Riefer, 1990). The models are based on the assumption that there are a finite number of latent cognitive processes underlying behavioral responses, and the probability of each process can be represented in the model by hypothetical parameters estimated statistically from observed data (Bayen Murnane, & Erdfelder, 1996; Broder & Meiser, 2007). It is important to note that the hypothetical parameters specified in a given model are theoretically grounded and independent, enabling measurement of the effects of each process on subsequent behavior (Riefer & Batchelder, 1988).

For items presented from two different sources, Batchelder and Riefer (1990) created a model with three separate processing trees for items from Source A, Source B, and new items (denoted N) (see Fig. 1). Thus, each condition has three decision trees. This model analyzes categorical data derived from source monitoring tasks by linking probabilities to the cognitive processes believed to underlie overt origin-of-item responses. Thus, the decision trees connect a given stimulus to overt response categories through sequences of possible cognitive states.

For example, the decision tree for items presented by Source A will have three possible overt responses: the item may be identified as originating from Source A, Source B, or the item may not be attributed to either source resulting in the overt response new. Attributing an item to Source A or Source B can occur through a number of cognitive processes, each identified by a unique probability parameter.
Thus the decision tree for test words presented by Source A (see Fig. 1 tree one) would begin with the probability of detecting the word in memory as “old” with a probability of $D_1$, while failure to recognize a word previously presented by Source A leads to the probability $1 - D_1$. If detected as “old”, there is a probability of correctly identifying the source, Source A ($d_1$) or incorrectly attributing the source to Source B ($1 - d_1$). When the item is correctly detected as “old” but the source of an item is not actually remembered, there is a probability assigned to guessing Source A or Source B ($a$ and $1 - a$, respectively). Further, a guessing bias can exist for words that were failed to be detected as “old.” A guessing bias (associated with the probability parameter $b$) will lead to guessing that the word was “old.” After guessing that a word is “old,” participants would have to guess the source of the word, Source A or Source B ($g$ and $1 - g$, respectively). Finally, an undetected item for which a bias does not exist would be classified as “new,” which is represented by the probability $1 - b$.

The decision tree for test words presented by Source B is very similar to the previous decision tree (see Fig. 1 tree two), and only has two unique parameter values ($D_2$ and $d_2$, both found on the top most branch of the decision making tree). The probability of correctly detecting words previously presented by Source B is represented by the parameter $D_2$. The probability of correctly discriminating that the source of a word correctly identified as “old” is Source B is $d_2$. The probability of correctly recognizing a word as “old” but guessing the source of the word is continues to be represented by $a$, which is still the probability of guessing that the source is Source A ($1 - a$ continues to represent the probability of guessing that the source is Source B, given that the word was identified as “old”). This probability parameter is the same in the all three decision trees.
within a given experimental condition. The probability of guessing that a word is “old” is also represented by the same probability, \( b \), across all decision trees within a condition. The probability of source guessing given that a word was guessed to be “old” is still represented by the parameter \( g \), which shares the same probability value across decision trees within a given condition and continues to represent the probability of guessing the source is Source A.

The decision tree for new items (see Fig. 1 tree three) starts with \( b \), the probability of guessing that a word is “old,” since the word was not previously presented and therefore cannot be correctly detected as “old.” Correctly identifying the word as “new” is represented by \( 1-b \). If the word is guessed to be “old,” then participants must guess the source of the item, which continues to be represented by \( g \), which is the probability of guessing the source is Source A.

Thus, the hypothesized cognitive processes can be placed into three categories (Batchelder & Reifer, 1990; Reifer et al., 1994). *Stimulus detection* is the probability detecting the item within memory and recognizing that it is “old.” This probability is defined by the parameters \( D_1 \) and \( D_2 \) for previously presented items from Source A and Source B, respectively. *Source discrimination, or source identification,* is a conditional probability. If an item is detected as “old,” the participant will then be able to correctly discriminate the source of the item or not. The parameters \( d_1 \) and \( d_2 \), therefore, represent the probability of attributing a correctly detected old item to the appropriate source, A or B, respectively. *Response biases* make up the third category and include parameters for guessing the source when an item is detected as “old” but is not discriminated, or identified, \( a \), for responding “old” to an item that is not actually detected in memory \( b \),
and the probability of guessing the source of an item after having guessed that the item was “old,” which is represented by the parameter $g$. Before model testing, stimulus detection and source discrimination parameters, in the top most branch of the decision trees, have unique values across the two decision trees within a single condition. Response bias parameters have a fixed value across all decision trees within a condition. Thus, before testing a model, the source monitoring multinomial model has seven parameters per condition.

Testing a multinomial model is a two step process. The first step is trying to fit one of the seven models constructed by Batchelder and Riefer (pp.552, 1990). The models set different parameters to be equal across the decision making trees within conditions. Of the seven models described, three are identifiable but do not allow for a goodness of fit test. In order for a model to be identifiable, the number of parameters must be less than the number of degrees of freedom and each parameter must have a unique solution based on the response data. To allow for a goodness of fit test, the number of parameters within each condition must be less than the degrees of freedom.

In order for one of these seven models to be an acceptable fit, the parameters specified by a given model must be set to be equal within each condition (for example, Model 6a sets the detection parameters - $D_1$ and $D_2$ - to be equal, indicating that no differences exist in the probability of recognizing test words spoken by Source A and Source B); two parameters can be assumed to equal if the resulting $G^2$ is not significant. Also, attention should be paid to the confidence intervals for each parameter. Confidence intervals having values less than zero or greater than one indicate that the model does not appropriately capture the data. Determining which of the seven models best fit the data
requires systematic testing of each model by setting the specified parameters to be equal within each condition.

After fitting the data to one of the seven source monitoring models, testing across conditions can begin. Again, parameters that are set to be equal and do not result in a significant increase in $G^2$ are said to share the same value. Thus, these parameter values are not significantly different. When setting parameters to be equal results in a significant increase in $G^2$, the parameter values are significantly different.

Using multinomial modeling, the source monitoring data from the current research can be analyzed in such a way that the unique influence of visual salience, influence, and status on memory for test words, source discrimination, and the relevant biases can be explored. After fitting the data to one of the models outlined by Batchelder and Riefer (1990), hypothesis testing can be done by testing across conditions to discover which parameters differ between conditions and which parameters are unaffected by the factors relevant to the current research.
CURRENT RESEARCH

The current research investigated the role of illusory causation on source monitoring. The influence of this perceptually-based bias on source monitoring decisions had not been previously investigated. It was assumed that, similar to schema-consistent information (Hicks & Cockman, 2003), the overweighting of visual cues associated with increased visual salience act as an independent and additive heuristic, leading participants to make source attributions to the most salient interactant when memory trace is weak. In terms of analyzing this prediction with multinomial modeling, we would say that when the source of an item cannot be discriminated, the source guessing parameters will be greatest for the most visually salient actor.

The current research also conducted preliminary investigations into the influence of status cues on source monitoring. Past research demonstrated that elevated status corresponds to judgments of elevated influence (Berger et al., 1972; Ridgeway, 1982). This may be one schema-related factor that exerts an impact on source monitoring decisions. In order to evaluate the independent affect of status, as well as influence – which is the degree to which an individual directs the course of the conversation, which cannot be disentangled within a police interrogation, Study 1 investigated each factor’s contribution using multinomial modeling. This allowed for a more complete interpretation of each factor when source monitoring was measured within the context of a simulated police interrogation (Study 2), where the detective consistently has higher status and influence, which is made prominent though the application of the Reid Technique when conducting an interrogation (Inbau et al., 2001).
Though camera perspective bias research has found that judgments are consistently shifted by visual salience in both real and simulated police interrogations (Lassiter et al., 2009), it had not yet been demonstrated that source monitoring is also systematically altered by visual salience. Further, source monitoring had not been explicitly investigated in the context of police interrogations, an applied outlet of this research that has been largely overlooked. Also, status could account for additional variance above and beyond the predicted influence of visual salience. It is expected that status cues would have an additive influence on visual salience thus high status combined with high visual salience should ultimately have the greatest influence on source decisions. Following this logic, the influence of status as a cue in source monitoring decisions should be the most apparent in an equal-focus camera format, where visual salience is equal for both interactants.

If confirmed, these predictions may offer additional explanation as to why confession voluntariness and guilt related judgments have been found to be lower when the detective is made salient by camera format (Lassiter & Geers, 2004; Ware et al., 2008). It would suggest that mock jurors are better able to identify the detective as the source of information introduced into the interrogation. This possibility is intriguing as research strongly suggests that other factors in addition to visual salience are responsible for camera perspective bias findings (Ware et al., 2008).

To summarize, the final goal of the current research was to add to past research on source monitoring, illusory causation, status, and camera perspective bias by investigating source monitoring decisions within the applied context of videotaped police interrogations. Through these empirical investigations, the unique contribution of two
different potentially-biasing factors on source monitoring decisions – status and visual salience – may be uncovered. Further, the final study allows for investigation into the influence of source monitoring decisions on confession-related decisions such as voluntariness. Also, by embedding this research into the context of videotaped police interrogations, it will be possible to see how these various factors come together to influence likelihood-of-guilt decisions. Considering the camera perspective is beginning to be considered more strongly in the legal system, this research is both timely and of great importance.

Overview of Pilot Study

External source monitoring cues include visual information (Johnson & Raye, 1981; Raye & Johnson, 1980). Further, visually salient targets have been shown, using eye-tracking equipment, to draw visual attention (Ware et al., 2008). This initial study was conducted to demonstrate the influence of visual salience on source monitoring. It was hypothesized that increasing visual salience by presenting the same interaction from three different camera formats would result in an increase in source attributions in the direction of the most visually salient actor. A linear trend was predicted: the highest number of source attributions to Actor A should occur when Actor A is made visually salient via camera format, the lowest number of source attributions toward Actor A was anticipated to occur when Actor B was made visually salient, and the number of source attributions for Actor A should fall between these conditions when both actors are equally visible. Conversely, the opposite predictions are made for attributions of source for Actor B. Recognition was not predicted to vary across camera format. As mentioned
previously, illusory causation studies have had mixed support for the overrepresentation of salient targets in memory (McArthur, 1981). Thus, increased recognition and/or recall is not necessary to produce illusory causation, and will not reliably occur during conditions of heightened visual salience. Further, source monitoring decisions have been shown to be unrelated to recognition (Johnson et al., 1993).

