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Understanding how shared expectations can shape reality: an examination of the underlying mechanisms in the accumulation of perceptual bias effects

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Understanding how shared expectations can shape reality:

An examination of the underlying mechanisms in the
accumulation of perceptual bias effects

by

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

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2008

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Abstract

This research examined the underlying mechanisms in the accumulation of perceptual bias effects within the context of a criminal investigation. Biased assimilation processes, including the tendency to seek, interpret, and remember information in a manner consistent with one's expectation, and perceived consensus were proposed as potential mediators of accumulation. Two experiments tested this proposition by manipulating perceivers' expectations about a fabricated target's guilt and their interaction with another person. Results from Experiment 1 indicated that perceptual bias effects accumulated across those perceivers who reported having similar beliefs with another person's written statement. These perceivers reported more extreme beliefs about the suspect's guilt in a direction consistent with their initial expectation than those who either did not perceive consensus with another person's written statement or who were not exposed to information from another person. There was no evidence to indicate biased seeking tendencies mediated this effect; however, there was support for biased interpretation and some support for biased recall tendencies as mediators of accumulation. In contrast to Experiment 1, the results from Experiment 2 indicated that perceptual bias effects were not accumulating across perceivers. Perceivers who worked in pairs did not report more extreme beliefs about the suspect's guilt than those who worked alone. Although perceivers' sought, interpreted, and remembered information in a manner consistent with their expectations, they did not do so to a greater extent when working with someone who shared their beliefs about the suspect's guilt than when working alone. In addition, the majority of perceivers perceived consensus even in situations in which they worked with someone who was given a dissimilar expectation about the suspect's guilt. The inconsistent findings across the two experiments are discussed in

regards to differences in methodology. The findings are also discussed in regards to their implications for understanding how and when expectations can shape social reality and for understanding factors that may contribute to errors within the criminal justice system.

Introduction

People are immersed in a complex social world that requires them to develop strategies for understanding and anticipating how people behave. Individuals gather information from a variety of sources and use this information to generate expectations about how others will think, act, and feel. Generally speaking, these expectations are beneficial because they allow people to formulate appropriate courses of action for interacting with others. However, people's expectations are sometimes inaccurate. Inaccurate expectations have the potential to bias people's subsequent impressions by virtue of their tendency to be confirmed through perceptual processes such as a perceptual bias. A perceptual bias occurs when an individual's inaccurate expectation about another person biases his or her subsequent impressions of that person in a manner consistent with the inaccurate expectation. That is, a perceptual bias occurs when an individual believes that his or her expectation has been confirmed to a greater extent than it has in reality (Darley & Fazio, 1980; Jussim, 1991; Neuberg, 1989; Snyder & Haugen, 1995).

Research has provided support for the existence of perceptual bias effects (see Jussim, Eccles, & Madon, 1996; Rosenthal & Rubin, 1978; Snyder & Stukas, 1999, for reviews). However, the magnitude of these effects tends to be modest (see Jussim, 1991; Jussim et al., 1996; Rosenthal & Rubin, 1978, for reviews). Nevertheless, this does not mean that the effects of perceptual biases are always modest. There are conditions under which these effects have the potential to be powerful (Jussim, 1986). For example, even small perceptual bias effects can become powerful if they accumulate across people. That is, two people holding similar and inaccurate expectations for another person may come to believe

that their expectations have been confirmed to a greater extent than they would have otherwise believed had they been alone or with someone holding a dissimilar expectation.

There is some preliminary support for the accumulation of perceptual bias effects (Willard, Madon, Gyll, Buller, & Scherr, 2008). In one experiment, researchers manipulated participants' expectations of other participants. Some participants were led to believe they would be interacting with a hostile individual, whereas other participants were not given any specific expectation about the individual. The similarity of participants' expectations was also manipulated so that either both participants had no expectation about their interaction partner (i.e., non-hostile expectation), one participant had a hostile expectation whereas the other had no expectation (i.e., single-hostile expectation), or both participants had a hostile expectation (i.e., double-hostile expectation). Consistent with an accumulation process, participants in the double-hostile expectation condition rated the target individual as more hostile than participants in the single-hostile and non-hostile expectation conditions. Although this study provided support for the accumulation of perceptual bias effects, it was not intended to identify the underlying mechanisms responsible for those effects. Thus, conducting further research is necessary to elucidate the mechanisms that lead to the accumulation of perceptual bias effects.

The primary scientific objective of this dissertation was to advance current knowledge regarding how perceptual bias effects accumulate across people. With this objective in mind, this dissertation sought to make following contributions to the literature. First, it attempted to replicate previous experimental work on the accumulation of perceptual bias effects. Second, it examined the possibility that biased assimilation and consensus processes served as underlying mechanisms leading to cumulative perceptual bias effects.

Third, it examined these issues within the context of the legal system in order to apply the accumulation process to a socially meaningful area.

This proposal is organized into nine chapters. The first chapter reviews relevant literature on perceptual biases. The second chapter discusses the overall power of perceptual bias effects and describes how these effects might become larger through the process of accumulation. The third chapter outlines potential underlying mechanisms that may contribute to the accumulation process. The fourth chapter presents a theoretical model showing the proposed relations between perceivers' expectations and their impressions of targets. The fifth chapter provides an overview of the methods and hypotheses for two experimental investigations of the accumulation process. The sixth and seventh chapters provide a description of the proposed methods and analyses for two preliminary studies. The eighth and ninth chapters include the methods, results, and discussion of two experiments designed to examine accumulation and the processes that may contribute to this effect. The final chapter discusses the results, implications, and limitations of this work and avenues for future research.

Chapter 1: The Perceptual Bias

The social psychological literature has long emphasized the power of individuals to construct social reality (Klein & Snyder, 2003; Miller & Turnbull, 1986; Snyder & Stukas, 1999). This emphasis dates back to New Look in Perception research (e.g., Bruner, 1957; Merton, 1948) which proposed that people interpret reality through perceptual lenses that are biased by people's expectations. These expectations can be beneficial because they help people prepare for new situations and provide a framework through which to make sense of incoming information. People will use their expectations in this manner even though their expectations may not be completely accurate. Sometimes people's expectations about others are inaccurate because they fail to take into consideration situational factors, because they are based on irrelevant personal experiences, or because they are derived from invalid information such as rumor, hearsay, or social stereotypes (Olson, Roese, & Zanna, 1996; Snyder & Stukas, 1999). Regardless of the source, inaccurate expectations have the potential to channel social interactions in such a way as to lead people to believe that their expectations have been confirmed.

A perceptual bias occurs when people believe that their expectations about others have been confirmed to a greater extent than they have in reality (Darley & Fazio, 1980; Jussim, 1991; Neberg, 1989; Snyder & Haugen, 1995). Unlike a self-fulfilling prophecy in which confirmation exists because people change their behavior in a manner consistent with another's expectation (Merton, 1948), in a perceptual bias the confirmation simply exists in the mind of the individual holding the expectation. However, these processes are not mutually exclusive. They may occur simultaneously if the target of an expectation has changed his or her behavior to be consistent with another's expectation and yet, that person

still overestimates the degree of confirmation that occurred. Additionally, a perceptual bias is distinct from belief perseverance. Belief perseverance occurs when people continue to hold their beliefs in the face of contradicting information (Anderson, in press; Ross, Lepper, & Hubbard, 1975). Although belief perseverance may be one outcome of a perceptual bias, a perceptual bias reflects a process involving interrelations between people.

The perceptual bias process includes three steps. First, an individual (the perceiver) develops an inaccurate expectation about another individual (the target). For example, a teacher (the perceiver) may develop the expectation that a particular student (the target) is exceptionally bright when the student may in fact be performing only at an average level. Second, the perceiver treats the target as if the inaccurate expectation is true. The teacher may do this by smiling more at the student relative to other students in the class, spending more time with the student than he or she spends with other students, asking the student more challenging questions than he or she asks other students, or teaching the student more difficult material than he or she teaches other students in the class (Rosenthal, 1973). Third, the perceiver believes that target has confirmed the expectation to a greater extent than the target has in reality. For example, a teacher's inaccurate expectation about a student's intelligence may bias the teacher's evaluation of the student's classroom performance but not influence the student's actual level of achievement as measured by a standardized test. In this case, there is not sufficient evidence proving that the student has improved his or her performance, but the teacher believes the student has confirmed the earlier expectation.

Literature Relevant to Perceptual Biases

A perceptual bias has the potential to exist in any situation where a perceiver holds an inaccurate expectation about a target. If perceivers believe that a target has confirmed their

expectations to a greater extent than is warranted, then a perceptual bias has occurred. Research related to this phenomenon can be found in several different literatures including, but not limited to, general research on person perception, research on self-fulfilling prophecies, attribution research, and research involving stigmas and stereotyping. This research has provided ample support for the existence of perceptual bias effects (see Greenwald & Banaji, 1995; Hamilton, Sherman, & Ruvolo, 1990; Jussim et al., 1996; Miller & Turnbull, 1986; Rosenthal & Rubin, 1978; Snyder & Stukas, 1999, for reviews). For example, teachers' inaccurate expectations about students' performance bias their subsequent evaluations of students' classroom achievement (Jussim, et al., 1996; Rosenthal & Jacobsen, 1968), mothers' gender-stereotypic beliefs predict their evaluations of their children's abilities (Jacobs & Eccles, 1992), and participants given false information about a child's socioeconomic status differentially rate the academic ability of that child based on the same observations (Darley & Gross, 1983). Perceptual bias effects have even been found in situations in which targets have displayed disconfirming behavior. For example, Ickes, Patterson, Rajecki, and Tanford (1982) observed that perceivers who expected targets to be unfriendly rated them consistent with their expectations despite the fact that these targets actually behaved in a friendly manner.

Importance of Perceptual Biases

The idea that people can leave an interaction believing that their expectations have been confirmed, despite a lack of confirming evidence, is fascinating in its own right. However, the consequences of a perceptual bias are particularly meaningful to those who are the target of negative expectations. Researchers have long speculated that expectancy effects contribute to social problems. For example, Merton (1948) proposed that people believe that

their expectations about members of racial and ethnic out-groups have been confirmed regardless of the behavior displayed by group members. Because these expectations are typically based on negative stereotypes, they have the potential to perpetuate prejudicial attitudes and discriminatory practices.

Of course, one need not be a member of a stereotyped group to experience the unpleasant effects of a perceptual bias. People's inaccurate and negative expectations may start a chain of events that have the potential to undermine the opportunities and competencies of individuals who are the targets of such expectancies. These expectations may color people's later impressions which have the potential to negatively impact targets in a variety of settings. For example, teachers' negative evaluations may contribute to the tracking of students into low-ability programs, interviewers' negative impressions may result in a decision not to hire an applicant, or people's mislabeling of individuals may influence other's opinions. Within the legal system, researchers have noted the ripple effect that "tunnel vision" can have on the impressions of detectives, attorneys, judges, and juries (Findley & Scott, 2006). Inaccurate expectations developed early in an investigation have the potential to bias evaluations of a suspect's guilt at later points, which can lead to an erroneous arrest and the prosecution of innocent persons (Kassin, 2006). Thus, the belief that one's inaccurate expectation has been confirmed can have serious negative consequences in a number of real-world settings.

Chapter 2: The Accumulation of Perceptual Bias Effects

Even though research supports the existence of perceptual bias effects, the magnitude of these effects is generally modest. For example, the degree to which teachers' inaccurate expectations bias their subsequent judgments of students' academic ability is usually in the neighborhood of .2 in terms of standardized regression coefficients (see Jussim et al., 1996 for review). Likewise, the average effect size of stereotyped-based expectations on impressions of targets with identical personality characteristics equals .25 in terms of a correlation coefficient (see Kunda & Thagard, 1996 for a meta-analysis).

However, these small effects represent averages that do not take into consideration the possibility that certain psychological processes could render perceptual bias effects relatively powerful. For example, even small perceptual bias effects could become powerful if they accumulate across perceivers. That is, perceivers may come to believe that their expectations about a target have been confirmed to a greater extent than they actually have when other perceivers appear to hold similar expectations about the same target. If perceptual bias effects are bolstered by simply engaging with other individuals who hold similar expectations, then this process could be particularly meaningful for targets in any setting where there are multiple inaccurate expectations held about them. Such targets may be judged inappropriately and given fewer opportunities precisely because perceivers believe that their expectations have been fulfilled to a greater extent than they have in reality.

There exists only one study examining the accumulation of perceptual bias effects (Willard et al., 2008). In this study, trios of same-sex participants, each consisting of two perceivers and one target, were randomly assigned to one of three conditions: non-hostile expectation, single-hostile expectation, or double-hostile expectation condition. In the non-

hostile expectation condition, neither perceiver received information about the target's hostility. In the single-hostile expectation condition, one perceiver received bogus information that the target was hostile, whereas the other perceiver did not. In the double-hostile expectation condition, both perceivers received bogus information that the target was hostile. Thus, this design manipulated both perceivers' expectations about the target's hostility (i.e., non-hostile expectation versus hostile expectation) and the similarity of their expectations (i.e., similar versus dissimilar). Participants took part in an interaction in which the two perceivers alternated asking the target questions. Perceivers independently selected their questions from a pool of questions that were designed to elicit either a non-hostile or a hostile response. After the interaction, perceivers' impressions of the target's hostility were assessed and later experimenters blind to condition independently coded targets' behaviors. Results indicated that targets' hostility did not differ across conditions. However, consistent with the process of accumulation, results showed perceivers' impressions of the target's hostility became greater as the number of perceivers induced with a hostile expectation increased from zero to one to two. Accordingly, perceivers believed that their expectations had been fulfilled to a greater extent when interacting with someone who shared their expectations rather than with one who did not.

Implications of Cumulative Perceptual Bias Effects

The idea that perceptual bias effects accumulate when people share similar expectations about the same individual is important for several reasons. First, it suggests that the literature may be underestimating the magnitude of perceptual bias effects because researchers have tended to focus on situations involving only one perceiver. Although there are many instances in which such a focus is clearly warranted, there also exist a myriad of

situations involving multiple perceivers each of whom could potentially hold similar expectations about the same target. For example, different teachers in an elementary school may hold similar expectations about the same student, multiple supervisors in an office may hold similar expectations about a particular job applicant, and many perceivers may hold similar stereotypic beliefs about members of stereotyped and stigmatized groups. These situations are fundamentally different from situations involving only one perceiver, and raise the possibility that the magnitude of perceptual bias effects observed in the literature may underestimate the true extent to which perceivers believe their expectations have been confirmed in a variety of real world situations in which perceivers interact with other perceivers who share their beliefs. Accordingly, perceivers' inaccurate expectations have the potential to strongly bias their subsequent impressions of targets through a process of accumulation and, by so doing, produce the kinds of social problems that Merton (1948) discussed.

Second, the accumulation of perceptual bias effects may increase the chances that targets of negative expectations will be placed on a harmful course. For example, if several teachers believe that their negative expectations about a student have been confirmed, then that student's chances of being tracked into a low ability group may be much higher than if only one teacher had originally held that expectation. Similarly, if multiple interviewers leave an interview with the impression that a job applicant has fulfilled their negative expectations, then they may be less likely to hire that applicant than if only one interviewer had held that negative expectation. Because targets need not display expectancy consistent behavior for perceivers to believe their expectations have been confirmed, it is possible that targets may be completely unaware that perceivers see them differently than they see themselves.

Without this awareness, they may not work to change perceivers' inaccurate impressions (Hilton & Darley, 1985; Stukas & Snyder, 2001) – a situation that may ultimately lead perceivers to assume that their expectations were accurate all along.

The outcome of such a process is that perceivers may feel justified holding onto their inaccurate expectations and continue to behave consistently with them. For example, perceivers who believe that their negative expectations have been confirmed in one social interaction may avoid future interactions with that target (Harris, 1993). They may even generalize that avoidant behavior to other targets who belong to the same social group as the first target. Indeed, people often avoid interactions with stigmatized group members (Snyder, Kleck, Strenta, & Mentzer, 1979). Thus, the accumulation of perceptual bias effects may put targets on negative trajectories that restrict their opportunities for skill development and advancement.

Although there is preliminary empirical support for the accumulation of perceptual bias effects across people (Willard et al., 2008), it is necessary to replicate this finding. Further research is needed to determine whether a similar pattern of results appears in other contexts using different expectations and to identify the underlying psychological processes that contribute to the accumulation of perceptual bias effects.

Chapter 3: Underlying Mechanisms

One of the objectives of the proposed research was to identify processes that may contribute to the accumulation of perceptual bias effects. This chapter first reviews the literature on known causes of perceptual biases and then discusses underlying processes that may be capable of producing cumulative perceptual bias effects.

Processes Contributing to Perceptual Bias Effects

Researchers and theorists have long observed the propensity for people to engage in biased assimilation processes in order to maintain their initial beliefs (e.g., Lord, Ross, & Lepper, 1979; Olson et al., 1996; Nickerson, 1998; Trope & Liberman, 1996). That is, information about a target is preferentially sought, interpreted, and recalled in ways that favor people's expectations, ultimately leading them to believe that their expectations have been confirmed. Perceptual biases are the result of perceivers seeking, interpreting, and/or remembering a target's behavior in ways that are consistent with their initially inaccurate expectations (Jussim et al., 1996). The following section presents an overview of the research pertaining to each of the biased assimilation processes (i.e., seeking, interpreting, and recalling).

Seeking information. A perceptual bias may result because of the strategies that people use to determine whether or not their expectations are correct. That is, people may seek out information in specific ways that may unintentionally lead to a greater likelihood that they will leave an interaction believing that their expectations have been confirmed. One way that people may do this is by testing their hypotheses in a biased manner – that is, by looking for evidence that confirms rather than disconfirms the beliefs that they already hold to be true – a process sometimes referred to as a hypothesis confirmation bias or a positive

test strategy. For example, Snyder and Swann (1978) labeled some targets as extroverts and others as introverts. Perceivers were instructed to determine if these labels were correct by asking targets several questions from a larger pool of questions. Consistent with a hypothesis confirmation bias, perceivers who expected to interact with an extroverted target tended to ask the target questions that elicited an extroverted response. Likewise, perceivers who expected to interact with an introverted target tended to ask the target questions that elicited an introverted response. The tendency for people to use biased hypothesis testing strategies during social interactions has been replicated in studies using different expectations (Snyder, Campbell, & Preston, 1982; Snyder & White, 1981; Zuckerman, Knee, Hodgins, & Miyake, 1995). Therefore, the type of evidence that perceivers seek can serve as one mechanism through which their expectations are believed to be confirmed.

In addition, perceivers that start with an inaccurate expectation may test their expectations by using techniques that encourage people to provide hypothesis consistent information. Researchers have argued that using a hypothesis confirmation strategy can be a valid way of gathering information because targets still have the option of answering with a negative response and thus, provide evidence of disconfirmation (Trope & Mackie, 1987). However, research suggests that people have a tendency to provide more 'yes' than 'no' answers when being questioned and that this tendency, in conjunction with perceivers' tendency to use hypothesis confirmation strategies, results in higher likelihood of confirmation (Zuckerman et al., 1995).

People's expectations and their tendency to look for confirmation may also influence the threshold for conducting a thorough search. People may stop searching for additional information at different points depending on whether the information is consistent versus

inconsistent with their expectations (Ditto & Lopez, 1992; Pyszczynski & Greenberg 1987). Less information is needed when it tends to confirm people's expectations. In contrast, people may continue to search longer and exert more pressure on others when the information tends to disconfirm their expectations. For example, in one study participants were randomly assigned to play the role of a suspect or a detective (Kassin, Goldstein, & Savitsky, 2003). This study manipulated both the suspects' guilt (i.e., innocent versus guilty) and the detectives' expectations about the suspect's guilt (i.e., innocent versus guilty). Results indicated that detectives who expected the suspect to be guilty tended to select more guilt-presumptive questions, use more interrogation techniques, and to use more aggressive interrogation techniques when they were questioning an innocent versus a guilty suspect. Naïve participants later judged detectives in that condition as exerting more effort and more pressure in their attempts to get the suspect to confess.

Interpreting information. Once information has been gathered, people then have to interpret and evaluate that information. People's expectations can bias their judgments of this information in ways that support their pre-existing expectations. The following section provides a brief overview of research examining the relationship between people's expectations and the interpretation of information.

First, people tend to interpret information as confirming their beliefs or expectations, especially when that information is ambiguous (see Olson et al., 1996; Nickerson, 1998 for reviews). For example, in one study sixth grade students were presented with drawings of two children engaging in an ambiguous behavior (Sagar & Schofield, 1980). The behavior was considered ambiguous because it could have been interpreted as a friendly behavior or as a mean and aggressive behavior. Researchers manipulated the race (i.e., African American

versus White) of the child engaged in the ambiguous behavior. Researchers found that participants judged the behavior as more mean and threatening when it was performed by an African American child versus a White child. This finding suggests stereotypes influenced participants' interpretation of the same behavior of targets of different races. Although this finding is based on participants' stereotype-based expectations, a similar pattern of results emerges based on participants' target-based expectations (e.g., Bond, 1972; Ickes, et al., 1982; Rosenthal & Jacobsen, 1968).

Second, the way in which information is interpreted may be different depending on whether or not the information is consistent versus inconsistent with people's expectations. People tend to judge disconfirming evidence as unreliable and irrelevant but confirming evidence as reliable and relevant (Lord, Ross, & Lepper, 1979). Disconfirming information is sometimes simply discounted or dismissed. For example, within the schema literature, researchers have noted that when people encounter discrepant information they may create subcategories as a way to preserve their existing belief structures (Weber & Crocker, 1983). At other times, disconfirming evidence is subject to more extensive processing in an effort to discredit it (Gilovich, 1991).

In addition, people sometimes label disconfirming evidence as less diagnostic in explaining another's behavior. Because perceivers are generally anticipating confirming evidence to surface, they may be surprised when the target behaves counter to their expectation. The target's unexpected behavior may then be attributed to chance, as a response to the perceiver's behavior, or as a self-presentational strategy (Hilton & Darley, 1985; Miller & Ross, 1975; Nadler, Fisher, & Streufert, 1974; Weiner, 1986). By attributing

the target's unexpected behavior to something other than an internal and stable characteristic, perceivers are more likely to believe their initial expectations have been confirmed.

Recalling information. The research regarding how expectancies influence the recall of information is somewhat mixed and appears to be influenced by a variety of factors, such as perceivers' motivation or the complexity of the information. In general, people tend to be better able to recall information that is both consistent and inconsistent with their expectations as long as it is deemed relevant rather than irrelevant (Fiske & Taylor, 1991). However, there is also research to suggest that people have better recall of information that is consistent rather than inconsistent with their expectations. For example, Rothbart, Evans, and Fulero (1979) presented participants with descriptions of behaviors associated with members of a group. Researchers led some participants to believe that descriptions were of members of a group that were either intellectual or friendly. Half of the participants were given this information before viewing the descriptions, whereas the other half was given this information after viewing the descriptions. The results indicated that participants who were induced with an expectation prior to viewing the descriptions showed better recall for behaviors that were consistent with their expectations than behaviors that were inconsistent with their expectations. Additionally, researchers have suggested that people tend to be motivated to recall more evidence that supports their pre-existing views rather than evidence that opposes their views (Lord, Ross, & Lepper, 1979).

Conversely, there is also research suggesting that people are better able to recall information that is inconsistent with their expectations than information that is consistent (see Stangor & McMillan, 1992, for a meta-analysis). As mentioned previously, people may spend more time seeking information when that information appears to disconfirm their

expectations. Also, inconsistent information sometimes receives extended processing due to people's attempts to discredit that information. Thus, it also makes sense that people would have better recall for inconsistent information. However, there appears to be limits to this effect. It may apply more to group-expectancies rather than to an individual (Stangor & Ruble, 1989) and over time the effect may even become reversed (Wyer & Martin, 1986). That is, people may be better able to recall inconsistent information at first, but over time become less able to do so. Thus, the effect of people's expectations on their ability to recall information is multifaceted. However, as Hamilton et al (1990) note, even if people do have a better memory for inconsistent information, consistent information may still be having a greater impact on their evaluations.

Processes Contributing to the Accumulation of Perceptual Bias Effects

There are several processes that may be responsible for the relation between perceivers' inaccurate expectations and the accumulation of perceptual bias effects. The following section provides a discussion of each of the proposed contributing processes and how they are related to the accumulation of perceptual bias effects.

Strengthening of biased assimilation processes. The accumulation of perceptual bias effects may occur because of a strengthening of biased assimilation processes. Each person's efforts to examine the validity of his or her expectations may result in the greater likelihood of seeking, interpreting, and recalling information in a biased manner. Perceivers' assessments of a target may be skewed because they are inadvertently employing methods that are biased by their expectations, which may result in the greater appearance of expectancy consistent information. If perceivers with similar expectations are both engaging in biased assimilation processes, then it becomes even more likely that seemingly

expectancy-consistent information will surface. For example, two perceivers both using a similar hypothesis confirmation strategy may uncover more information consistent with their expectations than either perceiver alone.

Consensus. Consensus across perceivers may also contribute to the accumulation of perceptual bias effects. Research on attribution theories have suggested that consensus is a factor that influences whether or not people's behaviors are interpreted as being indicative of dispositional qualities (Kelley, 1973). People may consider the opinions of others in determining whether their own opinions are correct. If they perceive consensus, then they may be more likely to engage in various biased assimilation processes. People may also have greater confidence in their judgments when others appear to be in agreement with them.

Consensus can be conveyed through explicit verbalization of perceivers' expectations for a target. However, there is also a wealth of research demonstrating the importance of covert communication in mediating the potential for a perceiver's expectation to influence a target's behavior (see Rosenthal, 2002 for a review). People's expectations about a target can be expressed through their nonverbal behaviors, such as their tone of voice, amount of eye-contact, posture, etc., without them ever explicitly mentioning their expectations. For example, Harris et al. (1994) had participants teach a task via videotape. Participants were led to believe that they were either teaching another college student or an elderly woman. Participants who believed they were teaching an elderly woman taught less material, were more nervous, and were less friendly than participants who believe they were teaching another college student. In turn, participants who watched tapes that were made for an elderly woman learned less than participants who watched tapes that were made for a college student. This suggests that the influence of perceivers' expectations on targets' behaviors

were mediated through the perceivers' behavior. Similarly, it is possible that perceivers' expectations may be conveyed to another perceiver to ultimately influence both perceivers' impressions of the same target.

Chapter 4: Conceptual Model of the Accumulation of Perceptual Bias Effects

Figure 1 presents a conceptual model describing the relations that may be involved in the accumulation of perceptual bias effects across perceivers. For simplicity, I present these relations for two perceivers and one target. However, the relations depicted could be extended to include any number of perceivers each of whom holds an inaccurate expectation about the same target.

Inaccurate Expectations

The model proposes that perceivers' expectations influence both their expected behavior toward the target and also their impressions of the target. First, each perceiver's expectation may influence decisions about how to behave towards a target (Paths *a* and *b*). For example, if perceivers falsely expect a target to be hostile, then they would, according to the model, be more likely to look for evidence of the target's hostility. For example, perceivers' anticipating how they will behave toward the target may decide to ask questions that would confirm their expectations, develop nonverbal strategies to elicit confirmation, and decide which behaviors would be used to infer confirmation (Snyder & Swann, 1978; see Trope & Liberman, 1996 for review).

Second, each perceiver's expectation about a target may influence on his or her subsequent impression of the target (Paths *c* and *d*). This influence reflects the stability of each perceiver's expectation over time. That is, according to the model, perceivers' expectations influence their impressions of the target even when they are given no opportunity to interact with the target.

Anticipating Interaction

The model proposes the perceivers' anticipated ways of behaving toward the target has the potential to influence their impressions in three different ways. First, perceivers' expectations for their own behavior toward a target may influence their impressions of the target independent of any interaction with the target (Paths *e* and *f*). For example, perceivers' impressions of a target may be influenced by their plans for behaving with target even if they never have the opportunity to interact with the target. That is, their ideas about what would happen during the interaction and how major players in the interaction would act could influence their later impressions of the target.

Second, if prior to interacting with the target perceivers develop their strategies together, then they may communicate their expectations for the target to one another and thus, influence each other's plans for interacting with the target (Paths *g* and *h*). In some situations the flow of information may be bidirectional as each perceiver expresses his or her opinions about the target and their plans for interacting with him or her. In other situations, only one perceiver may have access to the other's opinions and plans for interacting with the target. Perceivers may communicate their expectations through the nature of the conversation or the questions they pose, their tone of voice, their posture, etc.

Third, perceivers' strategies for how they would interact with the target can influence their actual behaviors toward the target (Paths *i* and *j*). Once perceivers have specified their plans for interacting with a target, they may be more committed to that course of action which may then influence their later impressions of the target (Moriarty, 1960).

Behaviors during a Social Interaction

Perceivers may convey their expectations to other perceivers and to the target during a social interaction. The behaviors expressed during a social interaction can contribute to perceivers' later impressions of a target in two ways. First, perceivers' behaviors during the social interaction may influence perceivers' impressions of a target independent of the target's behavior (Paths *k* and *l*). For example, perceivers who act in a manner consistent with their expectation may convince themselves that their behavior was warranted (Davis & Jones, 1960). Thus, even if target's display behaviors contrary to perceivers' expectation, perceivers may still choose to believe their expectations by explaining away the target's behavior. For instance, perceivers may simply decide to ignore the target's behavior because they believe that the target is attempting to mislead them or because they do not believe they are adequately able to test their expectations. In this way, perceivers are able to rationalize their behavior and come to believe their expectations have been confirmed.

Second, perceivers may influence a target's behavior (Path *m*) and in turn that behavior may influence each perceiver's subsequent impressions of him or her (Paths *n* and *o*). In this case, perceivers have acted on their expectations which have caused changes in the target's behaviors. Perceivers may then use these changes as evidence that their expectations have been confirmed. In some situations, targets may behaviorally confirm perceivers' expectations resulting in a self-fulfilling prophecy. The potential for a perceptual bias to occur exists when perceivers overestimate the degree to which the target confirmed their expectations. Regardless of whether or not a target behaves consistently with an expectation, a perceptual bias exists to the extent that perceivers' impressions are based more on their expectations than on objective reality.

Paths to Accumulation.

The potential for accumulation of perceptual bias effects occurs whenever perceivers have the opportunity to communicate their similar expectations to one another or through a target. Thus, according to this model, accumulation can occur prior to social interaction if perceivers are given an opportunity to communicate to one another or from any of the paths stemming from the social interaction.

First, the opportunity for perceivers to communicate prior to social interaction means that the accumulation process may begin as perceivers anticipate how they will behave toward a target (Paths *g* and *h*). As mentioned previously, communication could be bidirectional or unidirectional. One perceiver's expectation has the potential to contaminate the other's expectation if their expectations are dissimilar or to result in the accumulation of perceptual bias effects if their expectations are similar.

Second, accumulation may occur when perceivers' behaviors during a social interaction influence a target's behavior (Path *g*), which then influences perceivers' subsequent impressions (Paths *j* and *k*). For example, perceivers who both expect the target to act in a hostile manner may treat the target in a hostile manner. The target may respond to this treatment in many different ways, such as by acting more hostile, ignoring perceivers' behaviors, or acting non-hostile in an attempt to smooth over the interaction. It is possible that perceivers may interpret these various behaviors as confirming their expectations to a greater extent when perceivers have similar expectations than when they have dissimilar expectations or are acting alone.

Third, accumulation of perceptual bias effects may occur through perceivers' communication of their expectations without taking into consideration the target's actual

behavior (Paths *h* and *i*). For example, perceivers acting on a shared expectation that a target is hostile may observe one another's behaviors and use that as evidence that the target is hostile. In other words, each perceiver's behavior may serve to justify the other's treatment and impressions of the target.

Chapter 5: Experimental Overview in the Context of the Legal System

Investigators and Perceptual Bias Effects

Two studies were conducted to examine the accumulation of perceptual bias effects across perceivers. These studies were specifically designed to identify the source of the underlying mechanisms involved in the accumulation process. These issues were examined within the context of an important legal area, the interrogation of suspects.

The recent discovery of numerous wrongful convictions has prompted those within the criminal justice system and researchers outside the system to investigate factors and procedures that may be contributing to these errors. The interrogation has been identified as one area in which problems may arise as a result of inaccurate expectations (e.g., Drizin & Leo, 2004; Findley & Scott, 2006; Kassin & Gudjonsson, 2004).

Investigators, like all people, may be biased in their assessments of another individual because of their expectations and prior beliefs. Indeed, the situation in which investigators find themselves is one that encourages an expectation that suspects are guilty individuals who will likely lie and repeat their criminal behavior if given a chance (Leo, 1996a; Meissner & Kassin, 2002). Many investigators are trained to use the Reid Technique which includes an interview and interrogation process (Buckley, 2006). The objective of the interview is to gather information and to 'size-up' potential suspects. The objective of the interrogation is somewhat more complex as investigators simultaneously attempt to learn the truth while seeking to secure a confession. The interrogation takes place in a controlled environment and is characterized as accusatory and persuasive. Investigators are instructed not to interrogate a suspect until they are reasonably certain that the suspect is guilty. In fact, the first step in the

nine steps of the Reid interrogation begins with a confrontation in which the investigator makes it clear that he or she believes the suspect is guilty.

On what basis do investigators determine whether or not suspects are guilty?

Although Kassin (2006) notes that there are many instances in which decisions to interrogate suspects are clearly reasonable (i.e., based on the evidence, eye-witness testimony, etc.), in other instances investigators decisions may be based on mere hunches or speculation. During the interview, investigators may decide that a suspect is guilty because they believe that the suspect is attempting to deceive them in some way. However, research suggests that people are not particularly good at determining whether or not someone is lying (see Bond & DePaulo, 2006 for a meta-analysis). Additionally, most research suggests that investigators and other personnel trained in deception techniques perform at levels similar to laypersons (Garrido, Masip, & Herrero, 2004). Although there is some research suggesting that investigators are able to detect deception at levels above chance, accuracy levels are still far from perfect (Mann, Vrij, & Bull, 2004). Furthermore, there is evidence to indicate that the verbal and non-verbal behaviors specified in training manuals do not reliably distinguish liars from truth-tellers (Mann et al., 2004; Vrij, Mann & Fisher, 2006). Paradoxically, research also suggests that training tends to increase people's confidence in their ability to detect lies, but does not lead to significant increases in people's actual ability to detect lies (Kassin & Fong, 1999; Kassin, Meissner, & Norwick, 2005). Thus, there is the potential for investigators to interrogate suspects that have been erroneously labeled as guilty.

Investigators' expectations about suspects' guilt becomes problematic when it prevents them from considering alternative theories (Findley & Scott, 2006). That is, when their expectations bias their evaluation of the evidence in a manner that is consistent with

their expectations. Thus, this is one area in which perceptual bias effects have the potential to occur. In addition, because investigators often work in teams there is also the potential for their individual perceptual bias effects to accumulate across team members.

Overview of Experiments

The underlying mechanisms in the accumulation of perceptual bias effects were examined in two studies. As outlined in the theoretical model, the accumulation of perceptual bias effects may occur through changes in the target's behavior or changes in perceivers' behavior. These experiments held the target's behavior constant and thus, only examined the accumulation process through changes in the perceivers' behaviors or impressions. Perceivers' expectations about a target suspect's guilt were manipulated. Perceivers' impressions of the suspect and potential underlying mechanisms involved in the accumulation process were examined in both experiments. Additionally, two preliminary studies were performed in order to examine these issues.

Chapter 6: Preliminary Study 1: Evaluating Criminal Cases

Overview

The primary objective in the first preliminary study was to determine whether or not perceivers' expectations about a target's guilt were manipulated using case information. I addressed this issue by having participants read one of two versions of a murder case (Ask & Granhag, 2005). One version of the case provided information suggesting that there may be an alternative suspect who committed the murder. The other version of the case provided participants with a possible motive for the suspect to have committed the murder. I hypothesized that participants who received information that the suspect had a motive would be more likely to believe the suspect is guilty, have a more negative impression of the suspect, and be more likely to expect deceitful behavior from the suspect than participants who received information that there may be an alternative suspect who committed the murder. Information obtained in the first preliminary study was used to manipulate perceivers' expectations in the main studies.

Methods

Participants

Twenty-six participants were recruited from the Psychology Department's Research Participation Pool at Iowa State University. The sample included 10 males, 15 females, and 1 participant who did not indicate gender. The mean age of participants was 20 and approximately 65% of the sample identified themselves as Caucasian. In exchange for their participation, students earned credit in their psychology courses.

Materials

Manipulating expectations. Participants were given a case that provided information about a murder and a suspect (Appendix A). Two versions of this case were constructed to manipulate participants' expectations for the suspect. One version presented information that suggested that there may be an alternative suspect in the case (i.e., weak case), whereas the other presented information that suggested that the suspect had a motive to have committed the crime (i.e., strong case). These cases have been used in previous research and were revised in the current research to increase clarity (Ask & Granhag, 2005).

Measuring expectations and impressions. A questionnaire was used to measure participants' expectations and impressions of the suspect (Appendix B). Participants rated the extent to which they believed the suspect was intelligent, honest, moral, upset, truthful, calculating, unstable, warm, and a typical criminal on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). A global impression of the suspect was created by averaging the following items: intelligent, honest, moral, truthful, warm, and typical criminal, the latter of which was reversed coded. High scores indicate a more positive global impression of the suspect, $\alpha = .86$.

Participants also responded to statements and questions focusing on their beliefs about the suspect's guilt. The following four items were averaged to create a composite variable of suspect's guilt: a) "I think Eva's (*suspect's*) description of what happened is believable.", b) "During the interview with Eva, I would expect her to lie.", c) "I believe Eva is responsible for the victim's death, and d) "Eva is guilty." Participants rated their agreement with these statements on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly*

agree). Items were reversed coded as necessary so that high scores indicated a greater belief in the suspect's guilt, $\alpha = .83$.

Procedure

Participants were run in groups, but completed all materials independently. Upon arriving at the experiment, participants were asked to read and sign a consent form. After consenting to participate, participants were instructed to read a criminal case from the perspective of an investigator. Participants were randomly assigned to either receive the weak case or the strong case. Participants were then asked to fill out questionnaires that assessed their expectations and impressions of the suspect, their demographic information (Appendix C), and their suspicion (Appendix D). Lastly, participants were debriefed and thanked for their participation.

Results and Discussion

Manipulating Expectations

Two independent samples t-tests were performed to examine whether participants' impressions of the suspect would differ based on the type of case they received (i.e., weak versus strong). It was hypothesized that participants receiving the strong case would have less positive global impressions of the suspect and would be more likely to believe the suspect was guilty than participants receiving the weak case. In the first t-test, participants' global impressions of the suspect served as the dependent variable. Consistent with the hypothesis, participants receiving the weak case ($M = 3.51$) had a more positive global impression of the suspect than participants receiving the strong case ($M = 2.71$), $t(24) = 2.70$, $p = .012$, $d = 1.06$.

In the second t-test, participants' beliefs about the suspect's guilt served as the dependent variable. Results indicated that there was not a significant difference in participants' beliefs about the suspect's guilt for those in the strong condition ($M = 4.54$) compared to those in the weak condition ($M = 4.06$), $t(24) = 1.28$, $p = .214$, $d = .50$, although the pattern of means was in the expected direction.

The results of these analyses suggest some support for the hypothesis that the case would influence participants' beliefs about the suspect. Participants who read the weak case had a more positive global impression of the suspect than participants who read the strong case. Although the difference in participants' evaluations of the suspect's guilt was not significantly different based on the version of the case read, the means were in the expected direction. It is possible, that the number of participants in each condition was not large enough to detect the difference in means. Indeed, the effect size of the case on beliefs about the suspect's guilt was moderate. Regardless, it is important that the cases induce different expectations and yet be ambiguous enough to avoid ceiling effects which would reduce the possibility of finding accumulation effects. Thus, no changes were made to either of the two cases.

Chapter 7: Preliminary Study 2: Evaluating Techniques and Questions/Statements

Overview

The primary objective of the second preliminary study was to determine participants' perceptions of interview/interrogation techniques, questions, and statements. Participants were given a lists of techniques, questions, and statements and asked to rate the aggressiveness and guilt-presumptiveness of each one. This information was used to determine which techniques, questions, and statements were to be used in the main experiments.

Methods

Participants

Twenty participants were recruited from the Psychology Department's Research Participation Pool at Iowa State University. The sample included 6 males and 14 females. The mean age of participants was 19 and approximately 95% of the sample identified themselves as Caucasian. In exchange for their participation, students earned credit in their psychology courses.

Materials

Interrogation techniques, questions, and statements. A list of 20 interview/interrogation techniques and a list of 30 interview/interrogation questions and statements were generated (see Tables 1 and 2, respectively). These lists contained both accusatory and non-accusatory items. The accusatory items were based on research descriptions of actual techniques used during interrogations (Leo, 199b) and those based on the Reid Technique (Inbau, Reid, Buckley, & Jayne, 2005). The non-accusatory items were created by experimenters.

Participants rated how aggressive each technique and question or statement was on a four point scale with anchors 1 (*not at all aggressive*) and 4 (*very aggressive*). Participants also rated how guilt presumptive each technique was responding to the following statement: “If an investigator used this technique, he or she was probably ____ that the suspect committed the crime.” A four point scale with anchors 1 (*doubtful*) and 4 (*absolutely convinced*) was provided to participants. The order in which each of the techniques were presented varied across dimensional ratings (i.e., aggressiveness and guilt-presumptiveness). In addition, the order in which dimensions were presented was counterbalanced.

Procedures

Participants were run in groups, but completed all materials independently. Upon arriving at the experiment, participants were asked to read and sign a consent form. After consenting to participate, participants were given lists of techniques and questions and statements to evaluate. Participants were then asked to respond to questionnaires that assessed their demographic information (Appendix C) and their suspicion (Appendix D). Lastly, participants were debriefed and thanked for their participation.

Results and Discussion

Table 1 presents participants’ mean ratings of the aggressiveness and guilt-presumptiveness of each of the interview/interrogation techniques. Table 2 presents participants’ mean ratings of the aggressiveness and guilt-presumptiveness of each of the interview/interrogation questions and statements. Both tables indicate which items were originally designed to be accusatory and non-accusatory.

Two sets of independent samples t-tests were conducted to examine whether participants would perceive the items in a manner consistent with the labels given by

experimenters. One set focused on the interview/interrogation techniques and the other set focused on the interview/interrogation questions and statements. In all analyses, the label of the item (i.e., accusatory or non-accusatory) served as the independent variable. Participants' mean ratings of aggressiveness and guilt-presumptiveness were averaged separately based on the label of the items. For example, mean ratings of all techniques labeled as accusatory were averaged together and mean ratings of all techniques labeled as non-accusatory were averaged together. Thus, four variables were created and these variables served as the dependent variables.

Results from the first set of t-tests indicated that participants rated the techniques labeled accusatory as more aggressive ($M= 2.84$) and guilt-presumptive ($M= 2.89$) than the techniques labeled non-accusatory ($M= 1.57, M= 2.07$, respectively), $t(18) = 5.69, p < .001, d = 2.66$; $t(18) = 6.18, p < .001, d = 2.73$, respectively. Results from the second set of t-tests indicated that participants rated the questions and statements labeled accusatory as more aggressive ($M= 2.75$) and guilt-presumptive ($M= 3.03$) than those labeled non-accusatory ($M= 1.42, M= 1.94$, respectively), $t(28) = 6.75, p < .001, d = 2.46$; $t(28) = 8.14, p < .001, d = 2.97$, respectively.

These results indicated that participants viewed the accusatory items as more aggressive and more guilt-presumptive than the non-accusatory items. Individual items were then ranked ordered based on participants' mean ratings of their aggressiveness and guilt-presumptiveness. Items that fell towards ends of the scales represent items that more clearly distinguished themselves as non-accusatory or accusatory, whereas items that fell towards the middle of the scales represent items that were more ambiguous. Based on these rankings, eight techniques were selected as accusatory and six techniques were select as non-

accusatory. Table 1 indicates which techniques were selected for the main experiments. Eleven questions and statements were selected as accusatory and eleven questions and statements were selected as non-accusatory. Table 2 indicates which techniques were selected for the main experiments.

Chapter 8: Experiment 1: Accumulation through Prior Information

Overview

This experiment had two objectives. Its first objective was to determine if perceptual bias effects accumulate across perceivers in a situation in which explicit information about another's impressions of the target is learned prior to developing one's strategies for interacting with a target (see Figure 2). In the previous investigation of cumulative perceptual bias effects, perceivers took part in a face-to-face interaction in which their impressions of a target were communicated (Willard et al., 2008). In this experiment, impressions of a target are communicated through a bogus statement in which a purported other explicitly asserts his or her beliefs about a target. Thus, this experiment examined whether accumulation of perceptual bias effects was possible without face-to-face contact with a real perceiver and target.

Its second objective was to examine the extent to which biased assimilation processes and consensus contributed to any observed accumulation pattern. Although the previous study provided evidence that suggested accumulation of perceptual bias effects was occurring, it did not provide any evidence for how that process was occurring (Willard et al., 2008). Thus, this experiment sought to offer explanations as to how accumulation operates.

These objectives were examined by influencing participants' expectations about the suspect's guilt and exposing some participants to a social influence situation. Following the procedures of Preliminary Study 1, participants' expectations about the suspect's guilt were manipulated with case information that led participants to believe either that (a) there was an alternative suspect who may have committed the crime (i.e., weak case) or (b) the suspect had a motive for committing the crime (i.e., strong case). Social influence was manipulated

with the presence or absence of a written statement pertaining to the suspect's guilt, purportedly written by another participant. The written statement included no factual information and always matched the expectation that participants were given. That is, participants assigned to the weak expectation condition always received a written statement indicating that the other participant perceived the suspect to be not guilty, whereas participants assigned to the strong expectation condition always received a written statement indicating that the other participant perceived the suspect to be guilty; thus, placing participants in a situation in which they might be socially influenced. Consistent with an accumulation process, it was hypothesized that participants placed in a social influence situation would have beliefs and impressions of the suspect that were more in line with their expectations than those participants not placed in a social influence situation. Furthermore, it was hypothesized that participants in a social influence situation would engage in more biased assimilation processes than those not in a social influence situation. In addition, perceived consensus was expected to influence impressions of the suspect, beliefs about the suspect's guilt, and perceiver's confidence in their impressions.

Methods

Participants

Participants consisted of 145 undergraduates recruited from the Psychology Department's Research Participation Pool at Iowa State University. The sample included 88 males, 56 females, and 1 participant who did not indicate gender. The mean age of participants was 20 and approximately 82% of the sample identified themselves as Caucasian. In exchange for their participation, students earned credit in their psychology courses.

Design

Participants were assigned to a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) between subjects factorial design. Participants' expectations of the suspect's guilt were manipulated by giving them either a weak or strong case. Social influence was manipulated by not providing participants with information from a purported other or by providing participants with a bogus participant's opinions about the suspect's guilt. The condition in which participants received a weak expectation and no social influence is subsequently referred to as the weak-no social influence condition. The condition in which participants received a weak expectation and no social influence is subsequently referred to as the strong-no social influence condition. The condition in which participants received a weak expectation and social influence is subsequently referred to as the weak-social influence condition. The condition in which participants received a strong expectation and social influence is subsequently referred to as the strong- social influence condition.

Materials

Manipulating expectations. The case information discussed in Preliminary Study 1 was used to manipulate participants' expectations in this experiment (Appendix A). Participants in the weak expectation conditions received a case that suggested that there was an alternative suspect in the case, whereas participants in the strong expectation conditions received a case that indicated the suspect had a motive for committing the crime.