Also, the effect of visual salience on source monitoring accuracy will be investigated. It is possible that because more visual cues are available for a salient individual this will strengthen the accuracy of source attributions made toward that individual. Prior research has demonstrated that visual attention is directed to information-rich regions, such as the face (cf. Andreassi, 2000). Also, as mentioned earlier, research has demonstrated that making an individual salient by manipulating camera format leads subsequent viewers to direct their visual attention toward the salient actor (Ware et al., 2008). Thus, it is expected that participants will take in more visual information for the most salient actor, and memory trace for the information introduced by the more visually salient actor will be stronger, potentially leading to higher source accuracy.

The above predictions reference the original method for testing source monitoring developed by Johnson and colleagues (see Johnson et al., 1993). However, a strong argument has been put forth that a more appropriate way to analyze this type of data is to apply multinomial model testing. Therefore, the results of this study are presented using both types of analyses to demonstrate the relationship between the two statistical methods.
Method

Materials

Video. The same interaction between two actors was filmed from the three different camera angles typically employed in camera perspective bias research. An equal-focus camera format showed profiles of both actors. In each of the other formats, the camera focused on the front of one of the actors and the back of the other. Both actors were female, and had red curly hair of a similar style and length, to reduce other potential visual cues. Within the interaction, which lasted approximately two min, the actors responded to one another with associated words. For instance, Actor A may have said “monster” to which Actor B responded “scary.” The actors alternated back and forth at measured intervals a total of 15 times, each responding to the other with a single, highly related word.

Origin-of-item test. Participants will be presented with “old” words originating from the videotaped interaction and “new” words not previously presented. Participants will be asked to identify old words and their source, Actor A or Actor B.

Participants

Eighty-one introductory psychology students from Ohio University participated in the study in exchange for partial course credit. Study sessions were run in small groups. Four participants were removed from analyses. Two of these participants had not maintained visual attention throughout the presentation of the video clip. One participant removed the headphones during the video clip. The fourth participant was removed because they reported that they did not recognize any of the words from the video.
Procedures

Participants were escorted to the lab and asked to take a seat at one of the available computer cubicles. After signing an informed consent statement, participants were asked to put on headphones and hit the “ok” button on the computer. The rest of the study was completed on the computer using MediaLab (Jarvis, 2008).

Participants read that they would be watching a short video clip, completing a demographic form, and then completing two word tasks. Participants were randomly assigned to view one of three video formats. Before watching the clip, a photo of both actors was shown with the labels “Actor A” and “Actor B” to ease later identification. After watching the video, participants completed a demographics questionnaire and an anagram task. The maximum amount of time participants could spend on the anagram task was 6 minutes. All anagrams were solvable and all solutions were dissimilar to words presented in the video clip.

Participants were then presented with 60 words that either originated from the video or were new words that were neither spoken in the video nor were possible solutions to any of the anagrams. All 30 words from the video were presented to participants at this stage, though participants were not informed about the number or percentage of words that originated from the interaction. For items identified as old, participants were asked to attribute the word’s origin to one of the two speakers. Each time a word was identified as old, participants were asked to indicate the source (actor) of the word; pictures of both actors, as well as their title (Actor A/Actor B), were presented during the source identification. After completing the task, participants were debriefed, thanked for their participation, and dismissed.
Results

Traditional Analyses

Initial analyses were conducted in line with previous source monitoring procedures. Three items were computed for each participant. 1) A corrected recognition total was obtained by subtracting the number of new words erroneously identified as old (false positives) from the total number of words correctly identified as old (hits). 2) The overall number of source monitoring judgments, both correct and incorrect, was computed for each actor. 3) Finally, a source monitoring ratio for each actor was created by taking the total number of correct source attributions for that actor over the corrected recognition score.

Data were submitted to a 3(Camera Format) x 2(Actor) repeated measures analysis of variance (ANOVA), entering camera format as the between-subjects factor. As expected, visual salience did not significantly alter recognition accuracy, $F(2, 74) = .142, p > .05$ (see Table 1.1 for means and standard deviations). Thus, changes in visual salience did not alter participants’ memory for previously presented words.

It was predicted that increased visual salience, manipulated by camera perspective, would affect the total number of source attributions; this effect should emerge as a Camera Format x Actor interaction. Supporting this hypothesis, the interaction was significant, $F(2, 74) = 7.66, p < .01$. The means are all in the predicted linear pattern (see Table 1.2 for means and standard deviations). Thus, participants presented with a video in which Actor A was made salient made higher numbers of source attributions to Actor A. Participants who viewed the same interaction with the
camera focused primarily on Actor B made the lowest number of source attributions to Actor A. The total number of source attributions made to Actor A by participants in the equal-focus condition fell between the totals obtained in the other camera format conditions. This same linear pattern was seen to occur for Actor B across the three camera conditions.

To investigate whether source monitoring accuracy was influenced by visual salience, a 3(Camera) x 2(Actor) repeated measures ANOVA was run with source monitoring ratios for each actor entered as the within-subjects factor and camera format as the between-subjects factor. One participant was dropped from this analysis because their corrected recognition score was zero, therefore source monitoring ratios could not be computed for this participant. The predicted interaction between camera format and source monitoring accuracy was found to be significant, $F(2, 73) = 13.15, p < .001$. As the pattern of the means indicate, no differences were found in source monitoring accuracy between the two actors when visual salience was made even by the presentation of an equal-focus camera format. However, source monitoring accuracy is lower for the least visually salient actor and higher for most visually salient actor (see Table 1.3 for means and standard deviations).

**Multinomial Model**

The following findings have been included to demonstrate how multinomial modeling compares to more traditional statistical analyses. Following the procedures outlined by Batchelder and Riefer (1990), the testing of the multinomial model followed a two step process. The first step is to find which of the seven possible source monitoring
models best fit the data by setting parameters to be equal within condition. This first step revealed that Model 5C best fit the data. This model sets the source discrimination parameters \(d_1\) and \(d_2\) to be equal and the source guessing parameters equal \(a\) and \(g\). Thus, within each condition, when a word is successfully detected as “old,” there is an equal chance of correctly discriminating the source of the word, regardless of which actor said the test word in the video. And setting the source guessing parameters to be equal within condition means that guessing the source, either when a word is correctly identified as “old” but the source of the word cannot be remembered or when the word is guessed to be “old,” has the same probability of guessing that the source of the word is Actor A. Conversely, the probability of guessing that the source of a word is Actor B is also the same regardless of whether the word was detected in memory as “old” or guessed to be “old” \((1-a)\). Thus, using Model 5C we get a non-significant test statistic, \(G^2(3)=2.528, p = .470\), and an identifiable model.

Once an identifiable model, of the seven source monitoring models described by Batchelder and Riefer (1990), has been shown to fit the data, we move on to the second step of model testing. This step involves testing across conditions by setting parameters to be equal. As with all multinomial model testing, if setting a given pair of parameters to be equal leads to a significant increase in \(G^2\) then the parameters have significantly different values. Using this process, the final model was obtained.

The final model of the pilot results set the detection parameters to be equal across conditions, such that \(D_{1B} = D_{1E} = D_{2A} = D_{2B} = D_{2E}\), leaving \(D_{1A}\) to vary freely. This demonstrates that the accuracy rates of detecting “old” words in memory, referred to as recognition in the source monitoring literature, are equal across conditions with the
exception of words presented by Actor A when Actor A is made visually salient. The probability of correctly detecting a test word as “old” is .638, unless Actor A presented the word and was made visually salient via camera format. When Actor A is made visually salient, words said by this actor in the video have a statistically higher probability of being detected as “old” (.710). This finding differs from the ANOVA results, where no significant differences in overall recognition or corrected recognition were found, where overall recognition and corrected recognition collapse across actor. To follow up on this finding, the total number of words said by Actor A that were identified as “old” were submitted to a one-way ANOVA and a contrast to determine whether more traditional analyses would detect this difference (contrast values were -1 for equal and Actor B focus conditions and +2 for Actor A condition). Though the main effect was not significant, $F(2,74) = 2.104, p > .05$, the contrast did reach a moderate level of significance, $t(74) = 1.699, p = .09$ (see Table 1.4 for means and standard deviations).

Guessing parameters were set to be equal within conditions. Thus, when Actor A was made salient, participants attributed the source of the words to this actor with equal likelihood whether they accurately detected the word as “old” or were merely guessing that a word was “old” in all conditions ($a_A=.556$). The probability of guessing that Actor A was the source of a word when Actor B was made salient was significantly lower ($a_B=.378$); thus the probability of guessing that the source is Actor B is $1-a (.622)$. And the probability of guessing that Actor A was the source of a word when both actors were equally salient fell between the other two source guessing parameter values ($a_E=.488$). The probability of not detecting a word but guessing that it was “old” was the same across conditions (.051), so visual salience did not influence the likelihood of guessing
that a word was “old” if it was not detected in memory. Finally, the discrimination parameters were set to be equal across all conditions (.070). Thus, regardless of which actor introduced a test word, if the word was detected as “old,” there was an equal likelihood of correctly attributing the source. Visual salience had no influence on source discrimination when a word was correctly identified as “old.” Thus, the final model appropriately remains non-significant, $G^2 (7) = 4.27, p = .747$ (see Table 1.5 for parameter values and incremental $G^2$).

Discussion

The results support the initial hypothesis that increased visual salience of a particular target will correspond to an increase in the total number of source attributions related to that target. Because participants are discriminating between two external sources, the actors in the video, the same cue categories are available for both sources. Heightened visual salience of one source likely led to the overweighting of the visual cue category for the actor whose salience was increased by the camera format, as visual availability of the two actors was the only difference between camera format conditions. Note that only source attributions were affected by increased salience, whereas recognition was not influenced by an increase in visual cue availability by traditional source monitoring analyses. Therefore, consistent with prior source monitoring research (Johnson et al., 1993), there is no indication that other memory functions were significantly altered by presentation format.

Further, source monitoring accuracy was found to be influenced by visual salience. Whereas similar source monitoring ratios emerged across actors when an
interaction was presented in an equal-focus format, a decrease in source monitoring accuracy was seen to accompany a reduction in visual salience. Also, an increase in source monitoring accuracy was seen to occur when an actor was more visually salient.

Using multinomial modeling to reanalyze these data, we are able to see where visual salience is impacting source monitoring decisions. Interestingly, and unexpectedly, we see that making Actor A salient increases the probability that words spoken by this actor will be detected as “old.” However, this does not impact the probability of accurately discriminating the source of the words. No other memory differences, word detection (recognition) or source discrimination, were found. However, visual salience did bias participants’ source guessing. When a memory for the source could not be found and participants were forced to guess the source of a word, we see that visual salience systematically biases this type of guessing. The most visually salient actor has a higher probability of being guessed as the source of a word. Thus visual salience does bias source monitoring decisions.

These initial findings demonstrate that visual salience does lead to systematic shifts in source attributions, demonstrated by the greater number of source attributions assigned to the most salient actor, as well as source monitoring accuracy shifts. This was seen to occur with relatively simple source monitoring decisions and with a very brief period between encoding and the origin-of-item test. Considering that source monitoring errors have been demonstrated to increase with an increase in time between encoding and origin-of-item tests (Tuckey & Brewer, 2003), it was expected that a longer delay would increase the strength of these findings.
Overview of Study 1

The previously reported study provided preliminary evidence that visual salience can lead to overweighting of visual cues, resulting in an increase in source attributions to the most visually salient individual within an interaction. In accordance with the source monitoring model, relevant biases can lead to adoption of inappropriate source decision criteria and the use of heuristic cues (Johnson et al., 1993). However, the influence of a perceptually based bias had not been previously investigated within the source monitoring literature. Study 1 seeks to replicate and extend the findings of the pilot study. By using a more complex video stimulus and a longer delay between stimulus presentation and the origin-of-item test, the findings in the pilot study were expected to be strengthened. Translated into the multinomial modeling paradigm, it was expected that source guessing would be biased in the direction of the most visually salient actor.

The second purpose of this study was to investigate the possible influence of status cues on source monitoring decisions. The status associated with two interactants was manipulated. Half of the participants were told Actor A was an undergraduate student and Actor B was a graduate student. The status of the actors was reversed for the other half of the participants. In this manner, the potentially additive influence of status on visual salience was investigated within source monitoring decisions. Similar to visual salience, it was expected that the impact of status would be seen on source guessing. Because status cues were hypothesized to have an additive effect, it was expected that heightened visual salience of a high status actor would lead to the largest amount of bias. Finally, when an interaction was presented in equal-focus format, only the actors’ status should influence bias for source guessing.
It was hypothesized that status would be employed as a heuristic when memory trace is weak. Thus, it was predicted that participants would be more likely to assign a source attribution toward a high status actor when memory trace was weak – source guessing, and this occurrence was expected to be even more likely when the high status actor was made visually salient due to the increase in visual cues.

However, Frey and Newton (1973) have shown, by employing unitization, that participants encode the behavior of a high status individual more finely. So more attention could have been paid to the higher status individual and increasing the likelihood of correctly identifying the high status individual as the source of a detected word; this would be represented by higher source discrimination parameters ($d_1$ and $d_2$), meaning that when a word had been correctly identified as “old” the probability of accurately assigning source attributions would be higher for the actor with higher status. But because other research suggests that more attention is paid to a higher status individual only when that individual is likely to influence the observer’s behavior or outcomes (Fiske, Lin, & Neuberg, 1999), this hypothesis is tentative.

Finally, not all interactions are an equal back and forth exchange. Certainly, police interrogations are largely one-sided affairs. Thus, this study utilized a video in which one actor had a disproportionate influence on what information was exchanged. This allows for investigation of influence divorced from status, since status will be altered across condition. Influence, such as asking more questions, is a unique factor that cannot adequately be investigated in the context of an interrogation, because the investigator has both higher influence and higher status. Therefore, this study employed a video in which one actor asks the majority of the questions to determine if increased
influence had an effect on source monitoring. It was hypothesized that, similar to status, influence would increase the probability of correctly discriminating source when a word was accurately identified as “old.”

*Status Pilot*

Before status can be manipulated in Study 1, it must first be shown that undergraduates actually perceive graduate students as having higher status. To test this, 24 Ohio University undergraduate students (12 male, 12 female) were approached and asked to answer 2 questions. The questions were presented on a single piece of paper and were prefaced with the definitions of status provided by Merriam-Webster (merriam-webster.com): status definition 1) Position or rank in relation to others; status definition 2) Relative rank in a hierarchy of prestige. The two questions, the order of which was counterbalanced, asked “In the context of a university setting, how high is an undergraduate student’s status?” and “In the context of a university setting, how high is a graduate student’s status?” Responses to both questions were on a 9-point scale, anchored at “extremely low” and “extremely high” with higher numbers indicating higher status.

These data were submitted to a paired samples t-test. Undergraduate Ohio University students reported that graduate students have significantly higher status ($M = 6.67$, $SD = 1.37$) than undergraduate students ($M = 5.13$, $SD = 1.78$), $t (23) = 4.156$, $p < .001$. Therefore, the pretense for using graduate and undergraduate labels to manipulate status is justifiable.
Hypotheses

Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger For The Actor Who Was Made Visually Salient

In Study 1, participants were presented with one of three camera formats of the same interaction between two actors. It was hypothesized that the parameters associated with source guessing (a and g) would be greater for the actor made visually salient via camera format. This would demonstrate that visual salience is associated with a bias that leads observers to guess that the more visually salient actor is the source of a word when the source cannot be found in memory.

Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Actor With Higher Status

It was hypothesized that the parameters associated with source guessing (a and g) would be larger for the actor identified as a graduate student because this higher status was used as a heuristic cue when guessing the source.

Hypothesis Three: Source Discrimination Parameters (d2) Would Be Larger For The Most Influential Actor

It was hypothesized that the number of correct source monitoring attributions would be higher for the more influential actor, Actor B who asks 8 of the 10 questions in the video, when a word is first correctly detected in memory as “old.”
Hypothesis Four: Higher Actor Status Would Be Associated With a Higher Source Discrimination Parameter Value (d₁ And d₂)

It was hypothesized that the actor identified as a graduate student would elicit more correct source monitoring attributions, when the word was first correctly detected in memory as “old,” than the actor identified as an undergraduate student, independent of visual salience.

Hypothesis Five: Correct Detection Of “Old” Words (D₁ And D₂) Would Not Significantly Differ Across Status, Actor, or Camera Perspective

It was hypothesized that no correct detection differences of “old” words would be seen across conditions, which would be demonstrated by all detection parameters sharing the same value.

Method

Participants

One hundred and forty-two introductory psychology students from Ohio University were recruited from the online recruitment system to participate in exchange for partial course credit.

Design

Study 1 employed a 3 (camera format: Actor A focus, Actor B focus, equal focus) X 2 (high vs. low status) X 2 (Actor A/Actor B) design.
Materials

Video. Video materials were those employed by Briggs and Lassiter (1994), which have been shown to produce illusory causation and to adequately manipulate influence. One version of the same scene, filmed from three different camera perspectives corresponding to the perspectives typically employed within the camera perspective bias research, was presented to participants. The actors in the video, both females with short dark hair and dark blue shirts (to reduce other potential visual cues), were engaged in a getting acquainted conversation in which each actor introduced unique information. The most influential actor asked 8 out of 10 questions. The amount of speech was approximately equal throughout the conversation.

Status Manipulation. Status was manipulated by introducing the following information to participants prior to showing them photos of the actors:

“The video that you are about to watch was created for a different study. In the video, the actors are both presenting themselves as undergraduates. However, Actor A, who is on the far right in the video, is actually a graduate student and Actor B is an undergraduate research assistant.” This information was given when Actor A was assigned high status. The Actor A and Actor B designation was reversed when Actor B was assigned high status.

Origin-of-item test. Both old items presented in the video and new items were presented to participants one at a time. Participants were asked to identify which items they recognized from the video. For items identified as old, participants were asked to indicate which of the two actors introduced the information. When making a source
judgment for items identified as old, photos and relevant labels (e.g., Actor A and Actor B) were shown to assist participants in making accurate source judgments.

Procedure

The procedure was identical to the methodology employed in the pilot study with the following modifications. Instead of watching single words being exchanged between the actors, participants were presented with a more information-rich scenario. The actors in the video were identified as being either an Ohio University graduate student or an Ohio University undergraduate student prior to the presentation of the video. After presentation of the video stimulus, participants completed an approximately 15 min filler task, which included filling out demographic information, completing anagrams for 6 min and answering short response questions, before completing the origin-of-item test, which included 10 “old” words from each actor and 20 new words. After the origin-of-item test participants were thanked and debriefed.

Results

Due to the differences between multinomial modeling and more common statistical analyses (Riefer & Batchelder, 1988), a brief summary of the model will be given before relating the model results to the hypotheses outlined below. Within each condition, all the discrimination parameters could be set to be equal \((d_1=d_2)\) as well as all source guessing parameters \((a=g)\). This is consistent with Model 5C, which also fit the pilot data. Therefore, the starting point for the final model is Model 5C, which was appropriately non-significant \(G^2(6)=7.817, p=.251\).
The probability of detecting old words presented by Actor A ($D_1$) was equal across camera perspective as well as across status ($D_1=.753$). The probability for correctly detecting “old” words presented by Actor B was the same across camera format as well as status ($D_2=.796$) with a single exception, the parameter value for the condition where the most influential actor was assigned high status and was made visually salient, was significantly greater ($D_{24}=.911$). The probability of detecting “old” words presented by Actor A ($D_1$) could not be set to be equal to the probability of detecting “old” words presented by Actor B ($D_2$), as this led to a significant increase in $G^2$. The same is true for attempting to set the detection parameter for the most influential actor when this actor was assigned high status and made visually salient, $D_{24}$, equal to the other detection, $D_2$, parameters. Further, the discrimination parameters, which indicate the probability of a correct source decision if a word was correctly identified as “old,” could be set to be equal across conditions, so all $d_1$ and $d_2$ parameters share the same value ($d=.432$).

As mentioned, the guessing parameters ($a$ and $g$) could be set to be equal within each condition, meaning that the probability of guessing that Actor A is the source of a word, either when a test item is properly identified as “old” or guessed to be “old,” is the same. However, an interesting pattern was discovered across conditions. The guessing parameters across conditions where Actor A was made visually salient, regardless of status, were found to share the same value ($g=.465$) as the equal focus condition where Actor A was assigned high status. Likewise, the guessing parameters for conditions in which Actor B was visually salient, regardless of status, were the same as the condition in which visual salience was equal and Actor B was assigned high status ($g=.380$), which is significantly lower than the guessing parameters shared by the other three conditions. The
guessing parameters \((a \text{ and } g)\) represent the probability of guessing the source of a test word to be Actor A. Therefore, in conditions where Actor B is visually salient, or is assigned high status when visual salience is equivalent, there is a higher probability of guessing that the source of a word is Actor B.