Manipulating social influence. Participants in the no social influence conditions were never given any information that indicated another's beliefs about the suspect's guilt.

Participants in the social influence conditions received a handwritten bogus statement

indicating another's beliefs about the suspect's guilt. This statement always matched the expectation induced, such that participants assigned to weak-social influence condition always received a statement that indicated the bogus participant believed the suspect was not guilty whereas participants assigned to the strong-social influence condition always received a statement that indicated the bogus participant believed the suspect was guilty (Appendix E).

Interrogation summary. A summary of an interview/interrogation with the suspect was created (Appendix J). This summary contains both vague and specific questions asked by a fictional investigator. In addition, it contains descriptions of the suspect's behavior and reactions to questions. The summary was designed to be ambiguous and to contain no new information about the case. It was provided in order to examine whether participants would engage in the biased assimilation process of interpreting ambiguous information in a manner consistent with one's expectation.

Participants' Impressions and Mechanisms Related to Accumulation

Manipulation checks. Three items served as a manipulation check of the expectation manipulation. Participants were given the following two statements that contained key information that distinguishing the weak case from the strong case: "Eva had a motive for the crime" and "The victim received phone calls in which a man threatened her." (Appendix K) Participants responded by selecting true, unsure, or false. The third item measured whether the two cases influenced participants' expectations of the suspect's likelihood of lying. Participants rated their agreement with the statement "During an interview with Eva, I would expect her to lie." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*) (Appendix F).

In addition, participants in the social influence conditions also responded to one item that was used to check whether they clearly differentiated between the not-guilty and guilty versions of the bogus participants' statement. This item asked participants in the social influence condition to rate their agreement with the statement "Based on the participant's written statement, I think he or she thought the suspect was guilty" (Appendix K). Participants made their ratings on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' impressions of the suspect. Participants' impressions of the suspect were measured by having them rate the extent to which they believed the suspect was intelligent, honest, moral, upset, truthful, calculating, unstable, warm, and a typical criminal (Appendix F). Participants rated their agreement with these adjectives describing the suspect on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). An impression of the suspect was created by averaging the following items: intelligent, honest, moral, truthful, warm, and typical criminal. Participants' responses to the typical criminal item were reversed coded so that high scores indicated a more positive impression of the suspect, $\alpha = .84$.

Participants' beliefs about the suspect's guilt. Participants' beliefs about the suspect's guilt were measured with three items (Appendix K). First, participants rated their agreement with the statement "Eva murdered the victim." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Second, participants circled either *not guilty* or *guilty* in response to the item "I believe Eva is...". Third, participants circled either *not convict* or *convict* to the item "If I were on a jury and had to make a decision right now as to whether or not Eva should be convicted of the crime, my decision would be to..." This last item was

added after the study had begun; thus, the sample that answered this question is much smaller ($n = 55$).

Participants' selection strategies. Four sets of measures assessed the extent to which participants sought information consistent with their expectations. The first set of measures consisted of 14 interview/interrogation techniques that were based on the results obtained from Preliminary Study 2. Eight of these techniques were accusatory and six were non-accusatory. In order to keep the number of accusatory and non-accusatory techniques equal, two additional questions were added. Thus, this measure included 16 interrogation techniques in all (Appendices G and H). Another measure was constructed that included the same 16 techniques, but the order in which the techniques were presented was reversed. Participants were asked to select five techniques that they would use during an interrogation with the suspect. The number of techniques selected by participants measured the extent to which participants were seeking information in a manner consistent with their expectations. Higher scores indicate that a greater number of accusatory techniques were selected.

The second set of measures consisted of 22 interview/interrogation questions and statements that were based on the results obtained from Preliminary Study 2. Half of these items were accusatory and half were non-accusatory (see Table 2 or Appendix I). Participants were asked to select eight questions or statements that they would use during an interrogation with the suspect. Once again, the number of questions or statements selected measured the extent to which participants were seeking information consistent with their expectations. Higher scores indicated that a greater number of accusatory questions or statements were selected.

The third set of measures consisted of the same 22 interview/interrogation questions and statements mentioned above. In Preliminary Study 2, each question or statement was evaluated by participants in terms of its aggressiveness and guilt-presumptiveness. Two variables were created on the basis of this information. One variable equaled the average item aggressiveness of questions and statements selected. Another variable equaled the average item guilt-presumptiveness of questions and statements selected. Scores could range from one to four with higher scores indicating that participants selected questions or statements with a greater degree of aggressiveness or guilt-presumptiveness.

The fourth set of measures included two items that assessed participants' goals and efforts in selecting techniques: "I selected techniques with the primary goal of getting the suspect to confess" and "I put a lot of thought into the interview/interrogation strategies that I selected." Participants rated their agreement with these statements on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' interpretations. Four sets of items assessed the extent to which participants interpreted the case and the suspect's behavior as described in the interview/interrogation summary as consistent with their expectations (Appendix K). Participants' interpretation of the suspect's behavior during the interview/interrogation (as described in the summary) was assessed with five items embedded among four other items. Participants rated the extent to which they believe the suspect was defensive, honest, friendly, truthful, and warm during the interview on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Participants' responses to the defensive item were reversed coded so that high scores indicated a more positive interpretation of the suspect's behavior, $\alpha = .74$.

The second set of items measured participants' beliefs about the truthfulness of the suspect: "Based on Eva's behavior as described in the summary, I think she is telling the truth." and "Eva's denials were very convincing." Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Participants' responses to these two items were averaged, $r = .61, p < .001$. High scores indicated greater belief in the suspect's truthfulness.

The third set of items measured participants' perceptions of the strength of the case evidence: a) "It is likely at this point that I would continue investigating the crime in order to look for alternative suspects.", b) "I think that Eva's account of the event is plausible.", c) "I believe there is enough evidence to arrest Eva for committing the crime.", and d) "The evidence against Eva is very persuasive." Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Responses to the first two items were reversed coded and then responses to the four items were averaged. High scores indicate stronger beliefs about the strength of the evidence against the suspect, $\alpha = .56$.

The fourth item measured the participants' perceptions about the consistency between their expectations and the behavior displayed by the suspect in the interview/interrogation summary. Participants rated their agreement with the statement "Eva behaved as I expected during the interview/interrogation (i.e., summary)." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' memory. A list of 11 statements was constructed to measure bias in participants' memory (Appendix K). Some of the statements were true, some were false, and some were not specified by the case. Next to each statement participants indicated whether it

was true, false, or if they were unsure. Seven of the items were then used to create an index of bias, presented in Table 3. If items were accurately remembered or if participants indicated unsure responses, then their responses were coded as 0. If items were inaccurate in a direction that suggested the suspect was not guilty, then their responses were coded as -1. If items were inaccurate in a direction that suggested the suspect was guilty, then their responses were coded as 1. For example, the statement “Eva called the police” was a false statement. Participants that indicated that this was false or were unsure were given a 0 code. Participants that indicated that this was true would be incorrect and the direction suggested the suspect was not guilty; thus, they were given a -1 code. Participants’ coded responses were summed and could range from -5 to +5. Codes for each of the items can be found in Appendix G. Four of the items were excluded from this index because incorrect responses could not be assigned a direction of bias.

Certainty. Two items measured participants’ certainty through confidence. Participants’ confidence was assessed with the following two items: “I am confident in my assessment of Eva’s guilt” and “I am confident that Eva is the true culprit in this crime” (Appendix K). Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Perceived consensus. Participants’ perceived consensus was only measured for those in the social influence conditions. Consensus was assessed through participants’ perceptions of how similar their opinions were to the bogus participants’ opinions (Appendix K). Participants answered the following question “The other participant and I have similar opinions about the case.” Participants also answered another other item related to consensus but used for exploratory purposes: “The other participant made a convincing argument.”

Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Procedures

Participants independently completed materials alone or in small groups. Upon arrival, participants were asked to read and sign a consent form. After consenting to participate, participants were told that they would be evaluating a real criminal case from the perspective of an investigator. Participants were then handed a stack of folders and asked to follow additional instructions contained within the folders. Participants' expectations about the suspect's guilt were manipulated by having them to read either the weak or strong versions of the case (Appendix A). Next, social influence was manipulated. Participants in the social influence conditions received a handwritten statement from a purported participant that indicated his or her impressions about the suspect's guilt (Appendix E). This bogus statement matched the expectation induced (i.e., not-guilty for participants assigned to the weak- social influence expectation condition and guilty for participants assigned to the strong-social influence expectation condition). Participants in the no social influence conditions did not receive this information. Experimenters were blind to condition until the completion of the study.

Participants then completed a questionnaire that asked about their initial impressions of the case (Appendix F). Next, participants received the list of interview/interrogation techniques and interview/interrogation questions and statements (Appendices H and I). Participants were instructed to select five techniques and eight questions and statements they would use if given the opportunity to talk to the suspect. Participants were instructed to select techniques, questions, and statements that would help them uncover the truth and, if they

believed the suspect was guilty, to get the suspect to confess. After making their selections, participants received information that indicated the experimenters had access to the real interview with the suspect. However, participants were told that due to time constraints, they will only be reading a brief summary of the interview-interrogation (Appendix J). After reading the summary, participants were given questionnaires that assessed the following: their impressions of the suspect's guilt, interpretation of information, memory of evidence, certainty, consensus (Appendix K), demographic information (Appendix C), and suspicion (Appendix D). Finally, participants were debriefed and thanked for their participation.

Results

Preliminary Analyses

Assessing suspicion. Ten participants in the social influence conditions believed that the purpose of the study was to examine how they would be influenced by others' beliefs. These participants were split evenly across expectation conditions. Analyses were conducted with and without these participants. The pattern of results remained the same; therefore, all ten of these participants were included in subsequent analyses. One participant indicated a disbelief in the authenticity of the social influence provided and was thus removed from subsequent analyses.

Expectation manipulation. Two sets of analyses were conducted to determine if the weak and strong cases influenced participants' expectations about the suspect's guilt in the manner intended. First, two frequency analyses were conducted to examine whether participants were aware of the key information that served to manipulate their expectations. Specifically, participants who received the weak case were exposed to information stating that the victim had received threatening phone calls from another person, thereby suggesting

that there was an alternative suspect in the case. If participants who received the weak case indicated that this was a false statement, then their response was incorrect ($n = 1$).

Participants who received the strong case were exposed to information stating the victim had a motive for committing the crime. If participants who received the strong case indicated that this was a false statement, then their response was incorrect ($n = 2$). Three participants responded incorrectly to one of these items and were excluded from all subsequent analyses. The final sample breakdown, including gender information, is presented in Table 4.

Second, I examined whether the two cases induced different expectations about the suspect. I hypothesized that participants receiving the strong case would be more likely to expect the suspect to lie during an interview than participants receiving the weak case. An independent samples t-test was conducted in which expectation condition (i.e., weak versus strong) served as the independent variable and participants' agreement with a statement indicating whether they expected the suspect to lie served as the dependent variable. Consistent with the hypothesis, participants receiving the strong case were more likely to expect the suspect to lie ($M = 4.23$) than participants receiving the weak case ($M = 3.66$), $t(138) = 3.86$, $p < .001$, $d = .65$. This suggests that the cases had effectively induced different expectations of the suspect's guilt.

Social influence manipulation. I performed a t-test to determine if there was a significant difference in participants' perceptions of the bogus participant's statement (i.e., not guilty versus guilty statements). I hypothesized that participants assigned to the strong-social influence conditions would be more likely to believe that the bogus participant thought the suspect was guilty than participants assigned to the weak-social influence condition. An independent samples t-test was conducted to examine this hypothesis among participants in

the social influence conditions. The version of social influence (i.e., not-guilty versus guilty) served as the independent variable and participants' beliefs about the bogus participant's opinions about the suspect's guilt served as the dependent variable. Consistent with the hypothesis, participants in the strong-social influence condition believed that the bogus participant thought the suspect was guiltier ($M = 4.88$) than participants in the weak-social influence condition ($M = 2.69$), $t(64) = 6.20$, $p < .001$, $d = 1.52$. This suggests that participants were able to accurately determine the bogus participants' opinions about the suspect.

Descriptive information. Correlations, means, and standard deviations for the primary measures are presented in Table 5.

Accumulation of Perceptual Bias Effects

Four sets of analyses focusing on participants' impressions of the suspect and of the suspect's guilt were conducted to examine the hypothesis that perceptual bias effects accumulate across perceivers. In these analyses, expectation (i.e., weak versus strong) and social influence (i.e., no social influence versus social influence) served as the independent variables. In order for accumulation to occur, results should indicate a main effect of expectation, such that those in the strong expectation conditions have less positive impressions of the suspect and greater beliefs about the suspect's guilt than those in the weak expectation conditions. Results should also indicate an interaction effect between expectation and social influence such that participants' impressions of the suspect and the suspect's guilt are most negative in the strong-social influence condition, followed by the strong-no social influence condition, weak-no social influence condition, and weak-social influence condition, respectively.

Accordingly, when these analyses yielded a significant interaction between expectation and social influence, planned contrasts were performed to test whether the pattern of means supported the accumulation hypothesis. One planned contrast examined participants' responses to the dependent variables in the weak-social influence condition compared to those in the weak-no social influence condition. Results would support the accumulation hypothesis if participants in the weak-social influence condition had more positive impressions of the suspect and the suspect's guilt than participants in the weak-no social influence conditions (i.e., weak-social influence condition > weak-no social influence condition). The other planned contrast examined differences in participants' responses to the dependent variables in the strong-social influence condition compared those in the strong-no social influence condition. Results would support the accumulation hypothesis if participants in the strong-social influence condition had less positive impressions of the suspect and the suspect's guilt than participants in the strong-no social influence condition (i.e., strong-social influence < strong-no social influence condition).

I first tested the accumulation hypothesis with a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) analysis of variance (ANOVA) in which the dependent variable was participants' impressions of the suspect. As shown in Table 6, results indicated that there was a main effect of expectation, $F(1, 136) = 15.07, p < .001, \eta^2 = .10$. Participants given a weak expectation had more positive impressions of the suspect ($M = 3.79$) than participants given a strong expectation ($M = 3.35$). There was no main effect of social influence, $F(1, 136) = .01, p = .919, \eta^2 < .01$, nor an interaction effect between expectation and social influence, $F(1, 136) = 3.02, p = .084, \eta^2 = .02$.

I next tested the accumulation hypothesis with a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which participants' agreement with the statement "Eva murdered the victim" served as the dependent variable. As shown in Table 6, results indicated that there was not a main effect of expectation, $F(1, 133) = 1.40, p = .238, \eta^2 = .01$, of social influence $F(1, 133) = .40, p = .531, \eta^2 < .01$, nor an interaction effect between expectation and social influence, $F(1, 133) = 1.02, p = .314, \eta^2 = .01$.

I also tested the accumulation hypothesis with a chi-square analysis in which participants' responses to the dichotomous question pertaining to the suspect's guilt (i.e., not guilty versus not guilty) served as the dependent variable. As shown in Figure 4, the pattern did not conform to an accumulation pattern, $\chi^2(139) = 5.23, p = .137, \phi = .20$. Although the percentage of participants who believed the suspect was guilty was the lowest for those in the weak-similar social information condition (46%), it was not highest among those in the strong-similar social information condition (68%).

Lastly, I performed another chi-square analysis to examine participants' willingness to convict the suspect. For this analysis, participants' responses to the dichotomous question of whether or not to convict the suspect served as the dependent variable. As shown in Figure 5, this pattern did not conform to an accumulation pattern, $\chi^2(65) = 8.49, p = .204, \phi = .36$. Although the percentage of participants who choose to convict the suspect was lowest for those in the weak-similar social information condition (21%), it was not highest among those in the strong-similar social information condition (47%).

The pattern of data across each of these analyses is not consistent with an accumulation process. However, in order for accumulation to occur, participants must believe

that someone else's beliefs about a given target are similar to their own beliefs about the target. The social influence conditions were designed to maximum the chances of agreement by matching the type of induced expectation with the type of social influence given to participants. That is, participants in the social influence conditions either received the weak case and information that the bogus person thought the suspect was not-guilty or received the strong case and information that the bogus person thought the suspect was guilty. It is possible, however, that despite my attempts to ensure that participants in the social influence conditions received information that was similar to their expectations, participants may have held beliefs about the suspect's guilt that were counter to those of the bogus participant's. If participants believed that their own beliefs were dissimilar from the bogus participant's beliefs, then the accumulation process should not occur. Thus, in the following section I first identify participants who believed they held similar beliefs and reanalyze the data according to procedures identified earlier.

Identifying perceived similarity. I identified participants who held similar and dissimilar beliefs by examining their agreement with the following statement: "The other participant and I have similar opinions about the case." Frequency analyses indicated that 36 participants somewhat agreed to strongly agreed with this statement. Of these participants 19 were from the weak-social influence condition, subsequently referred to as the weak-similar social influence condition, and 17 were from the strong-social influence condition, subsequently referred to as the strong-similar social influence condition. The remaining 29 participants somewhat disagreed to strongly disagreed with the statement. Of these participants, 13 were from the weak-social influence condition, subsequently referred to as the weak-dissimilar social influence condition, and 16 were from the strong-social influence

condition, subsequently referred to as the strong-dissimilar social influence condition. Seven participants failed to respond to this statement and were placed in the similar conditions after analyses indicated similar results with or without them. Thus, the final sample size of weak-similar social influence condition was 24 and the final sample size of strong-similar social influence condition was 19. All subsequent analyses exclude participants in the weak-dissimilar and strong-dissimilar social influence conditions except where noted.

Accumulation of Perceptual Bias Effects among Those with Similar Beliefs.

I first tested the accumulation hypothesis with a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) analysis of variance (ANOVA) in which the dependent variable was participants' impressions of the suspect. As shown in Table 7, results showed a significant main effect for expectation, $F(1, 108) = 19.39, p < .001, \eta^2 = .15$. Participants given a weak expectation had more positive impressions of the suspect ($M = 3.87$) than participants given a strong expectation ($M = 3.30$). Results revealed no main effect for social influence, $F(1, 108) = .10, p = .098, \eta^2 < .01$. However, there was a significant interaction between expectation and social influence, $F(1, 108) = 6.57, p = .012, \eta^2 = .05$. Means were consistent with an accumulation pattern ($M_s = 4.06_{\text{weak-similar social influence}}, 3.68_{\text{weak-no social influence}}, 3.44_{\text{strong-no social influence}}, 3.15_{\text{strong-similar social influence}}$). Accordingly, the two planned contrasts described above were performed.

The results of these contrasts supported the accumulation hypothesis. Specifically, they showed that: (1) participants in the weak-similar social influence condition had significantly more positive impressions of the suspect ($M = 4.01$) than participants in the weak-no social influence condition ($M = 3.68$), $t(108) = 2.09, p = .039, d = 1.43$ and (2)

participants in the strong-similar social influence condition had less positive impressions of the suspect ($M = 3.15$) than did participants in the weak-no social influence condition ($M = 3.44$), though this difference did not attain statistical significance, $t(108) = 1.55, p = .124, d = .42$.

I next tested the accumulation hypothesis with a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which participants' agreement with the statement "Eva murdered the victim" served as the dependent variable. As shown in Table 7, results indicated a significant main effect of expectation, $F(1, 104) = 9.87, p = .002, \eta^2 = .08$. Participants given a strong expectation were more likely to believe the suspect murdered the victim ($M = 3.78$) than participants given a weak expectation ($M = 3.12$). There was no main effect of social influence, $F(1, 104) = .01, p = .910, \eta^2 < .01$. However, there was a significant interaction between expectation and social influence, $F(1, 108) = 8.92, p = .004, \eta^2 = .07$. Means were also consistent with an accumulation pattern ($M_s = 2.18_{\text{weak-similar social influence}}, 3.42_{\text{weak-no social influence}}, 3.46_{\text{strong-no social influence}}, 4.11_{\text{strong-similar social influence}}$). Therefore, the two planned contrasts were conducted to examine whether the pattern of this interaction supported the accumulation hypothesis.

Consistent with an accumulation process, (1) participants in the weak-similar social influence condition were less likely to believe the suspect murdered the victim ($M = 2.82$) than those in the weak-no social influence condition ($M = 3.42$), $t(104) = 2.09, p = .039, d = .57$ and (2) participants in the strong-similar social influence condition were more likely to believe the suspect murdered the victim ($M = 4.11$) than those in the strong-no social influence condition ($M = 3.46$), $t(104) = 2.14, p = .035, d = .86$.

I also tested the accumulation hypothesis with a chi-square analysis in which participants' responses to the dichotomous question pertaining to the suspect's guilt (i.e., not guilty versus not guilty) served as the dependent variable. As shown in Figure 6, the pattern appears conforms to an accumulation pattern, $\chi^2(110) = 12.95, p = .005, \phi = .34$. The percentage of participants who believed the suspect was guilty was the lowest for those in the weak-similar social information condition (33%) and highest for those in the strong-similar social information condition (83%). Two partitioned chi-square analyses were conducted to examine whether the pattern supported the accumulation hypothesis.

The first analysis yielded results that were consistent with an accumulation process. Participants in the weak-similar social influence condition were less likely to believe the suspect was guilty (33%) than those in the weak-no social influence condition (67%), $\chi^2(56) = 12.95, p = .005, \phi = .32$. The second analysis yielded results that were less consistent with an accumulation process. Although the frequencies were in the expected direction, participants in the strong-similar social influence condition were not significantly more likely to believe the suspect murdered the victim (83%) than those in the strong-no social influence condition (69%), $\chi^2(54) = 1.21, p = .272, \phi = .15$.

Lastly, I performed another chi-square analysis to examine participants' willingness to convict the suspect. For this analysis, participants' responses to the dichotomous question of whether or not to convict the suspect served as the dependent variable. As shown in Figure 5, this pattern also conformed to an accumulation pattern, (80%), $\chi^2(55) = 11.15, p = .011, \phi = .45$. The percentage of participants who choose to convict the suspect was lowest for those in the weak-similar social information condition (18%) and highest for those in the strong-

similar social information condition. Two partitioned chi-square analyses were conducted to examine whether the pattern supported the accumulation hypothesis.

Both of these analyses yielded results that were inconsistent with an accumulation process. Although the frequencies were in the expected direction, participants in the weak-similar social influence condition were not significantly less likely to believe the suspect was guilty (18%) than those in the weak-no social influence condition (28%), $\chi^2(29) = .34, p = .558, \phi = .11$, and participants in the strong-similar social influence condition were not significantly more likely to believe the suspect murdered the victim (80%) than those in the strong-no social influence condition (56%), $\chi^2(26) = 1.53, p = .216, \phi = .24$.

Overall, the pattern of data across each of the analyses is consistent with an accumulation process. Although there was not always a significant difference in means between the weak-no social influence condition and the weak-social influence condition or between the strong-no social influence condition and the strong-social influence condition, the main effect of expectation and the interactions between expectation and social influence were significant. Thus, in the following section I examine potential processes that may have contributed to the accumulation of perceptual bias effects observed in these data.

Mechanisms Underlying the Cumulative Effects of Perceptual Biases

Several analyses were conducted to examine whether biased assimilation and consensus processes contributed to the observed accumulation pattern. Analyses first focused on the three biased assimilation processes of seeking, interpreting, and remembering information consistent with one's hypothesis. Analyses next focused on whether consensus contributed to the accumulation pattern observed. Many of the analyses were conducted using similar procedures to those outlined in the accumulation results section in which main

effects and an interaction effect between participants' expectation and social influence was examined. In order for a process to be contributing to the accumulation pattern observed, results would indicate a main effect of expectation and an interaction effect between expectation and social influence. Significant interaction effects were followed by (1) same two planned contrasts described in the previous section and (2) regression analyses testing for mediation. The analytic plan for regression analyses are described below.