Finally, a difference was found across conditions in the probability of guessing that a word is “old” \((b)\). Conditions where visual salience is high for the low status actor, as well as conditions in which visual salience is equal, all share the same bias toward guessing that a word is “old” \((b=.128)\). Conditions where the visually salient actor is also assigned high status share a significantly higher bias parameter value \((b=.169)\). The final model is identifiable and achieves an acceptable goodness of fit, \(G^2=32.84, \text{df}=28, p=.241\) (see Table 2.1 for parameter values and incremental goodness of fit values).

**Hypothesis One: The Source Guessing Parameters (a And g) Would Be Larger For The Actor Who Was Made Visually Salient**

The model supports this hypothesis. Based upon the final model, the manipulation of visual salience leads to significant and systematic biases in guessing the source of a word. Parameters \(a\) and \(g\) represent the probability of guessing that the source of a test word is Actor A, when the word is correctly detected in memory as “old” but the source cannot be remembered or when a word is guessed to be “old,” respectively. Across the two conditions for which Actor A is made visually salient, the guessing parameters are set to \(a=g=.465\), meaning that participants have a .465 probability of guessing that Actor A is the source of a word when Actor A is made visually salient. The guessing
parameters share this same value regardless of whether Actor A was assigned high or low status.

When Actor B was made visually salient, there is only a \( g = 0.380 \) probability that participants would guess that Actor A was the source of a word. Meaning that, regardless of Actor B’s status, when Actor B was visually salient there was a \( 1 - g = 0.62 \) probability that participants would guess that Actor B was the source of a word.

Interestingly, the source guessing parameters are always larger for Actor B, who consistently had higher influence. So, though visual salience does impact source guessing, it never negates the affect of influence.

Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Actor With Higher Status

The effect of status on source guessing was supported only when visual salience for both actors was equal. Within the equal focus condition, when Actor A was assigned high status the probability of guessing that Actor A was the source of a test word was equal to the probability of source guessing when Actor A was made visually salient \( (g = 0.465) \). Likewise, when an equal focus video is shown and Actor B is assigned high status, the source guessing parameter value is the same as when Actor B is made visually salient \( (g = 0.380) \).

Thus status has the same level of influence on source guessing as visual salience does, within the equal format video. However, status does not influence source guessing when an actor is also made visually salient.
Hypothesis Three: Source Discrimination Parameters \( (d_2) \) Would Be Larger For The Most Influential Actor

The third hypothesis was not supported by the model. Actor B, who asked 8 of the 10 questions in the video, was not associated with more accurate source discrimination when a word was correctly identified as “old.” In fact, source discrimination was equal across all conditions. If a word was correctly identified as “old,” participants had a \( d = .432 \) probability of making a correct source attribution.

Hypothesis Four: Higher Actor Status Would Be Associated With a Higher Source Discrimination Parameter Value \( (d_1 \) And \( d_2) \)

The fourth hypothesis was not supported by the model. Status was not associated with more accurate source discrimination when a word was correctly identified as “old.” As stated previously, source discrimination was equal across all conditions. If a word was correctly identified as “old,” participants had a \( d = .432 \) probability of making a correct source attribution. Therefore, memory for source is not influenced by status.

Hypothesis Five: Correct Detection Of “Old” Words \( (D_1 \) And \( D_2) \) Would Not Significantly Differ Across Status, Actor, or Camera Perspective

This hypothesis was partially supported. Correctly identifying a word as “old” for words introduced by Actor A all shared the same parameter value \( (D_1 = .753) \), meaning that words spoken by Actor A in the video had a .753 probability of being identified as “old” regardless of actor status or visual salience.

Words introduced by Actor B had a significantly greater probability of being identified as “old,” \( (D_2 = .796) \). However, there was exception. When Actor B, the most
influential actor, was visually salient and had high status, there was a $D_{24}=.911$
probability that words spoken by this actor would later be correctly identified as “old.”
Thus, words spoken by Actor B, who consistently had higher influence, had a
higher probability of being recognized as “old.” Visual salience and status did not affect
the probability of correctly detecting “old” test words. Finally, it is important to note that
correct detection of “old” words does not lead to a higher probability of making a correct
source judgment. Source discrimination for “old” words did not differ significantly across
condition.

Discussion

Regardless of camera perspective or status, the probability of detecting that an
“old” word presented in the video by Actor A had previously been presented was $D_{1}=.753$. The probability of detecting an “old” word presented by Actor B was slightly
higher, with a probability of $D_{2}=.796$. However, the probability of detecting “old” words
presented by Actor B, the most influential actor, when this actor had high status and was
made more visually salient due to camera format was much higher, with a probability
parameter of $D_{24}=.911$. Having higher influence, asking 8 of 10 questions, led to a
significantly higher probability of detecting “old” test words. Further, when an influential
person, who directs the flow of the conversation by asking more questions, has high
status and is made visually salient the verbal information they present seems to be
remembered more accurately.

All the discrimination parameters within and across conditions were found to
have the same value. This means that the likelihood of discriminating the appropriate
source for words appropriately detected as “old” is equal across conditions. Specifically, if participants remembered that a word presented in the video was “old,” then they had a $d=0.432$ probability of making an appropriate source attribution, and this was not influenced by status or visual salience.

The probability of recognition guessing, guessing that a word was “old” when it could not specifically be found in memory, was $b=0.128$ across conditions where the high status actor was not made visually salient, either because visual salience was equal or the other actor was visually salient. However, when a high status individual was made visually salient the probability of guessing that a word was “old” was significantly higher at $b=0.169$. These results demonstrate that making a high status individual visually salient increases observer’s bias to guess that a word had been previously presented.

Finally, we see that source guessing, $g$, is equal within condition, meaning that it is equally likely that an observer guesses that the source of a word either detected as “old,” or guessed to be “old,” is Actor A. However, the probability of guessing the source is Actor A, $g$, varies across conditions. When Actor A is made visually salient, the probability of guessing that the source of a word is Actor A is the same as when Actor A has high status but is equally visually salient. That probability is found to be $g=0.465$. When Actor B is made visually salient or has high status in an equal focus condition, the probability of guessing that the source of a word is Actor A is significantly lower, $g=0.380$.

To summarize the model, high influence was found to be related to a higher probability of correctly detecting test words as “old.” We see that combining high influence, high status, and high visual salience also has an impact on memory, such that
words spoken by this individual are recognized significantly better. Neither status nor visual salience impacts the probability of correctly identifying the source of a test word that has been correctly detected as “old.” However, the probability of recognition guessing, guessing whether a word is “old,” is biased by the combined impact of visual salience and status while the level of influence within the conversation does not affect this guessing bias. Finally, the probability of guessing the source of a word is affected by visual salience. When an actor is made visually salient it is significantly more likely that he/she will be guessed to be the source of a test word, regardless of whether the word was actually remembered to be “old” or guessed to be “old.” Status was not found to shape source guessing when one actor was made more visually salient. However, when visual salience was equal, status was found to lead to the same level of source guessing as visual salience.

Overview of Study 2

Study 2 sought to demonstrate that source monitoring shifts occur in a simulated police interrogation in a systematic fashion based on the visual salience of the suspect and the detective, which was manipulated by camera perspective. Because of the nature of a police interrogation, and the simulation video employed, status and influence of the actors cannot easily be manipulated. However, status was expected to inflate source monitoring attributions for the detective, due to the status inequalities present in the interrogation context.

Further, it was posited that source monitoring attributions would influence voluntariness judgments. The relationship between the number of source monitoring
attributions made for the suspect and voluntariness judgments was investigated using meditational analyses in an attempt to demonstrate how source monitoring may impact important confession-related judgments. Camera perspective has already been shown to be related to biased judgments of voluntariness (Lassiter, Beers et al., 2002; Lassiter et al., 2006; Ware et al., 2008). However, as the pilot study initially indicates camera perspective also affects source monitoring attributions, it is expected that source monitoring will influence judgments made from videotaped interrogations.

This study will broaden the applicability of source monitoring research, which has already been applied to eye-witness decisions (Lindsay & Johnson, 1989). This study will further demonstrate the necessity for research-based guidelines for videotaping police interrogations by demonstrating that source monitoring attributions, which are shifted by camera format, are related to voluntariness judgments. Finally, it is possible that the scenarios introduced by police during an interrogation, in combination with the tactics employed in an attempt to elicit a confession, lead subsequent decision makers to attribute these details to the suspect. No specific hypotheses will be made concerning this research question, but this study will allow for later investigation into this possibility.

**Hypotheses**

*Hypothesis One: The Source Guessing Parameters ($a$ and $g$) Would Be Larger For The Actor Who Was Made Visually Salient*

It was hypothesized that the parameters associated with source guessing ($a$ and $g$) would be greater for the actor made visually salient via camera format. This would demonstrate that visual salience was associated with a bias that leads observers to guess
that the more visually salient actor was the source of a word when the source cannot be found in memory.

**Hypothesis Two: The Source Guessing Parameters (a And g) Would Be Larger For The Detective**

It was hypothesized that the parameters associated with source guessing \((a \text{ and } g)\) would be larger for the detective because this higher status would be used as a heuristic cue when guessing the source of a given word when it cannot be specifically found in memory.

**Hypothesis Three: The Detective’s Higher Status Would Lead To A Higher Source Discrimination Parameter Value \((d_1)\)**

It was hypothesized that the detective, who has higher status, would elicit more correct source monitoring attributions, when the word was first correctly detected in memory as “old,” than the suspect, independent of visual salience. Again, this was posited to occur because status would be used as a heuristic cue during source monitoring.

**Hypothesis Four: Correct Detection Of “Old” Words \((D_1 \text{ And } D_2)\) Would Not Differ Significantly Across Status, Actor, or Camera Perspective**

It was hypothesized that all detection parameters \((D_1 \text{ and } D_2)\) would share the same value, demonstrating that no correct detection differences of “old” words would be seen across conditions.
Hypothesis Five: Higher Visual Salience, Manipulated by Camera Format, Would Elicit Higher Voluntariness Judgments

It was hypothesized that, similar to previous camera perspective bias research (Lassiter, Beers, et al., 2002; Lassiter et al., 2006; Ware et al., 2008), increased voluntariness judgments would correspond to increased visual salience of the suspect. A linear trend was hypothesized, such that voluntariness judgments would be highest in the suspect-focus condition, lowest in the detective-focus condition, and judgments elicited from the equal-focus condition would fall in between the other two conditions.

Hypothesis Six: Total Number of Attributions Toward the Suspect Would Mediate the Influence of Camera Format on Voluntariness Judgments

It was hypothesized that the total number of source attributions made toward the suspect would mediate the influence of camera format on voluntariness judgments. This was hypothesized to occur because the more information in the interrogation context identified as originating from the suspect should influence participants’ judgments of the voluntariness of the suspect’s confession.

Method

Participants

Fifty-eight introductory psychology students from Ohio University were recruited from the online recruitment system to participate in exchange for partial course credit. One participant was removed from all analyses because the same response was hit throughout the origin-of-item test.
Design

Study 2 employed a 3 (camera format: detective-focus, suspect-focus, equal-focus) X 2 (suspect, detective) design.

Materials

Simulated confession. A simulated murder interrogation was presented to participants in either the suspect-focus, detective-focus, or equal-focus camera format. This simulation was cut from the Bradley Page trial simulation described earlier, which is known to be a coerced false confession.

Origin-of-item test. Both old items presented in the interrogation simulation and new items were presented to participants. Participants were asked to identify which items they recognized from the video. For items identified as old, participants were asked to indicate whether the information was introduced by the detective or the suspect. Pictures and labels of the suspect and detective were shown on the screen when participants were asked to make source judgments.

Voluntariness judgments. Measures taken from previous camera perspective research (Ware et al., 2008) were used to identify participant’s judgments of the voluntariness of the suspect’s confession. For example, participants will be asked to indicate whether the “suspect’s confession was...” forced out of the suspect by the detective (1) or given freely by the suspect (9). Other questions will ask participants to indicate “how the suspect’s confession was obtained?” (1 = the confession was coerced, 9 = the confession was given voluntarily) (see Appendix A: Confession Questionnaire).
Procedure

The procedure was the same as the methodology employed in the pilot study with the following modifications. Instead of watching single words being exchanged between the actors, participants were presented with a simulated police interrogation. Prior to starting the study, participants were told that they would be watching a video clip of a police interrogation and were read a brief definition of coercion typically presented to participants before they take part in a camera perspective bias study. After being presented with the interrogation, participants engaged in a 15 to 20 min distracter task before completing the origin-of-item test. Again, this task consisted of completing demographic information, 6 min of anagrams, and typing short responses to a number of unrelated questions. Following the origin-of-item test, which contained 11 “old” words from both the detective and suspect and 22 new words, participants completed the voluntariness questionnaire before being debriefed.

Results

Before addressing the hypotheses, a synopsis of the final model is discussed. Unlike the previous studies, Study 2 data could not be fitted to Model 5C. This was because the source guessing parameters could not set to be equal within each condition. Instead, the final model was built off of Model 6B. Model 6B only sets the source discrimination parameters to be equal within each condition \( (d_1=d_2) \). However, because this leaves the model with six free parameters within each condition, there are zero degrees of freedom. This means that though the model is identifiable, it does not allow for a goodness of fit test.
Batchelder and Riefer (1990) do address this issue and allow for further testing of a model across conditions given that the confidence intervals of the parameters are not too expansive. Scrutiny of the confidence intervals that are associated with the parameters suggest that the model is an acceptable fit (see Table 3.1 for parameter estimates and confidence intervals for Model 6B). Therefore, we move on to testing parameters across the conditions, building from Model 6B, $G^2(0)=0.00$.

The detection parameters for words spoken by the detective could be set to be equal across all conditions ($D_1=.731$). Likewise, the detection parameters for words spoken by the suspect could be set to be equal across all conditions ($D_2=.488$). Thus, there are significant differences between the probabilities of correctly identifying that a word was “old” between words spoken by the detective and words spoken by the suspect.

The discrimination parameters, which are associated with the probability of correctly identifying the source of an “old” word given that the word was correctly identified as “old,” could be set to be equal across conditions. The probability of correctly identifying the source of a test word was $d=.572$. This probability does not significantly differ between the detective and suspect.

The recognition guessing bias parameter ($b$), representing the probability of guessing that a word is “old,” was the same for the two visual salience conditions, which were significantly different from the equal focus condition. The probability of guessing that a word was “old” when either the suspect or the detective was made visually salient was $b=.189$. This probability is significantly greater than the probability of guessing that a word is “old” if the same confession was presented in an equal focus format ($b=.135$).
Finally, the source guessing parameters \((a\) and \(g\)) were not found to be the same depending on whether a word was correctly detected as “old” \((a)\) or was guessed to be “old” \((g)\). However, the probability of guessing that the source of a word was the detective given that the word was correctly detected as “old” was the same across all conditions \((a=.788)\). When a word was guessed to be “old” the probability of guessing that the source was the detective was \(g=.627\) in all conditions (see Table 3.2 for parameter values and incremental \(G^2\)).

**Hypothesis One: The Source Guessing Parameters \((a\) And \(g)\) Would Be Larger For The Actor Who Was Made Visually Salient**

Hypothesis one was not supported by the final model. Visual salience did not influence the source guessing parameters. There was an \(a=.788\) probability of guessing that the source of a word was the detective given that the word was correctly detected as “old” was the same across all conditions. When a test word was guessed to be “old” the probability of guessing that the source of that word was the detective was \(g=.627\) across all conditions.

**Hypothesis Two: The Source Guessing Parameters \((a\) And \(g)\) Would Be Larger For The Detective**

This hypothesis was supported by the final model. There was a \(a=.788\) probability of guessing that the detective was the source of a word, given that the word was correctly detected as “old,” across all conditions. Conversely, the probability of guessing that the suspect was the source of a word when that word had been correctly detected as “old” is only \(1-a=.212\). When a test word was guessed to be “old,” the probability of guessing
that the detective was the source of that word was $g = .627$ in all conditions. Thus, the probability that the suspect was guessed to be the source of a word when the word was first guessed to be “old” was only $1-g = .373$.

*Hypothesis Three: The Detective’s Higher Status Would Lead To A Higher Source Discrimination Parameter Value ($d_1$)*

This hypothesis was not supported by the final model as all source discrimination parameters share the same value ($d_1 = .572$). Therefore, status does not influence source attributions for words that were detected as “old.”

*Hypothesis Four: Correct Detection Of “Old” Words ($D_1$ And $D_2$) Would Not Differ Significantly Across Status, Actor, or Camera Perspective*

This hypothesis was partially supported by the final model. There was no significant difference in detecting test words as “old” across camera perspective conditions. However, there were significant differences between the probabilities of recognizing that words spoken by the detective were “old” ($D_1 = .731$) and words spoken by the suspect ($D_2 = .488$). What this demonstrates is that words spoken by the detective, regardless of camera format, had a higher probability of being identified as being “old.” Again, this judgment does not mean that words correctly identified as “old,” having been presented in the video, will have a higher probability of being correctly attributed to the source, which is captured by the parameters $d_1$ and $d_2$. 
Hypothesis Five: Higher Visual Salience, Manipulated by Camera Format, Would Elicit Higher Voluntariness Judgments

It was hypothesized that increased voluntariness judgments would correspond to increased visual salience of the suspect, resulting in a linear pattern of voluntariness judgments. To investigate this hypothesis, a voluntariness judgments index was created and submitted to a one-way ANOVA. Contrast weights were assigned to identify the predicted linear trend: +1 to the suspect-focus condition, 0 to the equal-focus condition, and -1 to the detective-focus condition. The index comprised three questions: “To what degree did the detective determine the kind of information exchanged?” “Who would you say was most in control of the situation?” and “How was the suspect’s confession obtained?” Though the means were in the predicted linear pattern, the contrast failed to reach significance, $t(54) = .813$ (see Table 3.3 for means and standard deviations). Therefore, this hypothesis was not fully supported.

Hypothesis Six: Total Number of Attributions Toward the Suspect Would Mediate the Influence of Camera Format on Voluntariness Judgments

Regression analyses were conducted in line with the Baron and Kenny’s (1986) guidelines to test for mediation. First the relationship between camera format and voluntariness judgments was identified and found to be non-significant, $p > .1$. It is therefore inappropriate to continue with a meditational analysis. Thus, the data failed to support this hypothesis.
Exploratory Analyses

To further investigate the relationship between source monitoring responses and confession related judgments, exploratory analyses were conducted. The total number of source monitoring judgments made toward the suspect, measured with a one-way ANOVA, did not significantly differ across camera format, $F(2,54)=.302$, $p > .1$. Further, source attributions toward the suspect was not significantly correlated with the voluntariness index, $p > .1$. However, the total number of source monitoring judgments made toward the detective was found to be moderately different across camera format when measured by a one-way ANOVA, $F(2,54)= 2.677$, $p = .07$ (see Table 3.4 for source monitoring means and standard deviations). Also, the number of source attributions toward the detective was positively correlated with a number of confession judgments. A significant positive relationship was found between detective source attributions and how much the detective determined what information was exchanged, $r(55)=.34$, $p=.01$. A significant positive relationship was also found between detective source attributions and the degree to which the detective was seen to cause the suspect’s behavior, $r(55)=.331$, $p < .01$. Both of these questions are inversely related to voluntariness. The correlation between the voluntariness index and the number of source attributions toward the detective was moderately significant $r(55)=-.221$, $p=.09$. This further demonstrates that there is a negative relationship between attributing the introduction of information to the detective and perceptions on confession voluntariness, the more source attributions that are made toward the detective the less voluntary the confession was perceived to be. Also, the number of source attributions made toward the
detective was significantly related to how likely the suspect was considered to be guilty, $r(55) = .273, p < .05$ (see Table 3.5 for correlations).

**Discussion**

Within the context of a videotaped police interrogation, we see that the probability of detecting a test word in memory is significantly higher for words originally introduced by the detective ($D_1 = .731$) than for words introduced by the suspect ($D_2 = .488$). This parallels the model results from Study 1, where words said by the most influential actor, who spoke the same amount but asked 8 out of 10 questions, had a higher probability of being correctly detected as “old.” In Study 1, the difference between the probability of detecting a word as “old” when it was said by Actor A ($D_1 = .753$) or Actor B ($D_2 = .796$) was significant but relatively small. The one exception to this finding was when the most influential actor was assigned high status and was made visually salient. This increased the probability of participants’ detecting test words presented by Actor B to $D_2 = .911$. Here in Study 2, we are seeing a large difference in the probability that test words will be detected as “old,” depending on whether they were introduced by the influential, high status detective or the suspect. However, visual salience does not increase the probability that words spoken by the detective will be more likely to be detected as “old.” All detection parameters are equal across the different camera formats and only vary between our two speakers. Further, we found no differences between any of the conditions on the probability of correctly discriminating the source of a test word that had been correctly detected as “old.” Similar to pilot and Study 1 model results,
having a higher probability of recognizing that a word had been previously presented did not influence the probability of attributing its source to the correct speaker.