The regression analyses were designed to test whether participants' interpretations mediated the effect of expectation and social influence on participants' impressions of the suspect and their beliefs about the suspect murdering the victim. This issue was addressed with a new variable, subsequently referred to as condition, was created on the basis of participants' level of expectation and level of social influence. The following codes were used to this variable: 1 for participants in the weak-similar social influence condition, 2 for participants in the weak-no social influence condition, 3 for participants in the strong-no social influence condition, and 4 for participants in the strong-similar social influence condition.

Two sets of analyses were conducted using procedures delineated by Baron & Kenny (1986). Specifically, in separate analyses, the dependent variables (i.e., participants impressions of the suspect and their beliefs about the suspect murdering the victim) were regressed on condition. Second, the potential mediator was regressed on condition. Third, the dependent variables were regressed on the potential mediator. Fourth, the dependent variables were regressed on both condition and the potential mediator.

Seeking. Four sets of analyses were conducted to examine whether participants were preferentially seeking information consistent with their expectations and whether this was

occurring to a greater extent in the social influence conditions. These analyses focused on the number of accusatory interview/interrogation techniques selected, the number of accusatory interview/interrogation questions and statements selected, the average item-aggressiveness of interview/interrogation questions and statements selected, and the average item-guilt-presumptiveness of interview/interrogation questions and statements selected by participants.

First, I performed a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which the dependent variable was the number of accusatory interview/interrogation techniques selected by participants. As shown in Table 8, results indicated neither significant main effects for expectation and social influence, $F_s(1, 107) \leq 3.60, p_s \geq .060, \eta^2_s \leq .03$ nor an interaction between these variables $F(1, 107) = .11, p = .74, \eta^2 < .01$.

Second, I performed a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which the dependent variable was the number of accusatory interview/interrogation questions and statements selected by participants. As shown in Table 8, this analysis revealed a main effect of expectation, $F(1, 101) = 4.25, p = .042, \eta^2 = .04$. Participants selected a greater number of accusatory questions and statements when given a strong expectation ($M = 3.49$) than when given a weak expectation ($M = 2.87$). Results revealed no main effect of social influence, $F(1, 101) = .18, p = .675, \eta^2 < .01$ and no interaction between expectation and social influence, $F(1, 101) = .72, p = .400, \eta^2 = .01$.

Third, I performed a (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which the average item-aggressiveness of interview/interrogation questions and statements selected by participants served as the

dependent variable. As shown in Table 8, the pattern of results is similar to those indicated by the previous analysis. Results revealed a main effect of expectation, $F(1, 105) = 4.11, p = .045, \eta^2 = .04$. Participants selected items with greater aggressiveness scores when given a strong expectation ($M = 2.00$) than when given a weak expectation ($M = 1.88$). There was no main effect of social influence, $F(1, 105) < .01, p = .953, \eta^2 < .01$, nor an interaction between expectation and social influence, $F(1, 105) = .05, p = .819, \eta^2 < .01$.

Lastly, I performed 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA in which the average item-guilt-presumptiveness of interview/interrogation questions and statements selected by participants served as the dependent variable. As shown in Table 8, Results revealed a marginally significant main effect of expectation, $F(1, 105) = 3.71, p = .057, \eta^2 < .01$. Participants selected items with greater guilt-presumptiveness scores when given a strong expectation ($M = 2.22$) than when given a weak expectation ($M = 2.33$). There was no main effect of social influence, $F(1, 105) = .03, p = .861, \eta^2 = .03$, nor an interaction between expectation and social influence, $F(1, 105) < .01, p = .972, \eta^2 < .01$.

The results of these four analyses suggest that the tendency for people to seek information consistent with their hypothesis does not account for the accumulation pattern observed in these data.

Interpreting. I performed three sets of analyses to examine the hypothesis that participants would interpret information more consistently with their expectation, especially when socially influenced. These analyses focused on participants' impressions of the suspect based on the behavior described in the interview/interrogation summary, participants'

evaluations of the suspect's truthfulness, and participants' beliefs about the strength of the evidence against the suspect.

The first 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA examined whether interpretation biases contributed to the observed accumulation effects with respect to participants' impressions of the suspect's behavior during the interview/interrogation. As shown in Table 9, results indicated no significant effects, $F_s(1, 108) \leq 2.85$, $p_s \geq .094$, $\eta^2_s \leq .03$

The second 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA examined whether interpretation biases contributed to the observed accumulation effects with respect to participants' evaluation of the suspect's truthfulness. As shown in Table 9, results revealed a significant main effect of expectation, $F(1, 108) = 8.30$, $p = .005$, $\eta^2 = .07$. Participants in the weak conditions believed the suspect to be more truthful based on the interview-interrogation summary ($M = 3.46$) than participants in the strong conditions ($M = 2.58$). There was no main effect of social influence, $F(1, 108) = .47$, $p = .493$, $\eta^2 < .01$. However, there was a significant interaction effect, $F(1, 108) = 4.31$, $p = .040$, $\eta^2 = .04$. The pattern of means were consistent with an accumulation hypothesis ($M_s = 3.46_{\text{weak-similar social influence}}, 3.21_{\text{weak-no social influence}}, 3.07_{\text{strong-no social influence}}, 2.58_{\text{strong-similar social influence}}$). Accordingly, the two planned contrasts described earlier were performed and a series of regression analyses were performed.

The results of these contrasts did not support the biased assimilation process of interpretation as contributing to accumulation effects. Specifically, they showed that: (1) participants in the weak-similar social influence condition were not significantly more likely to believe the suspect was truthful ($M = 3.46$) than participants in the weak-no social

influence condition ($M = 3.21$), $t(108) = 1.01$, $p = .315$, $d = .26$ and (2) participants in the strong-similar social influence condition were not significantly less likely to believe the suspect was truthful ($M = 2.58$) than participants in the strong-no social influence condition ($M = 3.07$), $t(108) = 1.90$, $p = .060$, $d = .56$.

Results of the regression analyses suggested that participants' beliefs about suspect's truthfulness may have only slightly contributed to the accumulation effects observed. Following the analytic plan outlined earlier, in the first step I regressed the dependent variables on the independent variable. Results indicated that condition predicted participants' impressions of the suspect, $F(1, 110) = 22.54$, $p = .001$, $B = -.29$, and participants' beliefs about the suspect murdering the victim, $F(1, 106) = 12.88$, $p = .001$, $B = .37$. In the second step I regressed the potential mediator on the independent variable. Results showed that condition predicted participants' beliefs about the suspect's truthfulness, $F(1, 110) = 9.74$, $p = .002$, $B = -.27$. In the third step the dependent variables were regressed on the potential mediator. These results indicated that participants' beliefs about the suspect's truthfulness predicted participants' impressions of the suspect, $F(1, 110) = 32.70$, $p < .001$, $B = .37$ and participants' beliefs about the suspect murdering the victim, $F(1, 106) = 69.32$, $p < .001$, $B = -.75$. In the final step the dependent variables were regressed on the independent variable and the potential mediator. As shown in Table 10, the results from these analyses indicated that the effect of condition on participants' impressions of the suspect, $B = -.21$, $p < .001$, and their beliefs about the suspect murdering the victim, $B = .19$, $p = .031$, remained significant with the inclusion of participants' beliefs about the suspect's truthfulness.

The third 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA examined whether interpretation biases contributed to the observed accumulation effects with respect to participants' beliefs about the strength of the evidence. As shown in Table 9, results indicated a main effect of expectation, such that those with a strong expectation rated the evidence as more indicative of guilt ($M = 3.37$) than those with a weak expectation ($M = 2.81$), $F(1, 108) = 19.70, p < .001, \eta^2 = .15$. There was no main effect of social influence, $F(1, 108) = .08, p = .778, \eta^2 < .01$. However, there was a significant interaction effect, $F(1, 108) = 4.81, p = .030, \eta^2 = .04$ and the pattern of means were in the expected direction ($M_s = 2.65_{\text{weak-similar social influence}}, 2.96_{\text{weak-no social influence}}, 3.25_{\text{strong-no social influence}}, 3.49_{\text{strong-similar social influence}}$). Thus, two planned contrasts and a series of regression analyses were performed.

The results of these contrasts somewhat support the biased assimilation process of interpretation as contributing to accumulation effects. Specifically, they showed that: (1) participants in the weak-similar social influence condition believed the evidence against the suspect was weaker ($M = 2.65$) than participants in the weak-no social influence condition ($M = 2.96$), $t(108) = 2.20, p = .030, d = .50$; (2) however, participants in the strong-similar social influence condition were not significantly more likely to believe the evidence against the suspect was stronger ($M = 3.49$) than participants in the strong-no social influence condition ($M = 3.07$), $t(108) = 1.36, p = .191, d = .36$.

Results of the regression analyses suggested that participants' beliefs about the strength of the evidence contributed to the accumulation effects observed. In the first step I regressed the dependent variables on the independent variable. These results are identical to those yielded earlier which indicated that condition predicted participants' impressions of the

suspect, $F(1, 110) = 22.54, p = .001, B = -.29$, and participants' beliefs about the suspect murdering the victim, $F(1, 106) = 12.88, p = .001, B = .37$. In the second step I regressed the potential mediator on the independent variable. Results showed that condition predicted participants' beliefs about the strength of the evidence, $F(1, 110) = 21.90, p < .001, B = .28$. In the third step the dependent variables were regressed on the potential mediator. These results indicated that participants' beliefs about the strength of the evidence predicted participants' impressions of the suspect, $F(1, 110) = 87.68, p < .001, B = -.69$ and their beliefs about the suspect murdering the victim, $F(1, 106) = 54.65, p < .001, B = .93$. In the final step the dependent variables were regressed on the independent variable and the potential mediator. As shown in Table 11, the results from these analyses indicated that the effect of condition on participants' impressions of the suspect remained significant with the inclusion of participants' beliefs about the strength of the evidence, $B = -.12, p = .029$ and the effect of condition on participants' beliefs about the suspect murdering the victim became non-significant with the inclusion of participants' beliefs about the strength of the evidence, $B = .12, p = .238$.

Overall, the results of these analyses indicate that participants had a tendency to interpret information as being consistent with their expectation. There was also evidence to suggest that this interpretative tendency contributed to the accumulation of perceptual bias effects.

Remembering. I performed one set of analyses to examine the hypothesis that participants would inaccurately remember information in a manner consistent with their expectation. A 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence

versus social influence) ANOVA was conducted in which participants' scores on the index of bias served as the dependent variable. Scores on this index could range from -5 to +5. More negative scores indicated participants misremembered information suggesting the suspect was not guilty, more positive scores indicated participants misremembered information suggesting the suspect was guilty, and scores close to zero indicated greater memory accuracy.

As shown in Table 12, results revealed neither a main effect of expectation, $F(1, 101) = 2.36, p = .128, \eta^2 = .02$, nor a main effect of social influence, $F(1, 101) = .62, p = .433, \eta^2 = .01$. However, there was a significant interaction between expectation and social influence, $F(1, 101) = 14.83, p = .008, \eta^2 = .07$. Even though there was not a main effect of expectation, contrasts and regression analyses were performed to examine the interaction pattern.

The results of two contrasts partially supported the hypothesis that biased assimilation process related to memory contributed to the accumulation effect. Contrasts indicated that: (1) participants in the weak-similar social influence condition did not have significant larger scores on the index of bias ($M = -.33$) than those in the weak-no social influence condition ($M = .22$), $t(101) = 1.38, p = .171, d = .38$ and (2) participants in the strong-similar social influence condition had larger scores on the index of bias ($M = .89$) than participants in the strong-no social influence condition, ($M = -.12$), $t(101) = 2.42, p = .017, d = .71$.

Results of the regression analyses suggested that memory was not mediating the accumulation effect. In the first step I regressed the dependent variables on the independent variable. These results are identical to those yielded earlier which indicated that condition predicted participants' impressions of the suspect, $F(1, 110) = 22.54, p = .001, B = -.29$, and

participants' beliefs about the suspect murdering the victim, $F(1, 106) = 12.88, p = .001, B = .37$. In the second step I regressed the potential mediator on the independent variable. Results showed that condition predicted participants' scores on the index of bias, $F(1, 103) = 3.99, p = .048, B = .28$. In the third step the dependent variables were regressed on the potential mediator. These results indicated that participants' scores on the index of bias predicted participants' impressions of the suspect, $F(1, 103) = 10.04, p = .002, B = -.15$ and their beliefs about the suspect murdering the victim, $F(1, 103) = 12.91, p = .001, B = .26$. In the final step the dependent variables were regressed on the independent variable and the potential mediator. As shown in Table 11, the results from these analyses indicated that the effect of condition on participants' impressions of the suspect, $B = -.29, p < .001$, and on their beliefs about the suspect murdering the victim, $B = .30, p = .003$, remained significant with the inclusion of participants' scores on the index of bias.

These analyses show that, across conditions, most participants' scores were close to zero. This suggests that participants' memories about the case were largely accurate because they correctly identified the facts of the case. Although the scores on the index of bias indicated that those in the strong-similar were the most inaccurate and that these participants were inaccurate in the direction of their expectation, regression analyses did not suggest that this process contributed to the accumulation of perceptual bias effects observed in these data.

Certainty. Two sets of analyses were conducted regarding certainty. The first examined the hypothesis that participants' would be more confident in their beliefs about the suspect's guilt when socially influenced than when not socially influenced. These analyses

focused on participants' confidence in their assessment of the suspect's guilt and their confidence that suspect was the true culprit.

First, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' confidence in their assessment of the suspect's guilt served as the dependent variable. As shown in Table 14, results indicated that neither the main effects nor an interaction between expectation and social influence were significant, $F_s(1, 108) \leq 1.28$, $p_s \geq .260$, $\eta^2_s \leq .01$.

Second, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' confidence that the suspect was the culprit served as the dependent variable. As shown in Table 14, results indicated that participants were more confident that the suspect was the culprit when given a strong expectation ($M = 3.74$) than when given a weak expectation ($M = 3.16$), $F(1, 104) = 7.50$, $p = .007$, $\eta^2 = .07$. There was no main effect of social influence, $F(1, 104) = .45$, $p = .502$, $\eta^2 < .01$, nor an interaction between expectation and social influence, $F(1, 104) = 3.03$, $p = .085$, $\eta^2 = .03$. However, means were in the expected direction ($M_s = 3.05_{\text{weak-similar social influence}}$, $3.27_{\text{weak-no social influence}}$, $3.49_{\text{strong-no social influence}}$, $4.00_{\text{strong-similar social influence}}$). Thus, results indicate that social influence manipulation did not influence participants' reported confidence.

Perceived consensus. Two sets of analyses were conducted to examine the hypothesis that perceived consensus would moderate the relationship between expectation and social influence on participants' evaluations of the suspect's guilt. In order to examine this hypothesis, participants in the dissimilar social influence conditions are included in the

following analyses. These analyses focused on participants' impressions of the suspect and participants' beliefs about the suspect murdering the victim.

First, a 2 (Expectation: weak versus strong) x 3 (Social influence: no social influence versus dissimilar-social influence versus similar-social influence) ANOVA was conducted in which participants' impressions of the suspect served as the dependent variable. As shown in Table 15, results revealed a significant main effect of expectation, $F(1, 134) = 13.95, p < .001, \eta^2 = .09$. Participants given a weak expectation had more positive impressions of the suspect ($M = 3.77$) than participants given a strong expectation ($M = 3.33$). There was no main effect of social influence, $F(2, 134) = .27, p = .767$. However, there was a significant interaction between expectation and social influence, $F(2, 134) = 4.10, p = .019$.

Figure 8 presents participants' mean impressions of the suspect by expectation and social influence. This figure shows that (1) participants in the weak-no social influence condition did not have more positive impressions of the suspect ($M = 3.68$) compared to those in the strong-no social influence condition ($M = 3.44$), $t(67) = 1.46, p = .148, d = .35$, (2) participants in the weak-dissimilar social influence condition did not have more positive impressions of the suspect ($M = 3.58$) compared to those in the strong-dissimilar social influence condition ($M = 3.34$), $t(26) = .80, p = .430, d = .30$, and (3) participants in the weak-similar social influence condition had more positive impressions of the suspect ($M = 4.06$) compared to those in the strong-no social influence condition ($M = 3.15$), $t(41) = 4.57, p < .001, d = 1.40$.

Second, a 2 (Expectation: weak versus strong) x 3 (Social influence: no social influence versus dissimilar-social influence versus similar-social influence) ANOVA was conducted in which participants' beliefs about the suspect murdering the victim served as the

dependent variable. As shown in Table 12, results revealed neither a significant main effect of expectation, $F(1, 131) = 1.04, p = .310, \eta^2 = .01$, nor a significant main effect of social influence, $F(2, 131) = .44, p = .648$. However, there was a significant interaction between expectation and social influence, $F(2, 131) = 8.42, p < .001$.

Figure 9 presents participants' beliefs about the suspect murdering the victim by expectation and social influence. This figure shows that (1) participants in the strong no-social influence condition were not more likely to believe the suspect murdered the victim ($M = 3.46$) compared to those in the weak-no social influence condition ($M = 3.42$), $t(66) = .124, p = .902, d = .04$, and (2) participants in the strong-dissimilar social influence condition were not more likely to believe the suspect murdered the victim ($M = 2.88$) compared to those in the weak-no social influence condition ($M = 3.62$), $t(27) = 1.91, p = .066, d = .72$; however, (3) participants in the strong-dissimilar social influence condition were more likely to believe the suspect murdered the victim ($M = 4.11$) compared to those in the weak-no social influence condition ($M = 2.82$), $t(38) = 4.12, p < .001, d = 1.31$.

A follow-up analysis was conducted to explore differences between those with perceived similarity and dissimilarity with a purported other's beliefs. A 2 (Expectation: weak versus strong) x 2 (Perceived similarity: similar versus dissimilar) ANOVA was conducted among participants in the social influence conditions. Participants' agreement with the following statement served as the dependent variable "The other participant made a convincing argument." Results revealed a main effect of perceived similarity, $F(1, 61) = 7.78, p = .007, \eta^2 = .11$. Participants with similar opinions believed the bogus participant's statement was more convincing ($M = 3.64$) than those with dissimilar opinions ($M = 2.83$). Results indicated neither a significant main effect of expectation, $F(1, 61) = 2.39, p = .127$,

$\eta^2 = .03$, nor an interaction between similarity and expectation, $F(1, 61) = 1.47, p = .230, \eta^2 = .02$. Consistent with a bias assimilation process, these findings suggest that perceived consensus can also influence the interpretation of information.

Results strongly suggest that perceived consensus was contributing to the accumulation pattern. That is, accumulation patterns were observed only among those participants that perceived their beliefs as being similar to the bogus participant's. In addition, perceived consensus influenced participants' ratings of how convincing they believed the bogus participant's statement was.

Discussion

The primary goals of Experiment 1 were to (1) determine if perceptual bias effects accumulate across perceivers in a situation in which explicit information about another's impressions of a target is learned prior to developing one's strategies for interacting with a target, and (2) examine whether biased assimilation and consensus processes would contribute to any observed accumulation effect. These goals were addressed by conducting an experiment that manipulated participants' expectations about a suspect's guilt and whether or not they were exposed to another perceiver's beliefs about the suspect. The opportunity for accumulation was only possible for perceivers who were exposed to another perceiver's beliefs. Results indicated that cumulative perceptual bias effects occurred only when perceived consensus was taken into consideration and that several of the proposed processes were operating. In the following sections, I elaborate on the findings observed in this experiment.

Accumulation of Perceptual Bias Effects

This research examined the hypothesis that perceptual bias effects can accumulate across perceivers such that the combined effect of multiple perceivers is larger than the effect of any individual perceiver. Results obtained using the full sample did not indicate that accumulation was occurring. On a theoretical level, the potential for perceptual bias effects to accumulate across perceivers only exists when perceivers share similar beliefs about the target. Thus, the data were reanalyzed using a partial sample of participants who identified themselves as having similar beliefs about the suspect's guilt. Analyses based on these participants were consistent with an accumulation hypothesis. Participants who perceived their own beliefs about a suspect's guilt as being similar to the beliefs of another person developed more extreme impressions about the suspect than participants who were not exposed to another's beliefs. For example, participants who had a weak expectation about the suspect's guilt and received information that another participant believed the suspect was not guilty had more positive impressions of the suspect and were less likely to believe the suspect was guilty than participants who had a weak expectation about the suspect's guilt, but did not receive any information about another participant's beliefs. Similarly, participants who had strong expectations about the suspect's guilt and received information that another participant believed the suspect was guilty had more negative impressions of the suspect and were more likely to believe the suspect was guilty than participants who had a strong expectation about the suspect's guilt, but did not receive any information about another participant's beliefs.

These results suggest that perceptual biases can accumulate in situations that are characterized by limited contact between perceivers and no contact between perceiver and

target. Participants received information about a purported other's beliefs through a written statement. Interestingly, neither of the two statements made reference to any specific evidence indicating why the person believed the suspect was not guilty versus guilty. The only difference between the two statements was the belief of the suspect's guilt. However, for those participants who perceived similarity in the beliefs specified in the statement, it was enough to substantially alter their perceptions of the suspect. For example, among participants given no information about another's beliefs, 66% of participants given a weak expectation and 70% of participants given a strong expectation believed the suspect was guilty. However, when participants perceived similarity with another's beliefs those percentages changed, such that now 33% of the participants given a weak expectation and 83% of participants given a strong expectation believed the suspect was guilty. These findings suggest that perceptual bias effects were accumulating.

Mechanisms Underlying the Accumulation of Perceptual Bias Effects

Previous research has indicated that people engage in biased assimilation processes including the tendency to seek, interpret, and remember information consistently with their expectations (e.g., Olson et al., 1996; Nickerson, 1998). I hypothesized that these tendencies would occur to a greater extent when participants had similar expectations. Results provided support for the tendency to interpret and remember information in a manner consistent with one's expectation, but did not for the tendency to seek information in a manner consistent with one's expectation. In addition, I hypothesized that perceived consensus would contribute to the accumulation of perceptual bias effects through changes in participants' confidence. Results yielded no support for the idea that perceived consensus increases

confidence, but did suggest that perceived consensus does contribute to accumulation effects. In the following sections, I elaborate on these findings.

Seeking. Overall, results from this experiment suggested that participants did not preferentially seek information consistent with their expectations. Participants were given a list of accusatory and non-accusatory techniques and asked to select those they would use if given a chance to interview/interrogate the suspect. There were no differences in the type of techniques participants' selected based on their expectation or whether they perceived similarity with the purported other's statement. Participants were also given a list of accusatory and non-accusatory questions and statements and asked to make selections. Although participants given a strong expectation selected more accusatory questions and statements than those given a weak expectation, this effect was not stronger among those perceiving similarity with the purported other's statement. Thus, this process does not account for the accumulation effect observed in these data.

Interpreting. Results, did, however, provide some support for the hypothesis that people interpret information consistently with their expectations and that this tendency contributed to cumulative perceptual bias effects. Participants were given a fabricated summary of an interview/interrogation with the suspect. This summary included vague information about the suspect and descriptions of ambiguous behaviors demonstrated by the suspect. Participants indicated their impressions of the suspect, their beliefs about the suspect's truthfulness, and their beliefs about the strength of the evidence. Results indicated that there were no differences in participants' impressions of the suspect's behavior described in the summary based on condition. However, consistent with the idea that interpretational biases contribute to perceptual bias effects, participants given a strong expectation believed

the suspect was being less truthful and that the strength of the evidence was stronger than participants given a weak expectation. Furthermore, in regards to the question of truthfulness, this tendency was demonstrated more in those who perceived similarity with the purported other's statement. Therefore, these results suggest that interpretation of information could have been contributing to the accumulation pattern observed to some extent.

Remembering. Results indicated that there was some evidence to indicate that the tendency for people to remember information consistently with their expectation played a role in the accumulation of perceptual bias effects. Participants were given a list of statements that contained accurate and inaccurate facts of the case. Participants were asked to indicate whether each statement was false, true, or if they were unsure. Results showed that participants were generally accurate in their responses. However, results also indicated that those participants who were given a strong expectation and who perceived similarity with a purported other's beliefs misremembered the most information. Furthermore, they misremembered information in a direction that was consistent with their expectation. However, regression analyses testing for mediation did not suggest that memory was significantly contributing to the accumulation effect observed.