The recognition guessing parameter \( (b) \) was found to be influenced by visual salience. The probability that a test word was guessed to be “old” was significantly greater when either the detective or the suspect was made visually salient \( (b=0.189) \) than when the same police interrogation was presented in an equal camera format \( (b=0.135) \). This finding diverges from the model in Study 1, where guessing bias was only influenced by visual salience when the actor had also been assigned high status.

The source guessing parameters in Study 2 were unable to be set to the same value within each condition, but could be set to be equal across the conditions. Thus, when a word was correctly recognized as “old,” but the source could not be remembered, participants had an \( a=0.788 \) probability of guessing that the source of the word was the detective. When a word was guessed to be “old,” there was a \( g=0.627 \) probability of guessing that the source of the word was the detective. These probabilities, unlike in the previous studies, were not influenced by visual salience. When the participants were forced to guess the source of a test word, they were more likely to guess that it was the detective.

Decisions about confession voluntariness failed to reach significance across the different camera formats. This is surmised to have occurred due to the delay between watching the confession video and completing confession judgments. Specifically, participants watched the movie, then completed demographic information, wrote short responses to unrelated questions about their experience at Ohio University, worked on solving anagrams for six minutes, completed the origin-of-item task and then answered
questions about the confession. Also, it is possible that responses to the origin-of-item task may have influenced responses on confession related judgments. To test for this possibility, it would be necessary to run an additional study where the order of confession judgments and origin-of-item tasks were counterbalanced.

However, further scrutiny of the relationship between the number of source monitoring attributions made and judgments about the confession revealed a number of important correlations. The more participants attributed the introduction of information to the detective, the less voluntary they perceived the suspect’s confession to be. These relationships were not found between the number of source attributions toward the suspect and confession judgments; failure to find a significant relationship was likely due to the very low number of source attributions toward the suspect.

The correlation between source monitoring attributions toward the detective and perceptions of likelihood of suspect guilt was positive. This seemingly contradicts the relationship between source attributions and perceptions of voluntariness. Whereas, the more information the detective is believed to have introduced reduces perceptions of voluntariness, it increases participants’ perceptions of guilt likelihood. This may demonstrate that, though observers realize the detective is actively constructing the crime scenario and introducing more information than the suspect, the introduction of information that casts the suspect in a dubious light still has an effect on guilt perceptions. This would be consistent with findings that demonstrate that people initially accept the truth of a statement (Gilbert, 1991). This would be bolstered by the stereotypes about criminal suspects, such as their likelihood of being untrustworthy individuals, that
they are likely to be guilty of the crime they are suspected of, and the schema that criminal suspects always deny their involvement in a crime.

General Discussion

The current research has revealed three cues that impact source monitoring decisions. By analyzing the data with multinomial modeling, we can see that visual salience, status, and influence primarily impact guessing biases (e.g., source guessing and recognition guessing). However, when these cues are combined in the right manner, memory processes can also be affected. Specifically, words presented by a visually salient, high status, individual with greater influence will be recognized more often. Also, depending on the context, words presented by an individual who is much more influential and has disproportionately higher status will be more likely to be recognized and together these factors overwhelm the effect of visual salience on source guessing – meaning that observers are likely to guess that this individual is the source of information.

Fitting the Three Models Together

Together, these three studies tell an interesting tale. The pilot study used a simplistic design where two actors alternated back and forth for a short amount of time saying single, related words. A video of the interaction was shown to participants in one of three camera formats, alternating which actor was visually salient or making both actors equally salient. After a relatively short delay, participants completed an origin-of-item test. This study showed that visual salience biases source guessing. Importantly, it also demonstrated that increased recognition of test words as “old” did not impact
participants’ ability to correctly assign source attributions. And visual salience had no impact on recognition bias, meaning that the probability of guessing that a word was “old” was not altered by changes in visual salience.

This finding suggests that visual salience, as predicted, acts as an additional heuristic cue when memory source is weak. So, only when participants could not explicitly recall the source of a word did visual salience affect source attributions. This explanation is compatible with previous research which has shown that other peripheral cues, such as gender or spatial location, can shift source judgments (Johnson et al., 1995).

Building off of these results, Study 1 not only manipulated visual salience, but also manipulated status by assigning one actor to the role of graduate student and the other to the role of undergraduate research assistant. Additionally, the impact of influence was investigated by using a stimulus video in which both actors talked approximately the same amount of time but one actor directed the course of the conversation more by asking 8 out of 10 questions. Importantly, the stimulus material was an actual conversation; therefore, much more complex than the video used in the pilot study. By building these factors into the study, the unique contribution of these variables could be used to interpret the findings in Study 2, which was conducted in the context of a police interrogation.

Study 1 continued to find that visual salience impacts source guessing, where higher visual salience was again associated with a greater likelihood of source guessing toward the most visually salient actor. Visual salience was found to overwhelm the effect of status on source guessing; when an actor was made visually salient, the likelihood of guessing that this actor was the source of a test word was the same, regardless of whether
he/she had been assigned high or low status. However, status was found to impact source guessing in the absence of visual salience, such that the actor assigned higher status in the equal focus condition was just as likely to be guessed the source as a visually salient actor. So status did not have an additive effect on source guessing but independently had the same degree of impact as visual salience.

However, high status and high visual salience together had a combined affect on recognition guessing. When participants could not recognize a word as having been spoken in the video, they were more likely to guess that the word was “old” when the video they saw was focused primarily on the high-status actor. This is likely due to an increased number of heuristic cues; during the decision making process, the increased number of cues is biasing participants’ likelihood of guessing that the word is “old.” The increase in cue volume associated with the word is likely leading to an increase in the probability that the word will exceed the decision making criteria imposed by the participant.

Finally, influence was seen to have an effect on the probability of correctly recognizing that a test word was presented in the video. Participants had a significantly higher probability of recognizing that a word was “old” if it had been introduced by the most influential actor. This was the only time that differences in memory processes, instead of biases, were found throughout this study. Also, there was a higher probability of guessing that the most influential actor was the source of a word. These findings were consistent across status and visual salience manipulations with one exception. When the most influential actor had high status and was made more visually salient, the probability of correctly detecting that a test word had been presented by this actor increased to more
than a 90% accuracy rate. So, when all the heuristic cues were pointing to one actor, memory was significantly better for words introduced by this actor. Interestingly, though participants were much more likely to recognize words presented in the video under these conditions, there was not a higher probability of then recalling the source of the test word. Again, this highlights the disconnect between recognition and source attributions in memory (Bornstein & LeCompte, 1995; Johnson et al., 1993; Lindsay & Johnson, 1991).

Study 2 findings must be interpreted within the context of a police interrogation. This means that relevant schemas and stereotypes are likely to influence participants judgments as well as their decision criteria (Marsh et al., 2003; Tucker & Brewer, 2003). It is suggested that these preexisting ideas about what occurs within a police interrogation are, in part, responsible for the some of the differences seen between Study 1 and Study 2.

Within a police interrogation, the police officer has higher status and higher influence. Certainly the difference in status between a detective and a suspect are considerably larger than the differences in undergraduate and graduate student status. This degree of difference explains why words spoken by the detective were so much more likely to be recognized as “old.” Visual salience was not found to increase this probability. Consistent with the previous studies, this increase in correct detection did not alter the probability of then correctly assigning source.

Visual salience, the only heuristic cue manipulated in this study, was seen to influence recognition guessing. Unlike Study 1, where high status and high visual salience had to be paired together to influence participants’ probability of guessing that a word was “old,” when either the suspect or the detective was made visually salient
participants were more likely to guess that a word was “old” than in the equal focus condition.

For the first time, we see that visual salience failed to influence source guessing and source guessing was significantly different depending on whether the test word was correctly detected as “old” or was guessed to be “old.” There was a higher probability of guessing that the detective was the source of a word when the word was correctly recognized as “old.” Across both types of source guessing, participants were always more likely to guess that the source was the detective. It is suggested that this deviation from the previous studies is due to existing schemas participants have about police interrogations. However, because participants were never asked about what they believe happens within an interrogation, this possibility cannot be confirmed.

Finally, though there was seen to be a relationship between the number of source attributions made toward the detective and confession judgments, the fact that voluntariness judgments were not significantly different across camera format limits the ability to investigate this relationship. The direction of the relationship between source attributions and individual questions assessing voluntariness were significant and in the predicted direction, where voluntariness judgments were lowest when more information was attributed to the detective. But the voluntariness index was not found to be related to suspect source attributions. Also, the relationship between source attributions and likelihood of guilt was in the opposite direction. Thus, the more evidence the detective introduces, even though the suspect denies its veracity, the more participants are coming to see the suspect as likely to be guilty. This finding can be explained by Gilbert’s research (1991) which proposes that people initially accept the truth of a statement.
Combined with preexisting stereotypes associated with criminal suspects (i.e., that they
will deny their involvement in a crime, that they are likely to be guilty of the crime, etc.),
though participants are aware that the confession may not be voluntary they still come to
the conclusion that the suspect is likely to be guilty. A similar finding was uncovered by
Kassin and Sukel (1997), where admissions of guilt made in a highly coercive scenario
where correctly identified as involuntary, yet the likelihood of conviction was still
elevated by self-incriminating statements.

Limitations

Issues Related to Participant Demographics

Depending on the number of cues available, the source monitoring biases found in
the current research are likely to be exacerbated in an older population, as older
individuals have been shown to make more source monitoring mistakes when a greater
number of perceptual cues are available (Ferguson et al., 1992). This is especially
relevant in the context of videotaped police interviews, where the victim, witness, or
suspect, may be shown to jurors. Jurors in real criminal trials will be older than the
majority of the participants in the current research and more cues – racial differences,
clothing, hair color, etc. – will be present.

External Validity

The current research, even as it progressed in complexity, used relatively simple
materials. Further, origin-or-item tests were conducted on single words selected from a
conversation and an interrogation. This was a necessary first step. However, the true
impact of source monitoring differences biased by status, influence, and visual salience may not have been captured. Or we may see these biases diminish if origin-of-item tests used entire sentences.

Also, a very short period of time separated presentation of the video from the origin-of-item task. Many times source attributions are made days, months, and even years after an incident occurred. This is especially true of criminal trials. In general, it has been shown that the longer the period of time is between encoding and making source attributions the lower the accuracy of the attributions (Tuckey & Brewer, 2003). Currently, it is unclear whether the impact of status, influence, and visual salience would increase or decrease with the length of the delay.