Consensus. Overall, results were consistent with the proposition that perceived consensus was contributing to the accumulation of perceptual bias effects. I examined whether participants' perceptions regarding the similarity between their own beliefs and the purported other's beliefs would influence their confidence, their impressions, and their beliefs about the suspect's guilt.

First, I hypothesized that participants who believed that their own beliefs about the suspect's guilt were similar to another's beliefs would be more confident in their assessment

of the case and in their beliefs about the suspect being the true culprit relative to participants who did not receive information about another person's beliefs. There was no evidence to support this hypothesis in regards to participants' confidence in their assessment of the case. However, results indicated that participants who perceived similarity between their beliefs and those of a purported other were somewhat, but not significantly, more confident the suspect was the culprit than participants who were given no information about other's beliefs.

Second, I hypothesized that perceived consensus would moderate the relationship between expectation and social influence on participants' impressions of the suspect and of the suspect's guilt. Results were consistent with that proposition. Accumulation findings were only observed among participants who indicated that they perceived similarity with the purported other's beliefs. When participants perceived dissimilarity in their beliefs, no accumulation was observed. These results strongly suggest that perceived consensus was an important determinant in the accumulation process. Additionally, a follow-up analysis revealed that participants who perceived similarity rated the arguments by the purported other as being more convincing than those who perceived dissimilarity. This finding indicates that perceived consensus may lead to the occurrence of biased assimilation processes.

Exploring Perceptions of Similarity

As previously stated, accumulation of perceptual bias effects only occurred after identifying a subset of participants who believed they had similar beliefs to another person. Conceptually, focusing on this subset this makes sense because perceivers must perceive similarity in order for accumulation to occur. However, because in this research participants self-selected themselves into these new categories (i.e., perceived similarity or perceived

dissimilarity) it is possible that some other variable could be responsible for differences observed between the conditions.

One possibility is that participants who perceived similarity in the social influence conditions may have held stronger beliefs than those who perceived dissimilarity in the social influence conditions. If this happened, then the participants who perceived similarity simply held more extreme beliefs at the outset than those who perceived dissimilarity. To examine this possibility, I identified participants in the no social influence conditions who were more confident in their assessment of the suspect's guilt and then compared their perceptions of the suspect to those in the similar-social influence conditions. By identifying these participants, the comparison between the two groups is more equivalent at least in terms of the strength of their beliefs.

Results indicated that there was not a significant difference between confident weak-no social influence participants' impressions of the suspect ($M = 3.64$) and their beliefs about the suspect murdering the victim ($M = 3.83$) compared to participants in the weak-similar social influence condition ($M_s = 3.89, 3.11$), $t(47) = 1.16, p = .251$; $t(45) = 1.91, p = .063$. A similar pattern was found among those given a weak expectation. There was not a significant difference between confident strong-no social influence participants' impressions of the suspect ($M = 3.24$) and their beliefs about the suspect murdering the victim ($M = 3.83$) compared to participants in the strong-similar social influence condition ($M_s = 3.26, 3.53$), $t(44) = .10, p = .920$; $t(44) = .79, p = .435$. These results do not support the proposition that participants were self-selecting themselves into the similar-social influence conditions on the basis of their confidence.

Although the experiment was designed so that participants would be exposed to beliefs from another person that was similar to their own, as mentioned early, not all participants perceived similarity. Approximately 40% of the participants that received the bogus participant's statement did not perceive similarity in beliefs. The fact that perceived dissimilarity occurred fairly equally among the weak and strong expectation conditions suggests that it was probably not something about the case that was causing differences in perceived similarity, but rather something about participants' previous experiences or personality factors. Therefore, I drew on additional questions within the dataset to examine whether any other variables could explain why some participants perceived similarity and others did not.

These exploratory analyses only revealed one significant effect. An independent t-test indicated that male participants were more likely to perceive similarity with the bogus participant's statement ($M = 3.97$) than females ($M = 3.08$), $t(63) = 2.54$, $p = .014$. Therefore, I conducted a follow-up ANOVA to determine if gender was interacting with either expectation or social influence or both to influence participants' impressions or their beliefs about the suspect murdering the victim. Results indicated no main effect of gender, nor any interaction effects with gender, (see Table 16 for statistical information), thereby suggesting that any effect of gender was occurring equally across conditions.

A third possibility is that participants in the similar social influence conditions may have been more susceptible to the social influence manipulation than participants in the dissimilar social influence conditions. Perhaps only those who were more easily influenced perceived similarity and that this susceptibility was moderating the accumulation effect.

Although results did indicate that those who perceived similarity believed the written

statement contained more convincing arguments than those who perceived dissimilarity, no data on susceptibility was specifically collected in this experiment. Additional research should examine whether some perceivers are more susceptible to the influence of other's beliefs making it more likely for perceptual bias effects to accumulate across people.

This research indicated that perceived consensus was an important factor in participants' judgments. Future research should further explore the role that perceived consensus plays in the accumulation of perceptual bias effects, the relationship between perceived consensus and susceptibility to being socially influenced, and the development of perceived consensus.

Chapter 9: Experiment 2: Accumulation through Social Interaction

Overview

This experiment had two objectives. Its first objective was to determine if perceptual bias effects accumulate across perceivers in a situation in which perceivers discuss their strategies for interacting with the target (see Figure 3). In Experiment 1, a statement explicitly communicated a bogus participant's impressions of the target before perceivers selected strategies for interacting with the target. In contrast, some perceivers in this experiment were allowed to communicate with each other while they selected strategies for interacting with a hypothetical target. Thus, this experiment differs from the first in terms of how impressions were communicated (i.e., explicit statement from bogus participant versus face-to-face interaction with real participant) and when the impressions were communicated (i.e., before or during the selection of strategies). This experiment is more similar to the previous investigation of cumulative perceptual bias effects than Experiment 1 because perceivers have an opportunity to interact with one another (Willard et al., 2008). However, this experiment also differs from that investigation by allowing perceivers to select strategies together and by preventing them from interacting with a target.

Its second objective was to examine the extent to which biased assimilation processes and consensus contributed to any observed accumulation effects. Because this experiment was designed to be somewhat similar to the previous investigation of accumulation (Willard et al., 2008), any evidence that these processes contributed to cumulative perceptual bias effects may more readily answer questions raised in that investigation.

To address these objectives, I manipulated participants' expectations about a suspect's guilt and social influence. Participants' expectations were manipulated using the

same procedures as those in Experiment 1. Participants either received either a weak case which suggested that there was an alternative suspect who may have committed the crime, or a strong case which suggested that the suspect had a motive for committing the crime. Social influence, by contrast, was manipulated in a manner that differed from the manner in which it was manipulated in Experiment 1. Here, rather than manipulating social influence with a statement ostensibly written by another participant, social influence was manipulated via real social interaction between two actual participants who were induced with either similar or dissimilar expectations about the suspect's guilt. When participants were induced with similar expectations, both received either the weak case or the strong case. When participants were induced with dissimilar expectations, one received the weak case and the other received the strong case. Experiment 2 also included two control conditions in which participants, working alone, received either the weak or strong case. All participants selected strategies for hypothetically interviewing/interrogating the suspect. However, whereas participants in the social influence conditions worked in pairs to select their strategies, participants in the two control conditions worked alone.

Consistent with an accumulation process, I hypothesized that participants who worked in pairs and who had been induced with similar expectations would have beliefs and impressions that were more in line with their expectations than participants who worked in pairs but who had been induced with dissimilar expectations and participants who worked alone. Furthermore, it was hypothesized that participants who worked in pairs and who had been induced with similar expectations would engage in more biased assimilation processes than pairs who had been induced with dissimilar expectations and participants who worked

alone. Lastly, factors related to consensus were expected to contribute to accumulation findings.

Methods

Participants

Two-hundred and eleven participants were recruited from the Psychology Department's Research Participation Pool at Iowa State University. The sample included 102 males and 109 females. The mean age of participants was 20 and approximately 88% of the sample identified themselves as Caucasian. In exchange for their participation, students earned credit in their psychology courses.

Design

The design of this study was atypical because the independent variables were not fully crossed. In this experiment, participants' expectations (i.e., weak versus strong), the level of social influence received (i.e., no social influence versus social influence), and the similarity of participants' expectations within the social influence conditions were manipulated (i.e., similar versus dissimilar). Thus, participants were assigned to 1 of the following 5 conditions: weak-no social influence ($n = 23$), strong-no social influence ($n = 26$), weak-social influence ($n = 24_{\text{pairs}}$), mixed-social influence ($n = 24_{\text{pairs}}$), and strong-social influence ($n = 25_{\text{pairs}}$).

All participants were assigned to receive either a weak or a strong expectation about the suspect's guilt and were assigned to receive no social influence or a social influence. In the no social influence conditions, individual participants were randomly assigned to one of two expectation conditions: weak or strong. The condition in which participants received a weak expectation and no social influence is subsequently referred to as the weak-no social

influence condition. The condition in which participants received a strong expectation and no social influence is subsequently referred to as the strong-no social influence condition. As noted previously, these two conditions served as control conditions.

In the social influence conditions, pairs of participants were randomly assigned to one of three expectation-similarity conditions: weak-social influence, mixed-social influence, and strong-social influence. In the weak-social influence condition, both participants received weak expectations. In the mixed-social influence condition, one participant received a weak expectation whereas the other received a strong expectation. In the strong-social influence condition, both participants received strong expectations. Thus, in the social influence conditions both participants' expectations about the suspect (i.e., weak versus strong) and the similarity of their expectations (i.e., similar versus dissimilar) were manipulated.

Materials

Manipulating expectations. The case information discussed in Preliminary Study 1 and in Experiment 1 was used to manipulate participants' expectations in this experiment (Appendix A). Participants in the weak expectation conditions received a case that suggested that there was an alternative suspect in the case, whereas participants in the strong expectation conditions received a case that indicated the suspect had a motive for committing the crime.

Interrogation summary. The same interview/interrogation summary with the suspect used in Experiment 1 was provided in order to examine whether participants would engage the biased assimilation process of interpreting ambiguous information in a manner consistent with one's expectation (Appendix J).

Participants' Impressions and Mechanisms Related to Accumulation

Several items were used as manipulation checks to measure participants' impressions of the suspect and the suspect's guilt, and to measure biased assimilation and consensus processes. Except where noted, participants' responses were averaged across pairs in the social influence conditions.

Manipulation check. All of the manipulation check items were assessed before participants in the social influence condition worked in pairs; thus, participants completed these items independently and participants' responses were not averaged across pairs in the social influence conditions. Two items assessed participants' recognition of key information that distinguished the weak from the strong case. Participants were given two statements, "Eva had a motive for the crime" and "The victim received phone calls in which a man threatened her" (Appendix K). Participants responded to these statements by selecting true, unsure, or false.

Two items measured whether the two cases influenced participants' expectations of the suspect's likelihood of lying and their opinions about the plausibility of the suspect's story (Appendix F). Participants rated their agreement with the following two statements "During an interview with Eva, I would expect her to lie." and "I think that Eva's account of the event is plausible." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Nine items measured participants' impressions of the suspect (Appendix F). Participants rated the extent to which they believed the suspect was intelligent, honest, moral, upset, truthful, calculating, unstable, warm, and a typical criminal. Participants rated their agreement with these adjectives describing the suspect on a six point scale with anchors 1

(*strongly disagree*) and 6 (*strongly agree*). An impression of the suspect was created by averaging the following six items: intelligent, honest, moral, truthful, warm, and typical criminal, the latter of which was reverse coded. High scores indicated a more positive impression of the suspect, $\alpha = .81$.

Participants' beliefs about the suspect's guilt. Participants' beliefs about the suspect's guilt were measured with two items (Appendix K). First, participants rated their agreement with the statement "Eva murdered the victim." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Second, participants circled either not guilty or guilty in response to the item "I believe Eva is...".

Participants' selection strategies. The four measures were used to assess the extent to which participants sought information consistent with their expectations. These were identical to those presented in Experiment 1 (Appendix H). First, participants were given 16 interview/interrogation techniques and selected five that they would use during an interrogation with the suspect. Higher scores indicated that a greater number of accusatory techniques were selected.

Second, participants were given 22 interview/interrogation questions and statements (see Table 2 or Appendix I) and selected eight that they would use during an interrogation with the suspect. High scores indicated that a greater number of accusatory questions or statements were selected.

The third measure consisted of the same 22 interview/interrogation questions and statements. Two variables were created that indicated the average aggressiveness or guilt-presumptiveness of questions and statements selected by participants. Scores could range

from one to four with higher scores indicating that participants selected questions or statements with a greater degree of aggressiveness or guilt-presumptiveness.

The fourth set of measures included two items that assessed participants' goals and how much effort they exerted when selecting the techniques: "I selected techniques with the primary goal of getting the suspect to confess" and "I put a lot of thought into the interview/interrogation strategies that I selected." Participants rated their agreement with these statements on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' interpretations. Four sets of items assessed the extent to which participants interpreted the case and the suspects' behavior as described in the interview/interrogation summary as being consistent with their expectations (Appendix K). One set reflected an interpretation of the suspect's behavior during the interview/interrogation (i.e., the summary). This was assessed with five items embedded among four other items. Participants rated the extent to which they believed the suspect was defensive, honest, friendly, truthful, and warm during the interview/interrogation on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Participants' responses were reverse coded as necessary and the five items were averaged. High scores indicated a more positive interpretation of the suspect's behavior, $\alpha = .71$.

The second set of items measured participants' beliefs about the truthfulness of the suspect: "Based on Eva's behavior as described in the summary, I think she is telling the truth." and "Eva's denials were very convincing." Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' responses to these two items were averaged, $r = .65$, $p < .001$. High scores indicated greater belief in the suspect's truthfulness.

The third set of items measured participants' perceptions of the strength of the evidence: a) "It is likely at this point that I would continue investigating the crime in order to look for alternative suspects."; b) "I believe there is enough evidence to arrest Eva for committing the crime."; and c) "The evidence against Eva is very persuasive." Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*). Responses to the first item were reversed coded and then responses to the three items were averaged. Higher scores indicate stronger beliefs about the strength of the evidence against the suspect, $\alpha = .57$.

The fourth item measured participants' perceptions about the consistency between their expectations and the behavior displayed by the suspect in the interview/interrogation summary. Participants rated their agreement with the statement "Eva behaved as I expected during the interview/interrogation (i.e., summary)." on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Participants' memory. A list of 11 statements measured bias in participants' memory (Appendix K). Identical to the procedures described in Experiment 1, seven of the items were used to create an index of bias that ranged from -5 to +5. Negative scores indicated a bias to misremember information that suggested the suspect was not guilty, positive scores indicated a bias to misremember information that suggested the suspect was guilty, and scores closer to zero indicated a more accurate memory.

Certainty. Two items measured participants' certainty through confidence (Appendix K). Identical to the measures presented in Experiment 1, participants' confidence was

assessed with the following two items: “I am confident in my assessment of Eva’s guilt” and “I am confident that Eva is the true culprit in this crime.” Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) and 6 (*strongly agree*).

Perceived consensus. Perceived consensus was measured only in the social influence conditions (Appendix K). One question assessed the degree to which participants perceived that their partner held a similar expectation about the suspect as they themselves did, referred to as perceived consensus. Participants answered the following question: “The other participant and I have similar opinions about the case.” Participants also answered another other item related to consensus but used for exploratory purposes: “The other participant made a convincing argument.” Participants indicated their agreement with these items on a six point scale with anchors 1 (*strongly disagree*) to 6 (*strongly agree*).

Procedures

Participants were first assigned to the no social influence or the social influence condition based on the number of people that showed up for a given session. If three participants showed up, then two of the participants were randomly assigned to participate as a pair (social influence conditions) and the other as an individual (no social influence conditions). If two participants showed up, then both were assigned to participate as a pair (social influence conditions). If only one participant showed up, then he or she was assigned to work alone (no social influence conditions).

After consenting to participate, participants were told that they would be evaluating a real criminal case from the perspective of an investigator. Participants’ expectations about the suspect’s guilt were manipulated by having them to read either the weak or strong

versions of the case (Appendix A). The cases were provided to participants in folders and thus, experimenters were blind to expectation condition until the completion of the study. Participants read their cases independently and then completed a questionnaire that asked about their initial impressions of the suspect (Appendix F).

Next, participants received the list of interview/interrogation techniques and the list of interview/interrogation questions and statements (Appendices H and I). All participants were instructed to select five techniques and eight questions and statements they would use if given the opportunity to talk to the suspect. Participants were instructed to select techniques, questions, and statements that would help them uncover the truth and, if they believed the suspect was guilty, to get the suspect to confess. Participants in the no social influence conditions did this task alone. In contrast, participants in the social influence conditions made their selections together in private. After making their selections, participants were instructed to complete the rest of the experiment independently. Specifically, following the same procedures used in Experiment 1, participants were given the interview/interrogation summary and questionnaires that assessed the following: their impressions of the suspect's guilt, interpretation of information, memory of evidence, certainty, consensus (Appendix K), demographic information (Appendix C), and suspicion (Appendix D). Finally, participants were debriefed and thanked for their participation.

Results

Preliminary Analyses

Expectation manipulation. Two sets of analyses were conducted to determine if the weak and strong cases influenced participants' expectations about the suspect's guilt in the manner intended. First, two frequency analyses were conducted to examine whether

participants were aware of the key information that served to manipulate their expectations. Participants who received the weak case were exposed to information stating that the victim had received threatening phone calls from another person, thereby suggesting that there was an alternative suspect in the case. If participants who received the weak case indicated that this was a false statement, then their response was incorrect ($n = 4$). Participants who received the strong case were exposed to information stating the victim had a motive for committing the crime. If participants who received the strong case indicated that this was a false statement, then their response was incorrect ($n = 4$). Eight participants responded incorrectly to one of these items. All eight of these participants were in a social influence condition and from different pairs. These eight pairs were excluded from all subsequent analyses: two pairs from the weak-social influence condition, four pairs from the mixed-social influence condition, and two pairs from the strong-social influence condition. Thus, the final data sample included the following: 23 participants in the weak-no social influence condition, 26 participants in the strong-no social influence condition, 24 pairs in the weak-social influence condition, 24 pairs in the mixed-social influence condition, and 25 pairs in the strong-social influence condition. The final sample breakdown, including gender information, is presented in Table 17.

Second, three analyses were conducted to examine whether the two cases induced different expectations about the suspect. I hypothesized that participants who received a strong expectation would be less likely to believe the suspect's story was plausible, would be more likely to believe the suspect is lying, and would have less positive impressions about the suspect compared to participants who received a weak expectation. Additionally, I hypothesized, that because these measures were taken before participants in the social

influence conditions worked as pairs, there would be no difference between participants' responses based on social influence.

First, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' ratings of the plausibility of the suspect's story served as the dependent variable. As shown in Table 18, participants given the strong expectation believed the suspect's story was less plausible ($M = 3.04$) than those given the weak expectation ($M = 3.59$), $F(1, 199) = 9.77, p = .002, \eta^2 = .04$. There was neither a main effect of social influence, $F(1, 199) = 2.10, p = .149, \eta^2 < .01$, nor an interaction between expectation and social influence, $F(1, 199) = .54, p = .484, \eta^2 < .01$.

Second, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' expectations about the suspect lying during an interview/interrogation served as the dependent variable. As shown in Table 18, participants given the strong expectation were more likely to expect the suspect to lie ($M = 4.26$) than those given the weak expectation ($M = 3.83$), $F(1, 199) = 7.06, p = .009, \eta^2 = .03$. There was neither a main effect of social influence, $F(1, 199) = 3.15, p = .08, \eta^2 = .02$, nor an interaction between expectation and social influence, $F(1, 199) = .24, p = .626, \eta^2 < .01$.

Third, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' impressions of the suspect served as the dependent variable. As shown in Table 18, participants given the strong expectation had less positive impressions of the suspect ($M = 3.22$) than those given the weak expectation ($M = 3.60$), $F(1, 198) = 10.07, p = .002, \eta^2 = .05$. There was neither a main

effect of social influence, $F(1, 198) = .41, p = .525, \eta^2 < .01$, nor an interaction between expectation and social influence, $F(1, 198) = .70, p = .405, \eta^2 < .01$.

These results indicate that the case influenced participants' expectations and impressions of the suspect's guilt in the intended manner. Furthermore, these results also indicate that expectation influenced participants' responses equally among those in the no social influence and social influence conditions.

Descriptive information. Correlations, means, and standard deviations for the primary measures are presented in Table 19 for participants in the no social influence conditions and in Table 20 for pairs of participants in the social influence conditions.

Primary Analyses

Identifying perceived similarity. As specified in Experiment 1, in order for accumulation to occur, participants must believe that someone else's beliefs about a given target are similar to their own beliefs about the target. Therefore, using the same procedures as outlined in the first experiment, I identified which participants assigned to the social influence conditions believed that their beliefs about the suspect's guilt was similar to their partner's beliefs. In addition, because responses were averaged across participants in the social influence conditions, I identified pairs in which both participants believed they had dissimilar beliefs, pairs in which one participant believed they had similar and the other believed they had dissimilar beliefs, and pairs in which both participants believed they had similar beliefs. Table 21, presents the frequencies of pairs in each of the social influence conditions fitting these categories. Consistent with the procedures in Experiment 1, I conducted analyses excluding pairs in which one or both participants believed they held dissimilar beliefs. However, because there were very few participants who perceived their

partner to have dissimilar beliefs relative to themselves ($n = 9$) and because the pattern of results remained the same regardless of whether analyses excluded or included these pairs, no participants were excluded from the analysis on this basis. Thus, the subsequent analyses do not take into consideration perceived similarity.

Accumulation of perceptual bias effects. Two sets of analyses were conducted to examine the hypothesis that perceptual bias effects accumulate across perceivers. One set focused on participants' beliefs about the suspect murdering the victim and the other set focused on participants' dichotomous ratings of the suspect's guilt.

In the first set of analyses, a one-way ANOVA was conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable. Participants' agreement with an item stating "Eva murdered the victim" served as the dependent variable. Results would be consistent with an accumulation pattern if there was an effect of expectation, such that responses of participants in the weak- or strong-social influence conditions were more in line with their expectations than participants in the mixed-social influence condition. Results indicated a significant difference among the social influence conditions, $F(2, 69) = 4.28, p < .018$. Contrasts revealed that participants in the weak-social influence condition were less likely to believe the suspect murdered the victim ($M = 3.38$) compared to participants in the mixed-social influence condition ($M = 3.89$) and participants in the strong-social influence condition ($M = 3.92$), $t_s(69) \leq 2.44, p \leq .017, d_s \leq .71$. This analysis suggests that accumulation may be occurring within the weak-social influence condition. Follow-up analyses which included the no social influence conditions were conducted to examine this interpretation.

These follow-up analyses were conducted using procedures similar to those used to test for accumulation in Experiment 1. Expectation (i.e., weak versus strong) and social influence (i.e., no social influence versus social influence) served as the independent variables. In order for accumulation to occur, results should indicate a main effect of expectation, such that those in the strong conditions have greater beliefs about the suspect's guilt than those in the weak conditions. Results should also indicate an interaction effect between expectation and social influence. These analyses excluded the mixed-social influence condition because this condition represents one in which participants were initially induced dissimilar expectations.

A 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted to examine participants' beliefs about whether the suspect murdered the victim. The dependent variable is at the group level for the social influence conditions (i.e., participants responses averaged across pairs) and at the individual level for the no social influence conditions. Results indicated a significant main effect of expectation, $F(1, 91) = 16.92, p < .001, \eta^2 = .15$. Participants given a strong expectation were more likely to believe the suspect murdered the victim ($M = 4.06$) than participants given a weak expectation ($M = 3.28$). However, there was neither a main effect of social influence, $F(1, 91) = .06, p = .804, \eta^2 < .01$, nor an interaction between expectation and social influence, $F(1, 91) = 1.59, p = .211, \eta^2 = .01$. This finding does not support the interpretation that accumulation was occurring within the weak-social influence condition. Indeed, examination of the means indicates that participants in the weak-social influence condition were not less likely to believe the suspect murdered the victim ($M = 3.38$) than participants in the weak-no social influence condition ($M = 3.18$).

In the second set of analyses, I tested the accumulation hypothesis with two chi-square analyses in which participants' responses to the dichotomous question pertaining to the suspect's guilt (i.e., not guilty versus guilty) served as the dependent variable. First, I examined the pattern among participants in the social influence conditions. I created a new variable that averaged across participants' ratings of guilt in the social influence conditions. This variable indicates guilt and agreement between participants' responses within pairs. Table 22 shows the percentage of participants in each of the social influence conditions in which both participants indicated the suspect was not guilty, one participant indicated the suspect was not guilty and the other indicated the suspect was guilty, and both participants indicated the suspect was guilty. The percentage of pairs in which both participants indicated the suspect was guilty was greatest in the strong-social influence condition (71%), slightly lower in the mixed-social influence condition (70%), and lowest in the weak-social influence condition (38%), $\chi^2(71) = 10.77, p = .029, \phi = .39$. These results suggest that accumulation may be occurring within the weak-social influence condition. Follow-up analyses were conducted to examine this interpretation.

A follow-up second chi-square analysis was conducted among those in the no social influence conditions in which expectation served as the independent variable and participants' responses to the question of guilt served as the dependent variable. As shown in Table 22, more participants in the strong-no social influence condition indicated the suspect was guilty (81%) than those in the weak-no social influence condition (48%), $\chi^2(49) = 5.85, p = .016, \phi = .35$. Examination of the percentages across the two analyses suggests that accumulation was not occurring because participants' responses in the strong-social influence conditions were not more extreme than participants' responses in the strong-no social influence

conditions. Although it would be useful to compare participants' responses between the weak-no social and the weak-social influence conditions, because the dependent variable is slightly different across the two conditions (i.e., three categories for the social influence conditions and only two for the no social influence conditions) the interpretation of such a comparison is questionable.

Overall, the pattern of data across each of the analyses does not suggest that perceptual bias effects were accumulating across participants. Although expectations did influence participants' responses, they did not appear to influence responses to a greater extent in conditions in which there were two participants versus one.

Mechanisms underlying the cumulative effects of perceptual biases. The lack of cumulative perceptual bias effects suggests that neither biased assimilation nor consensus processes should receive support as underlying mechanisms. Analyses were performed to confirm that proposition. Analyses focused on the three biased assimilation processes of seeking, interpreting, and recalling information consistent with one's hypothesis. Similar to the procedures outlined earlier to test for accumulation, I first examined differences in participants' responses among the social influence conditions. I next examined the effect of expectation and social influence by conducting analyses that included the no social influence conditions and excluded the mixed-social influence condition. Because there appeared to be no evidence indicating that perceptual bias effects were accumulating across perceivers, I did not expect to find a significant interaction between expectation and social influence.

Seeking. Two sets of analyses were conducted to examine whether participants preferentially sought information consistent with their expectations. These analyses focused on the number of accusatory interview/interrogation techniques selected, the number of

accusatory interview/interrogation questions and statements selected, the average item-aggressiveness of interview/interrogation questions and statements selected, and the average item-guilt-presumptiveness of interview/interrogation questions and statements selected by participants.

First, four ANOVAs were conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable. The four variables outlined earlier each served as a dependent variable in one of these analyses. As shown in Table 23, results yielded only one significant difference in means across conditions. The only significant difference among conditions was in the number of accusatory interview/interrogation techniques selected by participants, $F(2, 70) = 5.22, p = .008$. Participants in the strong-social influence condition selected a greater number of accusatory techniques ($M = 3.16$) than those in the mixed-social influence condition ($M = 2.17$) and those in the weak-social influence condition ($M = 1.71$).

Second, four 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVAs were conducted. Each of the four variables outlined earlier served as a dependent variable in one of these analyses. As shown in Table 24, all results revealed a main effect of expectation, $F_s \geq 10.40, p_s \leq .002, \eta^2 < .10$. Participants given a strong expectation selected a greater number of accusatory techniques ($M = 3.06$), selected a greater number of accusatory questions and statements ($M = 3.60$), selected items that were more aggressive ($M = 2.02$), and selected items that were more guilt-presumptive ($M = 2.37$) than participants given a weak expectation ($M_s = 1.72, 2.54, 1.81, 2.18$, respectively). Results indicated there was neither a significant main effect of social

influence, $F_s \leq .07$, $p_s \geq .791$, $\eta^2 < .01$, nor an interaction between expectation and social influence, $F_s \leq 3.16$, $p_s \geq .079$, $\eta^2 \leq .03$.

These results suggest that participants' expectations influenced their selection of interview/interrogation strategies. However, the tendency to select items consistent with one's expectation did not occur to a greater extent in the social influence conditions in which participants held similar expectations.

Interpreting. I performed two sets of analyses to examine the hypothesis that participants would interpret information more consistently with their expectations. These analyses focused on participants' impressions of the suspect based on the behavior described in the interview/interrogation summary, participants' evaluations of the suspect's truthfulness, and participants' beliefs about the strength of the evidence against the suspect.

First, three ANOVAs were conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable. Each of the three variables specified above served as a dependent variable in one of these analyses. As shown in Table 25, two of the three analyses yielded a significant difference across conditions. Participants in the weak-social influence condition had more positive impressions of the suspect's behavior ($M = 3.19$) than participants in the mixed-social influence condition ($M = 2.85$) and participants in the strong-social influence conditions ($M = 2.93$), $F(2, 69) = 5.10$, $p = .009$. In addition, participants in the weak-social influence condition believed the suspect was more truthful ($M = 3.11$) than participants in the mixed-social influence condition ($M = 2.69$) and participants in the strong-social influence conditions ($M = 2.76$), $F(2, 70) = 3.66$, $p = .031$. Results did not indicate a significant

difference in participants' perceptions of the strength of the evidence, $F(2, 70) = 1.78, p = .176$.

Second, three 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVAs were conducted. Each of the three variables specified above served as a dependent variable in one of these analyses. As shown in Table 26, all results revealed a main effect of expectation, $F_s \geq 5.36, p_s \leq .023, \eta^2 \leq .05$. Participants given a weak expectation had more positive impressions of the suspect's behavior ($M = 3.19$), believed the suspect was more truthful ($M = 3.13$), and rated the strength of the evidence against the suspect as lower ($M = 2.79$) than participants given a strong expectation ($M_s = 2.87, 2.75, 3.15$, respectively). Results indicated there was neither a significant main effect of social influence, $F_s \leq .07, p_s \geq .791, \eta^2 < .01$, nor an interaction between expectation and social influence, $F_s \leq 1.47, p_s \geq .228, \eta^2 \leq .01$.

The results of these analyses suggest that participants had a tendency to interpret information about the suspect as being consistent with their expectation. This tendency was not stronger among those in the social influence conditions compared to those in the no social influence conditions.

Memory. I performed two analyses to examine the hypothesis that participants would inaccurately remember information in a manner consistent with their expectation. An ANOVA was conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable and participants' scores on an index of bias served as the dependent variable. Results indicated that there was no difference in participants' scores across conditions, $F(2, 63) = 1.03, p = .362$. Next, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social

influence versus social influence) ANOVA was conducted in which participants' scores on an index of bias served as the dependent variable. Results indicated a significant main effect of expectation, $F(1, 86) = 5.35, p = .023, \eta^2 = .06$. Participants given a strong expectation misremembered more information consistently their expectation ($M = .55$) than those given a weak expectation ($M = .04$). Results also indicated there was neither a significant main effect of social influence, $F(1, 86) = 1.03, p = .313, \eta^2 = .01$, nor an interaction between expectation and social influence, $F(1, 86) = 1.17, p = .283, \eta^2 = .01$.

These results indicate that participants were largely accurate in their recognition of the facts of the case because participants' scores on the index of bias were close to zero. However, participants with a strong expectation misremember more information in a manner consistent with their expectations than participants with a weak expectation.

Certainty. Two sets of analyses were conducted regarding certainty. The first examined the hypothesis that participants' would be more confident in their beliefs about the suspect's guilt when socially influenced than when not socially influenced. These analyses focused on participants' confidence in their assessment of the suspect's guilt and their confidence that suspect was the true culprit.

First, an ANOVA was conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable and participants' confidence in their assessment of the suspect's guilt served as the dependent variable. Results revealed no difference in participants' confidence across conditions, $F(2, 70) = 1.92, p = .154$. Next, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' confidence in their assessment served as the dependent variable. Results

indicated neither main effects were significant nor was the interaction significant, $F_s(1, 94) \leq .83$, $p_s \geq .363$, $\eta^2 < .01$.

Second, an ANOVA was conducted in which expectations among participants in the social influence condition (weak- versus mixed- versus strong-social influence) served as the independent variable. Participants' confidence that the suspect was the true culprit served as the dependent variable. Results revealed no difference in participants' confidence across conditions, $F(2, 69) = 1.36$, $p = .252$. Next, a 2 (Expectation: weak versus strong) x 2 (Social influence: no social influence versus social influence) ANOVA was conducted in which participants' confidence that the suspect was the true culprit served as the dependent variable. Results indicated a significant main effect of expectation, $F(1, 94) = 5.30$, $p = .023$, $\eta^2 = .05$. Participants given a strong expectation believed the suspect was more likely to be the true culprit ($M = 4.21$) than those given a weak expectation ($M = 3.53$). Results indicated there was neither a significant main effect of social influence, $F(1, 94) = 2.66$, $p = .106$, $\eta^2 = .03$, nor an interaction between expectation and social influence, $F(1, 94) = 1.09$, $p = .300$, $\eta^2 = .01$. Although the results from this analysis provide some support for confidence, the item itself reflects both confidence and a belief in the suspect guilty; thus, the interpretation of the responses to this item is not clear.

Discussion

The primary goals of Experiment 2 were to (1) determine if perceptual bias effects accumulate across perceivers in a situation in which perceivers discuss their strategies for interacting with a target and (2) to examine whether biased assimilation and consensus processes would contribute to any observed accumulation effect. These goals were addressed by conducting an experiment that manipulated expectations, whether or not participants

worked together, and the similarity of expectations among those who worked together. Accumulation was expected to occur in conditions which participants worked together and were induced with similar expectations about the suspect's guilt. Results indicated that cumulative perceptual bias effects were not occurring. Because there was no evidence of accumulation, it was not expected that the processes proposed to underlie accumulation effects would be observed to a greater extent when participants were induced with similar expectations about the suspect's guilt. Results confirmed this expectation. In the following sections, I elaborate on the findings observed in this experiment.

Accumulation of Perceptual Bias Effects

This research examined the hypothesis that perceptual bias effect can accumulate across perceivers such that the combined effect of multiple perceivers is larger than the effect of any individual perceiver. Results did not support this hypothesis. Participants who worked in pairs and who were induced with similar expectations about the suspect's guilt did not have impressions or beliefs that were more in line with their expectations than participants who worked alone. Specifically, pairs in which both participants were given a weak expectation about the suspect's guilt did not believe the suspect was any less guilty than participants working alone with a weak expectation. The pattern also held for participants induced with strong expectations about the suspect's guilt. Pairs in which both participants were given a strong expectation about the suspect's guilt did not believe the suspect was any guiltier than participants working alone with a strong expectation. Overall, results consistently revealed no evidence to suggest that the effect of expectation was stronger among those induced with similar expectations about the suspect's guilt.

Mechanisms Underlying the Accumulation of Perceptual Bias Effects

Biased Assimilation. I had originally hypothesized that participants would engage in the tendency to seek, interpret, and remember information consistently with their expectations to a greater extent when participants had similar expectations. However, because results revealed that perceptual bias effects were not accumulating across participants, it was unlikely that biased assimilations processes would be occurring to a greater extent in conditions in which pairs were induced with similar expectations about the suspect's guilt. Indeed, results indicated that there was no evidence that participants were more likely to seek, interpret, or remember information more consistently with their expectations in these conditions than in others.

However, results indicated that biased assimilation processes were still occurring. There was some evidence to indicate that participants sought, interpreted, and remembered information more consistently with their expectation. Participants induced with a strong expectation were selected more accusatory techniques than participants induced with a weak expectation. Participants induced with a strong expectation had more negative impressions of the suspect's behavior described by the summary, believed the suspect was being less truthful, and believed the strength of the evidence against the suspect was greater than did participants induced with a weak expectation. Lastly, although most participants correctly identified the facts of the case, participants induced with a strong expectation misremembered more information that pointed to the suspect's guilt than did participants induced with a weak expectation. These results suggest that a perceptual bias was operating because once the expectation was induced it caused differences in assimilation processes.

However, because these tendencies did not occur to larger extent in pairs induced with similar expectations, they did not contribute to accumulation.

Consensus. I had also hypothesized that consensus processes would contribute to the accumulation of perceptual bias effects. However, because no accumulation effects were observed, I did not expect to find support for consensus processes. The results concerning consensus are complicated.

Participants responded to an item that asked about the perceived similarity of opinions with their partner. I expected that because accumulation was not occurring that perceived consensus would be low; however, that was not the case. Results indicated that approximately 88% of the pairs indicated that they perceived that their impressions of the suspect's guilt were similar to their partner's. This perceived similarity occurred even among participants who were induced with dissimilar expectation (i.e., one with a weak and other with a strong expectation). Approximately 78% of the pairs in the dissimilar condition indicated that both participants perceived similarity with their partner's impressions of the suspect's guilt.

One possible explanation for why participants perceived such high agreement was that the question itself did not fully capture what it was I was trying to measure. Participants rated their agreement with the statement "The participant and I had similar opinions." Although I had intended this to measure similar opinions about beliefs of the suspect's guilt, the statement does not explicitly say that. Participants could have agreed with this item for several reasons. For example, participants could have agreed because they both felt that the case was ambiguous or because they both had wished that more forensic evidence had been presented.

To examine this possibility, I used other items in the questionnaire to create a new measure of perceived similarity. I first identified whether or not participants believed their partner thought the suspect was guilty. Next, I examined participants' responses to the dichotomous question of guilt. If participants believed their partner thought the suspect was not guilty and participants believed the suspect was not guilty, then they held similar beliefs. If participants believed their partner thought the suspect was guilty and participants believed the suspect was guilty, then they also held similar beliefs. If there was not symmetry between participants' beliefs about their partner's rating and their own rating of the suspect's guilty, then they held dissimilar beliefs. Because this was paired data, I then considered similarity within pairs. Consistent with the frequencies presented earlier, results indicated that only 20% of the pairs had either one participant or both indicating a dissimilar perception. These results suggest that the high rates of perceived similarity were not the result of a poorly worded item. Participants truly perceived similarity in their beliefs about the suspect's guilt and yet, accumulation was not occurring.

Possible Explanations for the Lack of Accumulation Effects Observed

There are several possible reasons why cumulative perceptual bias effects were not observed in these data. First, it is possible that the expectation manipulation was ineffective. However, the evidence suggests otherwise. Preliminary results indicated that the two versions of the case that were used to manipulate participants' expectations about the suspect's guilt had worked as intended. For example, before any participants interacted there was a significant difference in their expectations about the suspect lying, beliefs about the plausibility of the suspect's story, and their impressions of the suspect. Participants who read the strong case were more likely to believe the suspect would lie, to believe that the suspect's

story was not plausible, and to have negative impressions of the suspect than participants who read the weak case. These results suggest that the lack of accumulation was not due to a problem with the expectation manipulation.

Second, it is possible that participants did not explicitly state their beliefs about the suspect's guilt while interacting in pairs. What occurred during the participants' time together is not known because pairs worked together privately. However, it is possible that neither participant expressed an opinion about the suspect's guilt to their partner. This could explain why so many participants indicated that their partner's beliefs were similar to their own. They may have simply inferred a similar belief because their partner did not explicitly state his or her beliefs. This interpretation is consistent with a false consensus effect in which people tend to believe that other's share their beliefs (Ross, Greene, & House, 1977).

Third, it is possible that participants were somewhat ambivalent in their beliefs about the suspect's guilt. Based on the expectation induced, participants may have leaned in one direction more than the other, but they may still have been unconvinced as to what really happened. Participants may have expressed their beliefs, but also expressed reservations. If these reservations tapped into something the other participant was concerned about, then it is possible that these concerns may have attenuated the impact of having shared beliefs. It may be that perceived consensus alone is not enough to result in accumulation, but a perception of confidence in one's beliefs may also be important too. Future research is needed to examine these possibilities.

Chapter 10: General Overview

This dissertation sought to examine how perceptual bias effects accumulated across people. There exists only one previous investigation of this process (Willard et al., 2008). Although the results of Willard et al. investigation did provide evidence in support of accumulation, it did not examine how accumulation was occurring. Therefore, for my dissertation, I used psychological research and theory to propose a model of cumulative perceptual bias effects. This model described relations between two perceivers and a target and highlighted possible paths to accumulation.

Two experiments tested for accumulation and the extent to which biased assimilation (e.g., Olson et al., 1996; Nickerson, 1998) and consensus processes (e.g., Kelley, 1973)) served as underlying mechanisms in the accumulation of perceptual bias effects. Both of these experiments attempted to more clearly elucidate how accumulation was occurring by holding constant the target's behavior through the use of a fabricated target. Thus, these experiments examined whether accumulation could occur without interacting with a target, but through interaction among perceivers. The previous investigation of accumulation included a interaction with both perceivers and a target, which makes it impossible to determine if the effect was due to the interaction between perceivers, the interaction with a target, or both (Willard et al., 2008). The form of interaction between perceivers differed in the two experiments. In Experiment 1, perceivers never interacted with one another; instead, they were exposed to a purported other's beliefs about the target through a written statement. In Experiment 2, some perceivers interacted with one another to select strategies for how they would interact with the target if given the chance, while others selected their strategies

alone. Both experiments included items that measured biased assimilation processes and consensus.

Overview of Results

The results of these investigations were not straightforward. The results from Experiment 1 indicated that accumulation was occurring. Furthermore, results provided some support for biased assimilation processes as contributing to the observed accumulation effect. There was some evidence to indicate that perceivers interpreted and remembered information about the target in a manner that was consistent with their expectations, suggesting that a perceptual bias was occurring. The tendency to interpret and remember information in a biased manner occurred to a greater extent when perceivers perceived similarity with the purported other's beliefs about the suspect's guilt, suggesting that these processes may have facilitated the accumulation of perceptual bias effect. Results did not suggest that perceived similarity with another's beliefs made perceivers more confident in their beliefs. However, perceptions of consensus did influence whether or not perceptual bias effects accumulated. The accumulation pattern was only observed among perceivers perceiving consensus.

In contrast, the results from Experiment 2 provided no evidence for accumulation, though the results did suggest that biased assimilation processes were occurring. That is, consistent with previous research, perceivers' expectations did influence how they sought, interpreted, and remembered information (e.g., Olson et al., 1996). However, none of these processes occurred to a greater extent among perceivers with similar expectations working in pairs. In a way, this finding supports the proposition that biased assimilation processes may contribute to the accumulation of perceptual bias effects. If accumulation is not observed, then one would not expect to find evidence of these processes operating to a greater extent

when two perceivers' share expectations than when only one perceiver has the expectation. Thus, even though the two experiments provided discrepant results, they were generally consistent in regards the processes proposed to be operating in the accumulation process

Making Sense of the Findings

The results of this dissertation provided mixed evidence for the accumulation of perceptual bias effects. Experiment 1 provided evidence of cumulative perceptual bias effects and also demonstrated that biased assimilation processes and, in particular, perceived consensus contributed to these effects. Experiment 2 provided no evidence of cumulative perceptual bias effects in a situation in which perceivers worked in pairs and perceived consensus between each other. Yet another layer of complexity is added by taking into consideration the findings regarding the previous investigation of accumulation, which found evidence in support of accumulation in an experiment in which perceivers also interacted (Willard et al., 2008). Thus, the major question is why did perceptual bias effects not accumulate in Experiment 2 considering (1) Experiment 1 found accumulation, (2) in Experiment 2 perceivers' perceived consensus, and (2) in Experiment 2 the situation was most similar to the previous investigation finding support of accumulation. This question may be answered by examining methodological differences among the three experiments.

Perceived consensus was shown to be an important factor in Experiment 1. Accumulation findings were only observed among those who perceived consensus. However, in Experiment 2, no accumulation effects were observed and yet there was a high level of perceived consensus among participants. This difference may have been due to the explicitness of the beliefs expressed. In Experiment 1, the statements from a purported other explicitly communicated the bogus participant's beliefs. In Experiment 2, I had no control

over the communication of perceivers' beliefs. It is possible that perceivers may not have expressed their beliefs at all and thus, they were not communicated sufficiently for accumulation to occur. This explanation may account for why there was such high perceived consensus in Experiment 2. Perceivers may have simply assumed that the other person felt as they did; thus, possibility resulting in a case of false consensus (Ross, Greene, & House, 1977). However, this does not address why accumulation did not occur. Even if the beliefs were not explicit, perceptual biases still should have accumulated because perceivers' perceived consensus.

Another possibility could be the level of confidence in which perceivers' beliefs were expressed. In Experiment 1, the statements from a purported other both explicitly and confidently communicated the bogus participant's beliefs. The written statements indicated that the bogus participant had no doubts as to what he or she believed. In Experiment 2, it is possible that participants expressed their beliefs, but were not confident enough in their beliefs to exacerbate perceptual bias effects. The perceivers' expression of uncertain beliefs may have resulted in perceived consensus and yet, because these beliefs were uncertain, they did not influence their partner's beliefs. There are at least two reasons to believe that confidence in the expression of beliefs may have contributed to the lack of accumulation effects observed in Experiment 2.

First, the expectation induced may have worked in the intended manner but also left perceivers somewhat uncertain. The cases used to manipulate perceivers' expectations in Experiments 1 and 2 included information that both supported and contradicted their expectations. Perceivers given a weak expectation learned information that suggested the suspect was guilty and perceivers given a strong expectation learned information that

suggested the suspect was not guilty. The information used to manipulate perceivers' expectations in the previous investigation was very different (Willard et al., 2008). In the previous investigation, it was an expectation for a specific personality characteristic (i.e., hostility) and this expectation was delivered in the form of an official looking printout that was either blank or clearly labeled the target as having a hostile personality. Perhaps the confidence of a partner's beliefs was less of an issue in that situation because perceivers' were induced with clear expectations about the target. In this dissertation, the confidence with which a partner expressed a belief may have been an important factor.

In Experiments 1 and 2, participants' expectations were induced using two versions of a criminal case that could have raised more questions than it answered. Research has suggested that people with unclear self-concepts and those placed in ambiguous situations are more likely to be socially influenced (Allen, 1965; Swan & Ely, 1984; Tesser, Campbell, & Mickler, 1983). This may have prompted perceivers in Experiment 1 to be socially influenced by another participant's explicit beliefs, which led to accumulation effects. In Experiment 2, if perceivers did not have clear or confident beliefs, then perhaps neither perceiver was likely use their partner's beliefs to help them make a decision about the target.

Second, the circumstances in which perceivers interacted in Experiment 2 may have contributed to the level of certainty expressed. Perceivers in Experiment 2 selected their strategies for interacting with the target together. At that point, perceivers had not committed themselves to a course of action and may have still been trying to figure out what to think about the target. In contrast, in the previous investigation of accumulation (Willard et al., 2008), perceivers had already chosen their strategies for interacting with the target before they interacted with each other. Therefore, having to take the time to think about their

strategies may have solidified their impressions of the target. By the time they interacted with their partner they may have communicated their beliefs about the target more strongly.