*Relevant Schemas*

Because questions related to participants’ schemas of police interrogations were not assessed, the impact of these preexisting schemas cannot be fully investigated. However, as this is the most relevant difference between Study 1 and Study 2, it is possible to draw tentative conclusions. It seems as though participants expect the detective to introduce more information. This is something future studies should access.

*Potential Order Effects*

Within Study 2, the origin-of-item test was always given before participants made judgments about the interrogation. It is possible that making source attributions before rating the confession for voluntariness and likelihood of guilt could have influenced participants’ responses on these items. However, this may actually capture what is likely
to occur within a criminal trial, as relevant evidence being introduced in a trial is also likely to influence jurors’ later source monitoring judgments.

*Future Directions*

*Source Monitoring*

Status, influence, and visual salience have now been added to the list of relevant factors that shift source monitoring decisions. Future studies should continue to investigate the extent and persistence of these factors. For instance, it is expected that as the amount of status difference between interactants increases the effect of this cue on source monitoring judgments should also increase. However, this possibility can only be speculated from the current research. It is possible that this is not the case, as the larger status difference between detective and suspect takes place in the context of a police interrogation, where preexisting schemas and stereotypes are likely to have a relevant influence on source attributions.

Further, the effect of these factors on other populations has yet to be investigated. Other cues have been found to have a minimal influence on younger adults in comparison to older populations (Ferguson et al., 1992). It is possible that status, influence, and visual salience will also have a more substantial impact on source attributions by other age groups.

*Police Interrogations*

Future research should continue to investigate the relationship between the camera perspective bias and source monitoring judgments. More studies should be
conducted to look at how source monitoring judgments shift as additional peripheral cues are added (i.e., gender differences, racial differences, etc.), as these differences are often seen in real police interrogation videos. Also, how source monitoring decisions are affected by other media formats used to present police interrogations should be investigated. Further, asking participants who introduced whole sentences or relevant pieces of evidence during the interrogation may reveal a more substantial relationship between assessments of voluntariness and guilt and source attributions. Certainly, the impact of source monitoring on juror decisions, which had not previously been investigated, should continue to be explored.

Concluding Remarks

The current research has woven together previously disparate areas of research, demonstrating three other factors that influence source monitoring decisions. Further, by using multinomial modeling, the incremental influence of status, influence, and visual salience was demonstrated. By investigating these factors within an applied realm, this research opens up a number of possibilities for future study as well as demonstrating that a relationship exists between all these areas of research and videotaped police interrogations. Thus, it is imperative that research investigating the impact of source monitoring and the camera perspective bias continue to move forward toward an objective presentation format to present police interrogations.
References


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Fig. 1
Source Monitoring Decision Making Trees and Parameters

Source A

Source B

New

Parameters

$D_1$: probability of detecting Source A items as old
$D_2$: probability of detecting Source B items as old
$d_1$: probability of discriminating the source of detected Source A items
$d_2$: probability of discriminating the source of detected Source B items
$b$: probability of responding “old” to nondetected items
$g$: probability of guessing that a nondetected item belongs to Source A
$a$: probability of guessing that a detected but nondiscriminated item belongs to Source A
### Table 1.1 Recognition by Camera Perspective

<table>
<thead>
<tr>
<th>Camera Perspective</th>
<th>Equal Focus</th>
<th>Actor A</th>
<th>Actor B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>20.33</td>
<td>20.37</td>
<td>19.5</td>
</tr>
<tr>
<td></td>
<td>(5.78)</td>
<td>(3.8)</td>
<td>(3.78)</td>
</tr>
<tr>
<td>False Positive</td>
<td>1.58</td>
<td>1.59</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>(3.32)</td>
<td>(1.91)</td>
<td>(2.19)</td>
</tr>
<tr>
<td>Corrected Recognition</td>
<td>18.75</td>
<td>18.78</td>
<td>18.1</td>
</tr>
<tr>
<td></td>
<td>(7.21)</td>
<td>(3.92)</td>
<td>(4.62)</td>
</tr>
</tbody>
</table>

Table represents means and (standard deviations).
Table 1.2  Total Source Attributions

<table>
<thead>
<tr>
<th>Camera Perspective</th>
<th>Actor A</th>
<th>Actor B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Focus</td>
<td>10.88 (3.63)</td>
<td>11.04 (3.09)</td>
</tr>
<tr>
<td>Actor A Focus</td>
<td>12.15 (3.55)</td>
<td>9.81 (3.36)</td>
</tr>
<tr>
<td>Actor B Focus</td>
<td>8.81 (3.27)</td>
<td>12.12 (4.54)</td>
</tr>
</tbody>
</table>

Table represents means and (standard deviations).
## Table 1.3 Source Monitoring Ratio

<table>
<thead>
<tr>
<th>Camera Perspective</th>
<th>Actor A</th>
<th>Actor B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Focus</td>
<td>0.397</td>
<td>0.407</td>
</tr>
<tr>
<td></td>
<td>(0.079)</td>
<td>(0.128)</td>
</tr>
<tr>
<td>Actor A Focus</td>
<td>0.421</td>
<td>0.314</td>
</tr>
<tr>
<td></td>
<td>(0.107)</td>
<td>(0.105)</td>
</tr>
<tr>
<td>Actor B Focus</td>
<td>0.338</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.129)</td>
</tr>
</tbody>
</table>

Table represents means and (standard deviations).
Table 1.4  
Correctly Detected “Old” Words Presented By Actor A

<table>
<thead>
<tr>
<th>Condition</th>
<th>Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Focus</td>
<td>10.29 (3.16)</td>
</tr>
<tr>
<td>Actor A Focus</td>
<td>10.89 (1.89)</td>
</tr>
<tr>
<td>Actor B Focus</td>
<td>9.54 (2.04)</td>
</tr>
</tbody>
</table>

Table represents Means and (Standard Deviations).
### Table 1.5

**Pilot Study Parameter Table**

<table>
<thead>
<tr>
<th>Condition</th>
<th>$D_1$</th>
<th>$D_2$</th>
<th>$d_1$</th>
<th>$d_2$</th>
<th>$b$</th>
<th>$a$</th>
<th>$g$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Focus</td>
<td>.710&lt;sub&gt;a&lt;/sub&gt;</td>
<td>.638&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.051&lt;sub&gt;d&lt;/sub&gt;</td>
<td>.556&lt;sub&gt;e&lt;/sub&gt;</td>
<td>.556&lt;sub&gt;e&lt;/sub&gt;</td>
</tr>
<tr>
<td>B Focus</td>
<td>.638&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.638&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.051&lt;sub&gt;d&lt;/sub&gt;</td>
<td>.378&lt;sub&gt;f&lt;/sub&gt;</td>
<td>.378&lt;sub&gt;f&lt;/sub&gt;</td>
</tr>
<tr>
<td>Equal Focus</td>
<td>.638&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.638&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.407&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.051&lt;sub&gt;d&lt;/sub&gt;</td>
<td>.488&lt;sub&gt;g&lt;/sub&gt;</td>
<td>.488&lt;sub&gt;g&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Differing subscripts denotes significant differences between parameter values; parameters assigned the same subscript do not differ significantly.

Model 5C: $G^2(3)=2.528, \ p=.470$.

$G^2_{a,b}(7)=5.986, \ p=.541$.

$G^2_{c}(9)=9.219, \ p=.417$.

$G^2_{d}(11)=9.658, \ p=.561$. 


Table 2.1

Study 1 Parameter Table

<table>
<thead>
<tr>
<th>Condition</th>
<th>Focus</th>
<th>Status*</th>
<th>Parameters</th>
<th>#</th>
<th>D1</th>
<th>D2</th>
<th>d1</th>
<th>d2</th>
<th>b</th>
<th>a</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>A</td>
<td>.753  a</td>
<td>.796 b</td>
<td>.432_d</td>
<td>.432_d</td>
<td>.169_e</td>
<td>.465_g</td>
<td>.465_g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>B</td>
<td>.753 a</td>
<td>.796 b</td>
<td>.432_d</td>
<td>.432_d</td>
<td>.128_f</td>
<td>.465_g</td>
<td>.465_g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>B</td>
<td>A</td>
<td>.753 a</td>
<td>.796 b</td>
<td>.432_d</td>
<td>.432_d</td>
<td>.128_f</td>
<td>.380_h</td>
<td>.380_h</td>
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<tr>
<td>4</td>
<td>B</td>
<td>B</td>
<td>.753 a</td>
<td>.911 c</td>
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<td>.432_d</td>
<td>.169_e</td>
<td>.380_h</td>
<td>.380_h</td>
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<td></td>
</tr>
<tr>
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<td>.796 b</td>
<td>.432_d</td>
<td>.432_d</td>
<td>.128_f</td>
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<td>.465_g</td>
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</tr>
<tr>
<td>6</td>
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<td>.796 b</td>
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<td>.432_d</td>
<td>.128_f</td>
<td>.380_h</td>
<td>.380_h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Status denotes which Actor was assigned higher status.
Differing subscripts denotes significant differences between parameter values; parameters assigned the same subscript do not differ significantly.

Model 5C: $G^2(6)=7.817, p = .251$.
$G^2_{b,c}(15)=21.736, p = .114$.
$G^2_{d}(20)=28.819, p = .091$.
$G^2_{e}(21)=28.861, p = .117$.
$G^2_{f}(24)=31.337, p = .144$.
$G^2_{g}(26)=32.357, p = .181$.
$G^2_{h}(28)=32.841, p = .241$. 
### Table 3.1

<table>
<thead>
<tr>
<th>Model 6B Parameters</th>
<th>Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>$D_D$</td>
<td>.7169 - .8410</td>
</tr>
<tr>
<td>$D_S$</td>
<td>.6353 - .7710</td>
</tr>
<tr>
<td>$D_E$</td>
<td>.6465 - .7820</td>
</tr>
<tr>
<td>$d_{1D=2D}$</td>
<td>.4375 - .6449</td>
</tr>
<tr>
<td>$d_{1S=2S}$</td>
<td>.4458 - .6771</td>
</tr>
<tr>
<td>$d_{1E=2E}$</td>
<td>.5008 - .7340</td>
</tr>
<tr>
<td>$a_D$</td>
<td>.7241 - .9018</td>
</tr>
<tr>
<td>$a_S$</td>
<td>.6971 - .9066</td>
</tr>
<tr>
<td>$a_E$</td>
<td>.6177 - .8691</td>
</tr>
<tr>
<td>$b_D$</td>
<td>.1506 - .2221</td>
</tr>
<tr>
<td>$b_S$</td>
<td>.1506 - .2201</td>
</tr>
<tr>
<td>$b_E$</td>
<td>.1083 - .1740</td>
</tr>
<tr>
<td>$g_D$</td>
<td>.6089 - .8027</td>
</tr>
<tr>
<td>$g_S$</td>
<td>.4935 - .6974</td>
</tr>
<tr>
<td>$g_E$</td>
<td>.4327 - .6820</td>
</tr>
</tbody>
</table>