As stated previously, what occurred during the interaction between perceivers in Experiment 2 is unknown. Future research should examine what naturally occurs in interactions between perceivers, as well as a more systematic manipulation of some of the potential factors proposed above to more clearly understand the circumstances in which cumulative perceptual bias effects will likely occur.

Implications

This dissertation makes several contributions to the understanding of perceptual bias effects. First, previous research has indicated that the size of expectancy effects, including perceptual bias effects, is typically modest (Jussim et al., 1996). However, there are certain psychological processes that could result in above average effect sizes. The accumulation of perceptual bias effects across perceivers represents one situation where many psychological processes may be operating to result in a larger than average effect size. Results from Experiment 1 suggested that biased assimilation and perceived consensus may contribute to an accumulation effect. These results are consistent with the proposition that the literature may be underestimating the magnitude of perceptual bias effects because investigations have generally tended to focus on situation involving only one perceiver. This dissertation provides justification, that at least under some circumstances, it is important to examine the influence of multiple perceivers.

Second, this dissertation provides a starting point for systematically examining how perceptual bias effects accumulate across perceivers. As outlined in the introduction, there are many possible paths that could lead to accumulation. Results from Experiment 1

suggested that accumulation can occur without direct contact with another perceiver. Thus, the accumulation effect does not seem to be limited to one-on-one contact between perceivers. In this increasing high tech world, there are many instances in which multiple perceivers may be evaluating a target, but rarely, if ever, have contact with one another. It is possible that the accumulation of perceptual bias effects may be occurring quite frequently.

Third, Experiment 1 demonstrated that perceived consensus is an important factor in determining whether or not perceptual bias effects will accumulate. However, in Experiment 2 perceivers perceived consensus, but there was no evidence for accumulation. Results from that experiment indicate that perceived consensus alone may not be sufficient to cause accumulation. Thus, like many processes within social psychology, the accumulation of perceptual bias effects appears to be a multifaceted process.

Fourth, this dissertation examined the accumulation process within the context of a criminal investigation. Researchers have speculated that biases generated early in an investigation have the potential to start a chain of events that could ultimately lead to a false arrest (Kassin, Goldstein, & Savitsky, 2003; Findley & Scott, 2006). Results from Experiment 1 provided some support for this proposition. Expectations provided to perceivers at the start of the experiment subsequently influenced processing of later information. Furthermore, expectations influenced processing of information to larger extent when perceivers perceived consensus with another. It is not preposterous to suggest that investigators may find themselves in a similar situation. That is, a situation in which multiple investigators holding similar expectations about the guilt of the suspect work to solve an ambiguous case. It is also possible that the accumulation of perceptual bias effects could

occur at several points in the span of a case, from investigation through prosecution of a suspect.

Limitations

There are several limitations of this research that warrant discussion. First, as discussed earlier, the interaction between pairs of perceivers in Experiment 2 is not known. These interactions took place in private. Additionally, the measures that were collected did not include items that sufficiently captured participants' perceptions of what occurred during their interaction. The few questions that addressed participants' beliefs about their partner turned out to be incredibly important. Knowing more about what happened during the interaction and what perceivers' thought about one another (e.g., their confidence in their partner's expectation) could have helped answer questions about why accumulation occurred in one experiment but not the other. Future research will need to examine perceivers' interactions more thoroughly.

Second, it is important to note that the context in which this process was examined is somewhat limited in terms of its generalizability. Admittedly, the investigative process in the real world is much different than the one that took place in these experiments. There are many factors that do not truly represent what happens in the real world. From the expertise of the investigators to the amount of information provided on a case, there are a number of differences. However, that does not mean that the accumulation process is not relevant to this context. The information gleaned from this investigation provides another perspective for exploring potential problems within the legal system.

Conclusion

This dissertation contributes important information for understanding how and when expectations can shape social reality. It provides evidence that biased assimilation processes and perceived consensus are significant factors in the occurrence of cumulative perceptual bias effects. However, it also indicates that they are clearly not the only factors that determine whether an accumulation process will occur. Situational circumstances and dispositional characteristics may also play a role and influence the degree to which these processes contribute to cumulative perceptual bias effects. At the very least, this dissertation clearly highlights the need for further investigation into the complex accumulation process.

Furthermore, this dissertation examined the accumulation of perceptual bias effects within the context of a criminal investigation. This is a unique context that has applications for understanding factors and procedures that may contribute to errors within the legal system. Although college students played the part of investigators, it is unlikely that real investigators are immune from the influence of their own and others' expectations.

As this dissertation indicated, perceivers' evaluations, interpretations, and memory were influenced by initial expectations. Perceived consensus with another perceiver exacerbated these differences, at least within one study. Thus, the accumulation process has the potential to reinforce inaccurate expectations and channel social interactions in ways that may place targets at a disadvantage. The belief that one's inaccurate expectation has been confirmed can have serious negative consequences, not just within context examined, but other contexts as well. The accumulation of perceptual bias effects observed in this dissertation and the identification of associated processes provide an important contribution

to a long line of research investigating how people's inaccurate expectations can shape reality.

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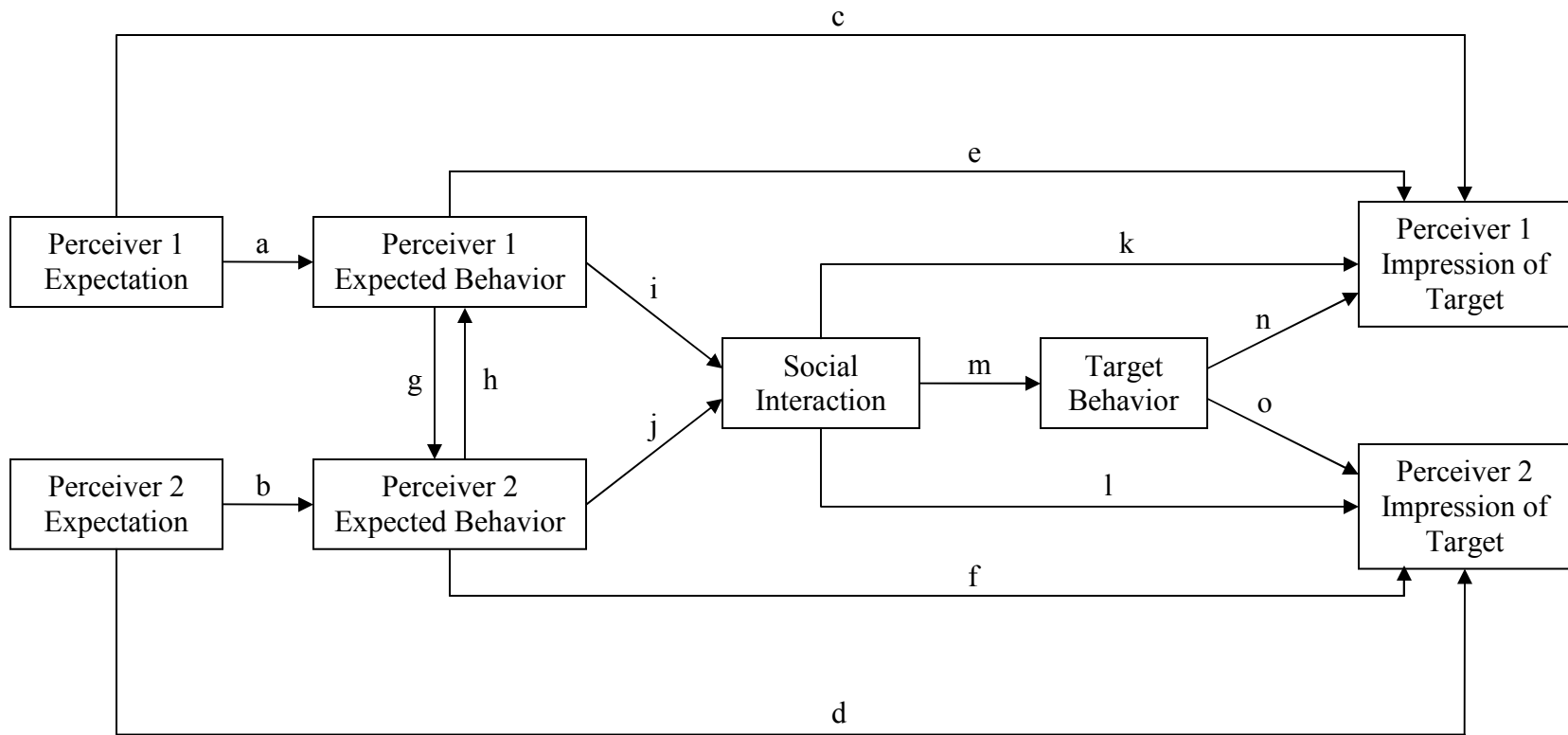


Figure 1. Conceptual model: The relations between two perceivers' expectations about a target and their subsequent impressions of the target.

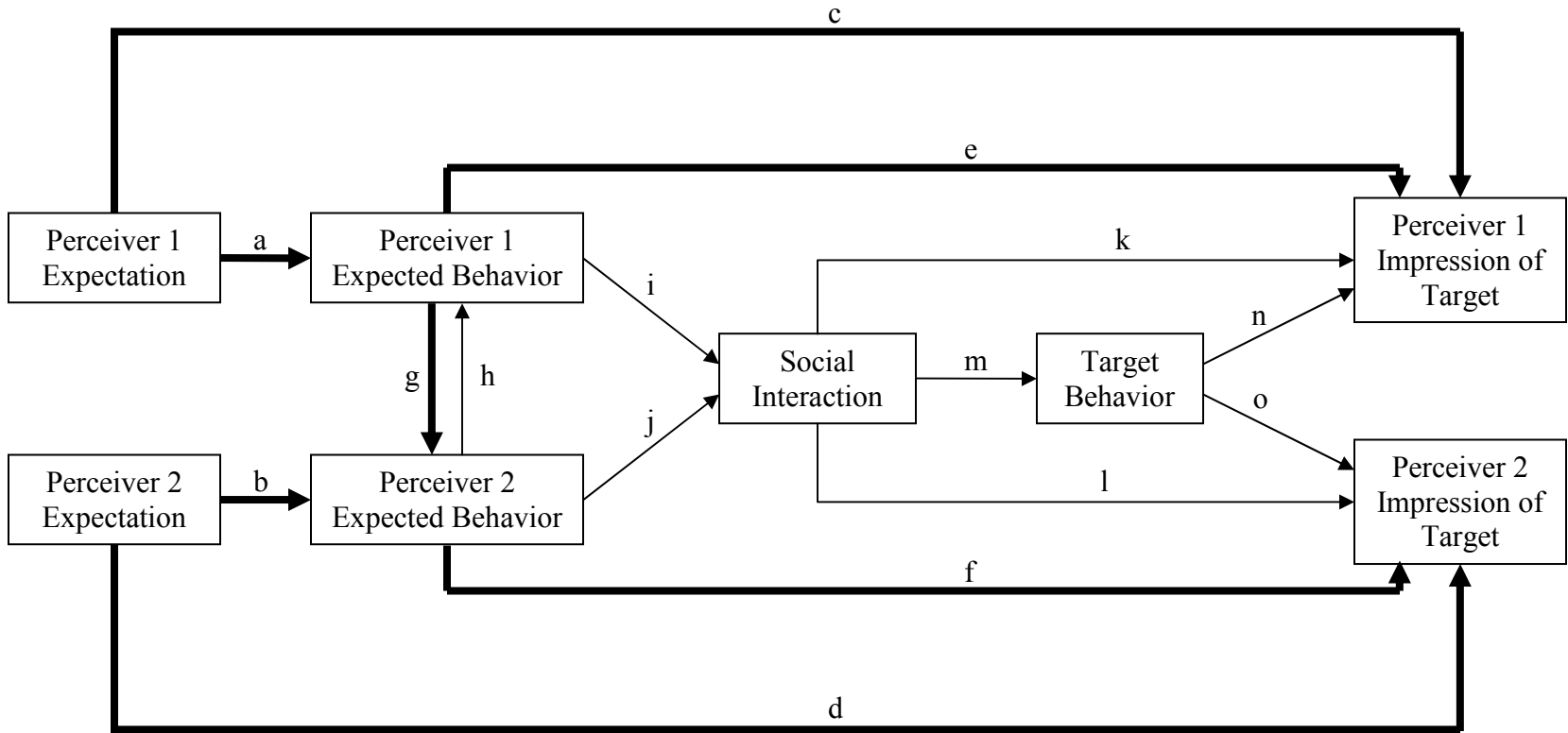


Figure 2. Experiment 1. Conceptual model: The relations between two perceivers' expectations about a target and their subsequent impressions of the target. The bold paths indicate the possible relations examined in Experiment 1.

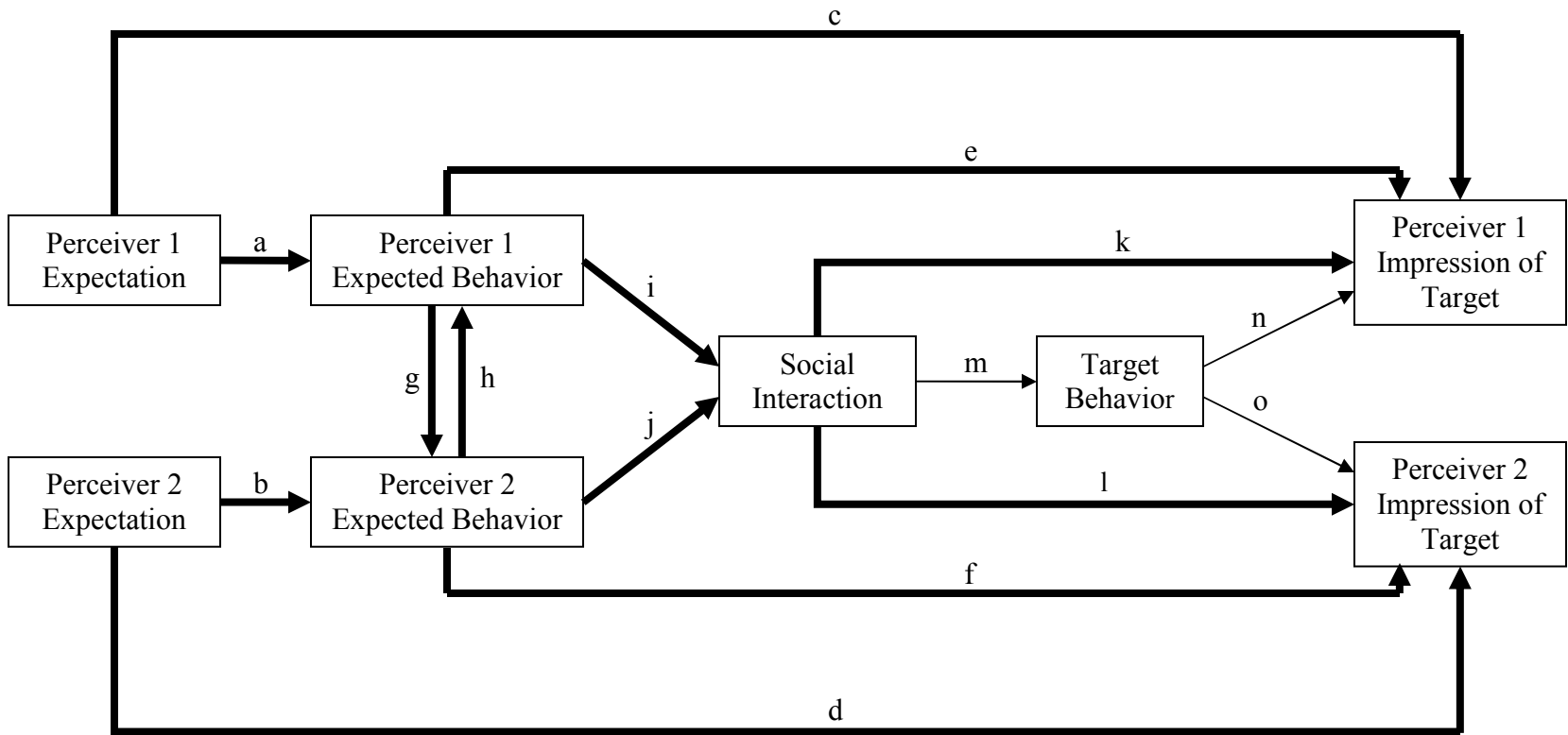


Figure 3. Experiment2. Conceptual model: The relations between two perceivers' expectations about a target and their subsequent impressions of the target. The bold paths indicate the possible relations examined in Experiment 2.

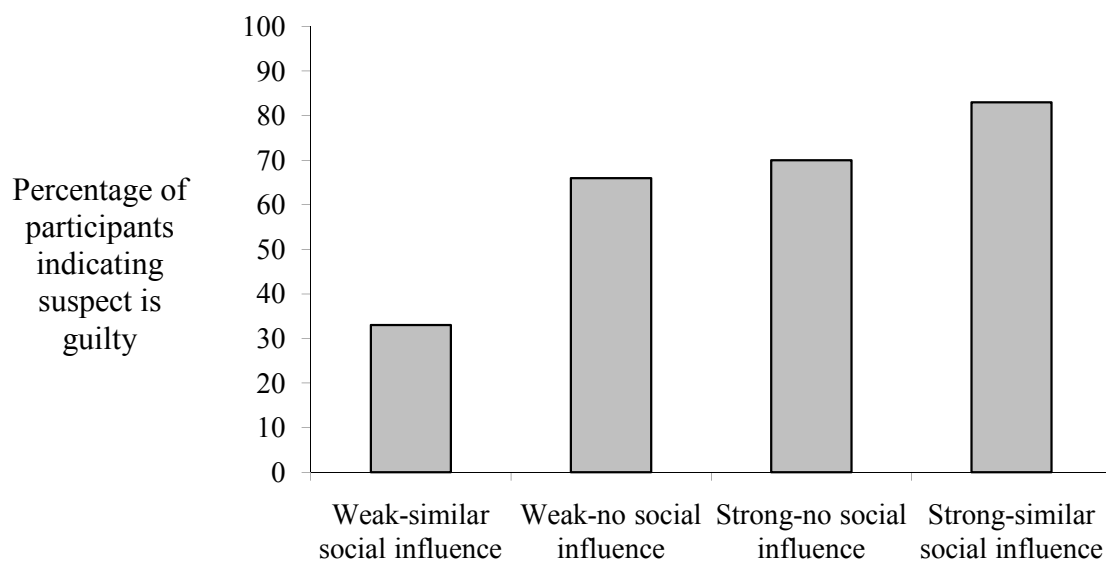


Figure 4. Experiment 1: Percentage of participants indicating that the suspect was guilty by expectation and social influence.

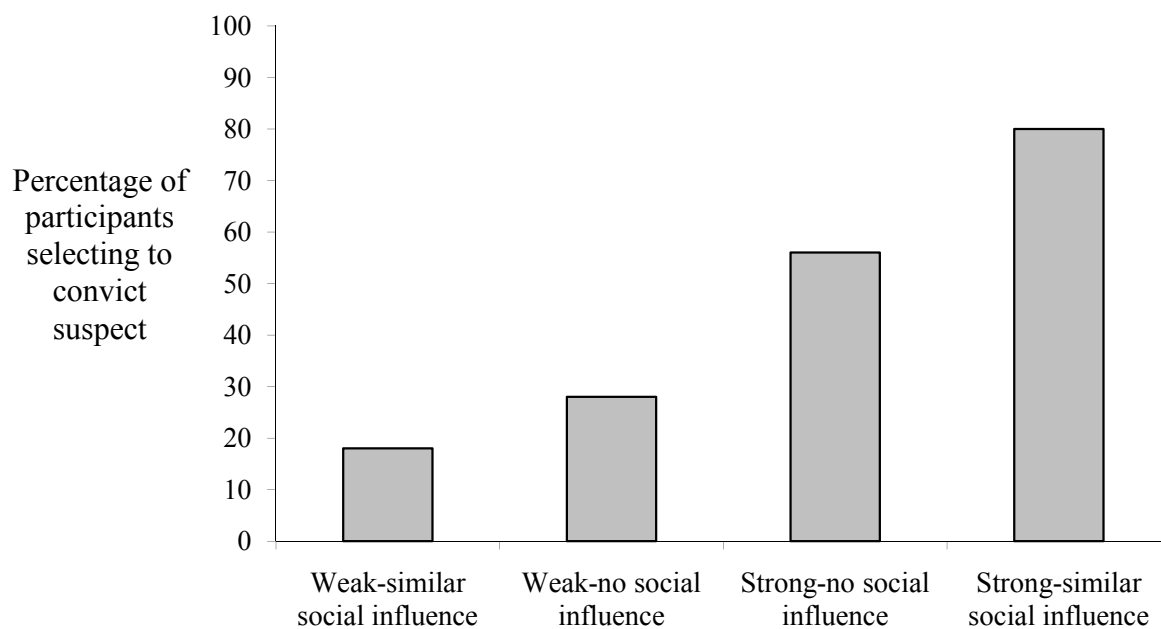


Figure 5. Experiment 1: Percentage of participants indicating that the suspect was guilty by expectation and social influence.

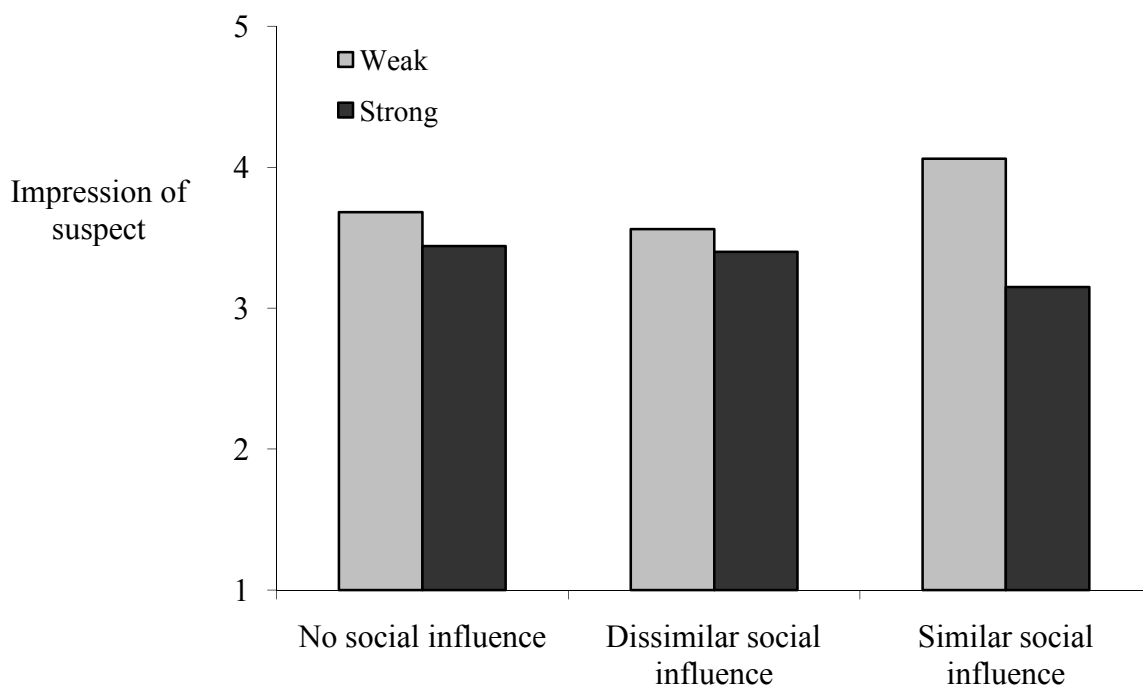


Figure 6. Experiment 1: Participants' mean ratings of their impressions of the suspect based on expectation, social influence, and perceived similarity.