Subscripts denote different camera formats. Parameters sharing a “D” subscript originate from the detective camera format. Parameters sharing an “S” subscript originate from the suspect camera format. Parameters sharing an “E” subscript originate from the equal focus camera format.
Table 3.2

Study 2 Parameter Table

<table>
<thead>
<tr>
<th>Condition</th>
<th>D_1</th>
<th>D_2</th>
<th>d_1</th>
<th>d_2</th>
<th>b</th>
<th>a</th>
<th>g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detective</td>
<td>.731_a</td>
<td>.488_b</td>
<td>.572_c</td>
<td>.572_c</td>
<td>.189_d</td>
<td>.788_f</td>
<td>.627_g</td>
</tr>
<tr>
<td>Suspect</td>
<td>.731_a</td>
<td>.488_b</td>
<td>.572_c</td>
<td>.572_c</td>
<td>.189_d</td>
<td>.788_f</td>
<td>.627_g</td>
</tr>
<tr>
<td>Equal</td>
<td>.731_a</td>
<td>.488_b</td>
<td>.572_c</td>
<td>.572_c</td>
<td>.135_e</td>
<td>.788_f</td>
<td>.627_g</td>
</tr>
</tbody>
</table>

Differing subscripts denotes significant differences between parameter values; parameters assigned the same subscript do not significantly differ.

Model 6B: $G^2(0)=0.00$.

$G^2_{a}(2)=2.978, p =.225$.

$G^2_{b}(4)=7.371, p =.117$.

$G^2_{c}(6)=9.089, p =.168$.

$G^2_{d,e}(7)=9.668, p =.208$.

$G^2_{f}(9)=10.916, p =.281$.

$G^2_{g}(11)=16.256, p =.131$. 
Table 3.3  
Voluntariness Index

<table>
<thead>
<tr>
<th>Camera Format</th>
<th>Voluntariness Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detective Focus</td>
<td>7.00 (2.58)</td>
</tr>
<tr>
<td>Suspect Focus</td>
<td>7.70 (3.05)</td>
</tr>
<tr>
<td>Equal Focus</td>
<td>7.28 (2.35)</td>
</tr>
</tbody>
</table>

Table represents means (and standard deviations) with larger numbers representing higher perceptions of confession voluntariness.
Table 3.4  
Total Number of Source Monitoring Attributions

<table>
<thead>
<tr>
<th>Camera Format</th>
<th>Detective Attributions</th>
<th>Suspect Attributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detective Format</td>
<td>15.21 (4.40)</td>
<td>1.32 (.95)</td>
</tr>
<tr>
<td>Suspect Format</td>
<td>13.40 (5.31)</td>
<td>1.75 (2.38)</td>
</tr>
<tr>
<td>Equal Format</td>
<td>11.94 (2.62)</td>
<td>1.56 (1.54)</td>
</tr>
</tbody>
</table>

Table represents means (and standard deviations).
Table 3.5
Correlations with Detective Source Monitoring Attributions

<table>
<thead>
<tr>
<th>Confession Judgments</th>
<th>Pearsons r</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detective determines information exchange</td>
<td>.340</td>
<td>.010</td>
</tr>
<tr>
<td>Detective causes suspect behavior</td>
<td>.331</td>
<td>.012</td>
</tr>
<tr>
<td>Likelihood of suspect guilt</td>
<td>.273</td>
<td>.040</td>
</tr>
<tr>
<td>Voluntariness index</td>
<td>-.221</td>
<td>.099</td>
</tr>
</tbody>
</table>
Appendix A: Confession Questionnaire

The following questions concern your impression of the videotaped confession.

1. The *suspect’s* confession was . . . .
   - 1 2 3 4 5 6 7 8 9
   - Given freely by the suspect
   - Forced out of the suspect by the detective

2. To what degree was the *suspect* coerced into confessing?
   - Not at all 1 2 3 4 5 6 7 8 9 To a large degree

3. How confident are you in your response to the above question?
   - Not at all 1 2 3 4 5 6 7 8 9 Completely

4. To what degree was the confession voluntary?
   - Not at all 1 2 3 4 5 6 7 8 9 To a large degree

5. How much would you say you liked the *suspect*?
   - Not at all 1 2 3 4 5 6 7 8 9 Very much

6. During the confession, how nervous did the *suspect* appear?
   - Not at all 1 2 3 4 5 6 7 8 9 Extremely nervous

7. To what extent was the *suspect’s* degree of nervousness caused by the kind of person he is?
   - Not at all 1 2 3 4 5 6 7 8 9 To a large extent

8. To what extent was the *suspect’s* degree of nervousness caused by the kind of person he is?
   - Not at all 1 2 3 4 5 6 7 8 9 To a large extent

9. To what extent do you think the *suspect* was lying?
   - Not at all 1 2 3 4 5 6 7 8 9 To a large extent
10. During the confession, how dominant did the **suspect** appear?

Not at all 1 2 3 4 5 6 7 8 9  
Extremely dominant

11. To what extent was the **suspect**’s degree of dominance caused by the kind of person he is?

Not at all 1 2 3 4 5 6 7 8 9  
To a large extent

12. To what extent was the **suspect**’s degree of dominance caused by the situation he was in?

Not at all 1 2 3 4 5 6 7 8 9  
To a large extent

13. How talkative was the **suspect**?

Not at all 1 2 3 4 5 6 7 8 9  
Extremely talkative

14. To what extent was the **suspect**’s degree of talkativeness caused by the kind of person he is?

Not at all 1 2 3 4 5 6 7 8 9  
To a large extent

15. To what extent was the **suspect**’s degree of talkativeness caused by the situation he was in?

Not at all 1 2 3 4 5 6 7 8 9  
To a large extent

16. Did you find the **suspect**’s statements to be credible?

Not at all 1 2 3 4 5 6 7 8 9  
Very credible

17. To what degree did the **suspect** set the tone of the interrogation?

Not at all 1 2 3 4 5 6 7 8 9  
To a large degree

18. To what degree did the **suspect** determine the kind of information exchanged?

Not at all 1 2 3 4 5 6 7 8 9  
To a large degree

19. To what degree did the **suspect** cause the **detective** to behave as he did?

Not at all 1 2 3 4 5 6 7 8 9  
To a large degree
20. To what degree would you say the **suspect** liked the **detective**?

Not at all  1  2  3  4  5  6  7  8  9  To a large degree

21. Did you find the **suspect’s** statements to be believable?

Not at all  1  2  3  4  5  6  7  8  9  Very believable

22. To what degree did the **suspect** resist giving a confession?

Not at all  1  2  3  4  5  6  7  8  9  To a large degree

23. How would you rate the **suspect’s** behavior on the following scale?

Passive  1  2  3  4  5  6  7  8  9  Aggressive

24. To what degree was the **suspect** intimidated by the **detective**?

Not at all  1  2  3  4  5  6  7  8  9  To a large degree

25. How was the **suspect’s** confession obtained?

1  2  3  4  5  6  7  8  9  The confession was coerced

26. How much would you say you liked the **detective**?

Not at all  1  2  3  4  5  6  7  8  9  Very much

27. Do you think the **detective** was sensitive to the **suspect’s** feelings (that is, did he seem concerned about how the suspect felt?)

Not at all sensitive  1  2  3  4  5  6  7  8  9  Extremely sensitive

28. Do you think the **detective** was empathetic (that is, did he seem to understand how the suspect felt?)

Not at all empathic  1  2  3  4  5  6  7  8  9  Extremely empathic
29. How nervous did the **detective** appear?

| Not at all nervous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely nervous |

30. To what extent was the **detective’s** degree of nervousness caused by the kind of person he is?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |

31. To what extent was the **detective’s** degree of nervousness caused by the situation he was in?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |

32. How dominant did the **detective** appear?

| Not at all dominant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely dominant |

33. To what extent was the **detective’s** degree of dominance caused by the kind of person he is?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |

34. To what extent was the **detective’s** degree of dominance caused by the situation he was in?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |

35. How talkative was the **detective**?

| Not at all talkative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely talkative |

36. To what extent was the **detective’s** degree of talkativeness caused by the kind of person he is?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |

37. To what extent was the **detective’s** degree of talkativeness caused by the situation he was in?

| Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | To a large extent |
38. To what degree would you say the **detective** liked the **suspect**?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

39. To what degree was the **detective** intimidated by the **suspect**?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

40. To what degree did the **detective** set the tone of the interrogation?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

41. To what degree did the **detective** determine the kind of information exchanged?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

42. To what degree did the **detective** cause the **suspect** to behave as he did?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

43. How would you rate the **detective’s** behavior on the following scale?

Passive 1 2 3 4 5 6 7 8 9 Aggressive

44. To what degree do you believe the **detective** tricked the **suspect** into confessing?

Not at all 1 2 3 4 5 6 7 8 9 To a large degree

45. Do you think the **suspect** was being completely truthful?

Not at all truthful 1 2 3 4 5 6 7 8 9 Very truthful

46. Who would you say was most in control of the situation?

**Detective** 1 2 3 4 5 6 7 8 9 **Suspect**

47. How likely is it that the **suspect** is guilty?

Not at all likely 1 2 3 4 5 6 7 8 9 Extremely likely
48. How much stress did the suspect seem to be experiencing?

No stress  1  2  3  4  5  6  7  8  9  A great deal of stress

Please respond to the following questions by circling the appropriate answer.

49. Do you believe the defendant's confession presented in this case was given freely and intentionally? (circle one)

Yes  No

50. How confident are you in your judgment above?

Not confident  1  2  3  4  5  6  7  8  9  Extremely confident

51. As a juror watching this confession, do you believe the suspect is guilty or not guilty? (circle one)

Not Guilty  Guilty

52. How confident are you in your judgment above?

Not confident  1  2  3  4  5  6  7  8  9  Extremely confident

53. Do you think the suspect is basically a good or a bad person?

Bad person  1  2  3  4  5  6  7  8  9  Good person

54. If the suspect were convicted, how severe should his sentence be?

Minimum sentence  1  2  3  4  5  6  7  8  9  Maximum sentence

Do you believe you behaved as an impartial (unbiased) juror in arriving at your judgments concerning this confession (circle one)

Yes  No

Please explain your response to the above question in a few sentences.