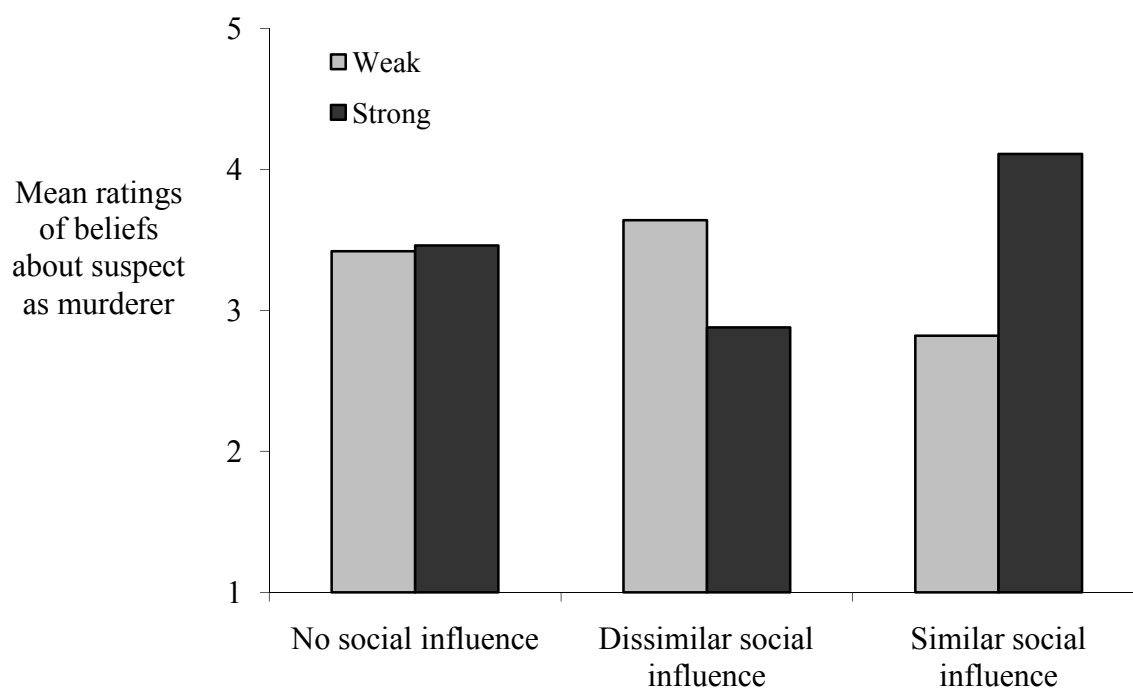


Figure 7. Experiment 1: Participants' mean ratings of their beliefs about the suspect murdering the victim based on expectation, social influence, and perceived similarity.

Table 1

Preliminary Study 2: Mean ratings of the aggressiveness and guilt-presumptiveness of interview/interrogation techniques.

Techniques	Label	Aggress	Guilt	Keep
Make it clear that these questions are a procedural formality that has to be followed.	N	1.25	1.65	X
Be sympathetic towards the suspect's confusions during the questioning process.	N	1.35	1.80	X
Let the suspect know that others are being investigated and that more evidence is being gathered.	N	1.55	1.80	X
Inform the suspect that he or she does not need to be afraid, because the evidence of the case will eventually be found.	N	1.80	2.15	X
Appeal to the importance of cooperation by enlisting the suspect's help in solving the crime.	N	1.70	2.20	X
Reassure the suspect that the investigator is an expert and will handle the case fairly.	N	1.35	2.25	X
Tell the suspect that he or she is only being asked questions to learn more about the crime, in general, when in fact he or she is suspected of committing the crime.	A	2.25	2.50	
Trick the suspect into believing that he or she is showing physical signs of guilt even though he or she is not.	A	3.25	2.50	
Attempt to trick the suspect by presenting false evidence that indicates his or her guilt.	A	3.35	2.60	X
Present physical evidence to suspect in an unbiased manner.	N	2.00	2.65	
Confuse or disorient the suspect to make him or her feel emotionally or psychological unstable.	A	3.65	2.70	
Pretend to sympathize with the suspect's situation by telling the suspect that the crime committed was understandable given the situation.	A	2.00	2.85	X
Explain how the suspect's description of what happened during the crime doesn't make sense.	A	2.50	2.90	
Make the suspect believe that it is in his or her best interest to confess.	A	2.55	2.95	X
Suggest to the suspect that a family member or friend might be either brought into the investigation or negatively affected if the suspect does not cooperate or confess.	A	3.00	3.00	
Make the suspect believe that the evidence will prove that he or she is guilty of the crime and that lying to interrogators won't help in the long run.	A	2.80	3.05	X
Repeatedly accuse the suspect of having committed the crime.	A	3.45	3.05	X
Use flattery or praise to make the suspect feel good or proud of having committed the crime.	A	2.00	3.10	X
Make the suspect feel guilty about having committed the crime.	A	2.85	3.20	X
Overwhelm the suspect with the amount of evidence against him or her.	A	3.25	3.20	X

Table 2

Preliminary Study 2: Mean ratings of the aggressiveness and guilt-presumptiveness of interview/interrogation questions and statements

Question/Statement	Label	Aggress	Guilt	Keep
I realize that you have just gone through a true traumatic situation, but anything you can remember would be helpful.	N	1.15	1.60	X
Had you ever previously seen the suspected male?	N	1.35	1.70	X
When the man was attacking you did you notice any distinguishing characteristics, such as birthmarks or tattoos?	N	1.40	1.80	X
Is anything missing from the apartment that you know of?	N	1.15	1.80	X
In your opinion did the intruder appear to know his way around the apartment?	N	1.40	1.90	X
Had you noticed anyone suspicious around the apartment recently?	N	1.35	1.90	X
We're not here to come down on you...we just want to know what happened.	N	1.40	1.90	X
Had the victim been upset the past couple of days?	N	1.15	1.90	X
What were you doing when the man broke into the apartment?	N	1.80	1.95	X
Did you lock the door to the apartment because you were scared the man might come back?	N	1.70	1.95	X
Do you know any reason why someone would want to hurt the victim?	N	1.60	2.00	X
Could you explain what happened the day the victim was killed?	N	1.35	2.05	
Can you describe what this alleged intruder looked like?	A	1.30	2.05	
So you were friends with the victim?	N	1.55	2.10	
Did the male say anything to you or the victim during his time in the apartment?	N	1.30	2.10	
Were you aware that the victim's assistant left for lunch at the same time everyday?	A	1.60	2.35	
How much did you dislike the victim?	A	2.20	2.40	
Why had you gone to see the victim that day?	N	1.65	2.50	
How is it that you were able to fight off this man and the victim wasn't?	A	2.20	2.75	X
If the intruder ran out the front door, why was it locked when the police showed up?	A	2.45	2.80	X
Explain to me how you could do something like this.	A	3.10	3.00	X
Maybe it is possible the victim isn't quite so innocent after all, but it is hard for me to know what to think when you don't explain why you did it.	A	3.15	3.10	X
Why didn't you call the police after the alleged intruder left? Busy coming up with a story?	A	3.05	3.15	X
How do you think your husband is going to react when he finds out what you've done?	A	3.30	3.20	

Table 2 Continued

Preliminary Study 2: Mean ratings of the aggressiveness and guilt-presumptiveness of interview/interrogation questions and statements.

Question/Statement	Label	Aggress	Guilt	Keep
You know, I'm sure you had good reasons for doing what you did. Why don't you explain them to me and maybe I can help.	A	2.00	3.25	X
Are you going to start telling the truth about what happened or are you going to continue to make this hard on yourself?	A	3.47	3.30	X
You expect us to believe that you had nothing to do with this?	A	3.15	3.30	X
Don't lie to me. You insult my intelligence and I don't like to be insulted.	A	3.30	3.5	X
Had you been thinking about killing the victim for awhile or did it just sort of happen?	A	3.30	3.6	X
Before you open your mouth to lie again, I want you to think carefully about whether you'd rather be charged with first-degree murder or manslaughter.	A	3.75	3.65	X

Note. Label indicates whether the question or statement was designed to be accusatory (A) or non-accusatory (N). Aggress indicates participants' mean ratings of each item's aggressiveness with high scores representing more aggressive items. Guilt indicates participants' mean ratings of each item's guilt-presumptiveness with high score representing more guilt-presumptive items. Keep indicates which items were retained for the main experiments.

Table 3

Coding system for Index of Bias

Statement	True	Unsure	False
Eva stated that she locked the door because she thought the intruder might return.	-1	0	0
Eva had been seeing a therapist for emotional problems.	+1	0	0
Eva displayed guilty behavior during the interrogation.	+1	0	-1
Eva called the police.	-1	0	0
Eva had the victim's blood on her clothes.	+1	0	-1
No one reported seeing a man at the apartment at the time of the offense.	+1	0	0
Eva's fingerprints were found on the knife.	+1	0	-1

Note. Positive values indicate an incorrect response that is consistent with a belief that the suspect is guilty. Negative values indicate an incorrect response that is consistent with a belief the suspect is not guilty.

Table 4

Experiment 1: Gender information presented for each condition

Condition	Male	Female	Missing	Total
Weak-social influence	21	12	0	33
Weak-no social influence	20	16	0	36
Strong-no social influence	24	13	0	37
Strong-social influence	20	14	1	35

Note. $N = 141$.

Table 5

Experiment 1: Correlations, means, and standard deviations for primary measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Expect suspect to lie		-.59**	.49**	.29**	.26**	-.41**	-.42**	.58**	.16	.12	.44**
(2) Impressions			-.46**	-.23**	-.30**	.42**	.39**	-.60**	-.24**	-.16	-.46**
(3) Suspect murdered the victim				.33**	.29**	-.51**	-.64**	.55**	.34**	.37**	.79**
(4) Number of guilt-presumptive techniques					.52**	-.09	-.16	.35**	.20*	.12	.36**
(5) Number of guilt-presumptive questions and statements						-.14	-.17	.30**	.15	.05	.36**
(6) Impressions of suspect based on summary							.70**	-.49**	-.21**	-.28**	-.56**
(7) Suspect's truthfulness								-.52**	-.28**	-.29**	-.65**
(8) Strength of evidence									.23**	.25**	.65**
(9) Index of bias										.17	.28**
(10) Confidence in assessment of suspect's guilt											.30**
(11) Confident that the suspect is the culprit											
<i>M</i>	3.94	3.57	3.38	2.17	3.15	3.18	3.11	3.08	.16	4.04	3.36
<i>SD</i>	.92	.70	1.11	1.55	1.63	.65	.91	.67	1.51	.85	1.08

Note. * $p \leq .05$. ** $p \leq .01$.

Table 6

Experiment 1: Full sample: ANOVAs for accumulation of perceptual bias effects.

Source	Impressions			Murder		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between Subjects			Between Subjects		
Expectation	1	15.07***	.10	1	1.40	>.01
Social influence	1	.01	>.01	1	.40	>.01
Expectation x social influence	1	3.02	.02	1	1.02	>.01
S within-group error	136	(.44)		133	(1.12)	

Values enclosed in parentheses represent mean square errors. S = subjects. Impression refers to participants' impressions of the suspect and Murder refers to participants' beliefs about the suspect murdering the victim.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 7

Experiment 1: ANOVAs for accumulation of perceptual bias effects.

Source	Impressions			Murder		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between Subjects			Between Subjects		
Expectation	1	19.39***	.15	1	9.87**	.08
Social influence	1	.10	>.01	1	.01	>.01
Expectation x social influence	1	6.57*	.05	1	8.92**	.07
S within-group error	108	(.44)		104	(1.11)	

Values enclosed in parentheses represent mean square errors. S = subjects. Impression refers to participants' impressions of the suspect and Murder refers to participants' beliefs about the suspect murdering the victim.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 8

Experiment 1: ANOVAs for seeking information.

Source	# of accusatory techniques			# of accusatory questions & statements			Aggressiveness of questions & statements			Guilt-presumptiveness of questions & statements		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects			Between subjects			Between subjects		
Expectation	1	3.60	.03	1	4.25*	.04	1	4.11*	.04	1	3.71	.03
Social influence	1	.10	>.01	1	.18	>.01	1	.01	>.01	1	.03	>.01
Expectation x social influence	1	.10	>.01	1	.72	>.01	1	.05	>.01	1	.01	>.01
S within-group error	107	(2.37)		101	(2.24)		105	(.10)		105	(.08)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 9

Experiment 1: ANOVAs for interpreting information.

Source	Impressions of suspect's behavior			Truthfulness of suspect			Strength of evidence		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects			Between subjects		
Expectation	1	1.05	>.01	1	8.30**	.07	1	19.70***	.15
Social influence	1	.10	>.01	1	.47	>.01	1	.08	>.01
Expectation x social influence	1	2.85	.03	1	4.31*	.04	1	4.81*	.04
S within-group error	108	(.47)		108	(.83)		108	(.63)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 10

Summary of hierarchical regression analyses for condition and truthfulness predicting impressions and beliefs about the suspect murdering the victim

Variable	Impressions			Murder		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Step 1						
Condition	-.29	.06	-.41***	.36	.10	.33***
Step 2						
Condition	-.21	.06	-.30***	.19	.09	.17*
Truthfulness	.30	.06	.39***	-.70	.09	-.58***

Note. $R^2 = .17$ for Step 1; $\Delta R^2 = .14$ for Step 2 ($ps < .001$) for impressions. $R^2 = .11$ for Step 1; $\Delta R^2 = .31$ for Step 2 ($ps \leq .001$) for murder. * $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 11

Summary of hierarchical regression analyses for condition and strength of evidence predicting impressions and beliefs about the suspect murdering the victim

Variable	Impressions			Murder		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Step 1						
Condition	-.30	.06	-.41 ^{***}	.37	.10	.33 ^{***}
Step 2						
Condition	-.12	.06	-.17 [*]	.12	.10	.10
Strength of evidence	-.61	.08	-.60 ^{***}	.86	.14	.54 ^{***}

Note. $R^2 = .17$ for Step 1; $\Delta R^2 = .30$ for Step 2 ($ps < .001$) for impressions. $R^2 = .11$ for Step 1; $\Delta R^2 = .24$ for Step 2 ($ps \leq .001$) for murder. ^{*} $p \leq .05$. ^{**} $p \leq .01$. ^{***} $p < .001$.

Table 12

Experiment 1: ANOVA for remembering information.

Source	<i>df</i>	Index of bias	
		<i>F</i>	η
Between Subjects			
Expectation	1	2.36	.02
Social influence	1	.62	>.01
Expectation x social influence	1	7.29**	.07
S within-group error	101	(2.03)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 13

Summary of hierarchical regression analyses for condition and index of bias predicting impressions and beliefs about the suspect murdering the victim

Variable	Impressions			Murder		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Step 1						
Condition	-.32	.07	-.44***	.36	.10	.32***
Step 2						
Condition	-.29	.06	-.40***	.30	.10	.27**
Strength of evidence	-.11	.04	-.22*	.22	.07	.28**

Note. $R^2 = .19$ for Step 1; $\Delta R^2 = .05$ for Step 2 ($ps \leq .013$) for impressions. $R^2 = .10$ for Step 1; $\Delta R^2 = .08$ for Step 2 ($ps \leq .003$) for murder. * $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 14

Experiment 1: ANOVAs for confidence.

Source	Confidence in assessment			Confidence in suspect as culprit		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects		
Expectation	1	.05	<.01	1	7.50**	.07
Social influence	1	1.28	.01	1	.45	<.01
Expectation x social influence	1	.64	<.01	1	3.03	.03
S within-group error	108	(.80)		104	(1.14)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 15
Experiment 1: ANOVAs for perceived similarity.

Source	Impression			Murder		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects		
Expectation	1	13.95***	.09	1	1.04	<.01
Similarity	1	.27	<.01	1	.44	<.01
Expectation x similarity	1	4.10*	.05	1	8.42***	.11
S within-group error	108	(.43)		104	(1.10)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects. Impression refers to participants' impressions of the suspect and Murder refers to participants' beliefs about the suspect murdering the victim.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 16
Experiment 1: ANOVAs for exploratory analyses with gender

Source	Impression			Murder		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects		
Expectation	1	14.25***	.09	1	1.15	<.01
Similarity	2	.27	<.01	2	.34	<.01
Gender	1	.03	<.01	1	.35	<.01
Expectation x similarity	2	4.76*	.06	2	8.13***	.11
Expectation x gender	1	1.21	<.01	1	.01	<.01
Similarity x gender	2	.05	<.01	2	1.67	.02
Expectation x similarity x Gender	2	.71	.01	2	.15	<.01
S within-group error	127	(.44)		124	(1.12)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects. Impression refers to participants' impressions of the suspect and Murder refers to participants' beliefs about the suspect murdering the victim. The similarity variable includes no social influence, similar-social influence, and dissimilar-social influence.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 17

Experiment 2: Gender information presented for each condition

Condition	Male	Female	Mixed	Total
Individuals				
Weak-no social influence	15	8	NA	23
Strong-no social influence	16	10	NA	26
Pairs				
Weak-social influence	6	9	9	24
Mixed-social influence	4	10	10	24
Strong-social influence	6	7	12	25

Table 18

Experiment 2: ANOVAs for expectation manipulation

Source	Plausibility of suspect's account			Expecting suspect to lie			Impressions of the suspect		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects			Between subjects		
Expectation	1	9.77**	.04	1	7.06**	.03	1	10.07**	.05
Social influence	1	2.10	.01	1	3.15	.02	1	.41	<.01
Expectation x social influence	1	.54	<.01	1	.24	<.01	1	.70	<.01
S within-group error	199	(1.15)		199	(.94)		198	(.50)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 19

Experiment 2: Correlations, means, and standard deviations for primary measures for no social influence conditions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Suspect murdered the victim		.41**	.37*	-.48**	-.56**	.50**	.25	.22	.84**
(2) Number of guilt-presumptive techniques			.63**	-.44**	-.25	.33*	.02	.41**	.23
(3) Number of guilt-presumptive questions and statements				-.40**	-.26	.20	.22	.26	.24
(4) Impressions of suspect based on summary					.72**	-.40**	-.01	-.27	-.34*
(5) Suspect's truthfulness						-.35*	-.08	-.16	-.24
(6) Strength of evidence							.42**	.20	.26
(7) Index of bias								-.03	.24
(8) Confidence in assessment of suspect's guilt									.08
(9) Confident that the suspect is the culprit									
<i>M</i>	3.72	2.39	3.08	2.99	2.94	2.97	.22	4.01	4.06
<i>SD</i>	1.19	1.78	1.83	.70	.97	.77	1.26	.89	1.65

Note. * $p \leq .05$. ** $p \leq .01$.

Table 20

Experiment 2: Correlations, means, and standard deviations for primary measures for social influence conditions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Suspect murdered the victim		.79**	.40*	-.55**	-.71**	.69**	.28*	.48**	.79**
(2) Number of guilt-presumptive techniques			.48**	-.23*	-.38**	.40**	.21	.26*	.33*
(3) Number of guilt-presumptive questions and statements				-.21	-.29*	.48**	.14	.29*	.37**
(4) Impressions of suspect based on summary					.62**	-.40**	-.31*	-.20	-.50**
(5) Suspect's truthfulness						-.58**	-.26*	-.27*	-.57*
(6) Strength of evidence							.22	.52**	.66**
(7) Index of bias								-.19	.12
(8) Confidence in assessment of suspect's guilt									.51**
(9) Confident that the suspect is the culprit									
<i>M</i>	3.73	2.36	2.99	2.99	2.85	3.04	.33	4.10	3.66
<i>SD</i>	.76	1.70	1.35	.40	.61	.53	.87	.66	.74

Note. * $p \leq .05$. ** $p \leq .01$

Table 21

Experiment 2: Frequencies for perceived consensus among social influence conditions

	2 participants perceived dissimilarity	1 participant perceived dissimilarity	2 participants perceived similarity	Missing information
Weak-social influence	0	2	20	2
Mixed-social influence	2	3	17	2
Strong-social influence	0	2	20	3

Note. Frequencies indicate the number of pairs of participants indicating similarity by social influence.

Table 22

Experiment 2: Frequencies of paired and individual responses of suspect's guilt

Condition	Not guilty		Not guilty & guilty		Guilty	
Social influence:						
Weak	5	21%	10	42%	9	37%
Mixed	0	0%	7	30%	16	70%
Strong	1	4%	8	25%	17	71%
No social influence:						
Weak	12	52%	NA		11	48%
Strong	5	19%	NA		21	81%

Note. In the social influence conditions, responses indicate both guilt responses and the similarity in responses across pairs of participants. Percentages represent within condition percentages.

Table 23

Experiment 2: One-way ANOVAs for seeking information among social influence conditions

Source	SS	df	MS	F
Number of accusatory techniques selected				
Between groups	27.09	2	13.54	5.20**
Within error	181.65	70	2.60	
Total	208.74	72		
Number of accusatory questions & statements selected				
Between groups	6.57	2	3.29	1.85
Within error	122.41	69	1.77	
Total	129.00	71		
Average item-aggressiveness of questions & statements selected				
Between groups	.18	2	.09	1.30
Within error	4.82	70	.70	
Total	5.00	72		
Average item-guilt-presumptiveness of questions & statements selected				
Between groups	.23	2	.12	2.01
Within error	4.05	70	.06	
Total	4.29	72		

Note. * $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 24

Experiment 2: ANOVAs for seeking information

Source	# of Accusatory Techniques			# of Accusatory Questions & Statements			Aggressiveness of Questions & Statements			Guilt-presumptiveness of Questions & Statements		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between Subjects			Between Subjects			Between Subjects			Between Subjects		
Expectation	1	16.07***	.15	1	11.04**	.11	1	11.42**	.11	1	10.40**	.10
Social influence	1	.06	<.01	1	.02	<.01	1	.01	<.01	1	.07	<.01
Expectation x social influence	1	.12	<.01	1	1.91	.02	1	3.16	.03	1	1.93	.02
S within-group error	94	(2.72)		92	(2.42)		93	(.09)		93	(.08)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 25

Experiment 2: One-way ANOVAs for interpreting information among social influence conditions

Source	SS	df	MS	F
Impressions of suspect's behavior				
Between groups	1.46	2	.73	5.09**
Within error	9.87	69	.14	
Total	11.33	71		
Truthfulness of suspect				
Between groups	2.52	2	1.26	
Within error	24.09	70	.34	3.66*
Total	26.60	72		
Strength of evidence				
Between groups	.96	2	.48	1.78
Within error	18.96	70	.27	
Total	19.92	72		

Note. * $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Table 26

Experiment 2: ANOVAs for interpreting information.

Source	Impressions of suspect's behavior			Truthfulness of suspect			Strength of evidence		
	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η	<i>df</i>	<i>F</i>	η
	Between subjects			Between subjects			Between subjects		
Expectation	1	7.92**	.08	1	5.36*	.05	1	7.42**	.07
Social influence	1	.30	<.01	1	.01	<.01	1	.04	<.01
Expectation x social influence	1	.30	<.01	1	.02	<.01	1	1.47	.01
S within-group error	93	(.32)		94	(.65)		94	(.42)	

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

* $p \leq .05$. ** $p \leq .01$. *** $p < .001$.

Appendix A: Case information

Weak Case:

A woman is found dead in an apartment. The victim is Sarah, a psychiatrist who had her office in the apartment. A second woman, Eva, is encountered in the apartment and thus, a suspect in the case. Eva is an acquaintance of the victim. Eva's husband was a client of the victim. The victim had recently received several phone calls from an anonymous man who each time threatened to kill her with a knife. The victim had reported these phone calls to the police and told the police that she thought the man must be a patient or a former patient. The following observations have been made thus far in the investigation:

Strong Case:

A woman is found dead in an apartment. The victim is Sarah, a psychiatrist who had her office in the apartment. A second woman, Eva, is encountered in the apartment and thus, a suspect in the case. Eva is an acquaintance of the victim. Eva's husband was a client of the victim and therefore, Eva's husband and the victim had regular contact. According to the victim's assistant, Eva had expressed suspicion about a sexual relationship between the victim and Eva's husband. The victim's assistant stated that Eva was deeply jealous. The following observations have been made thus far in the investigation:

Examples of Observations:

1. The crime was committed at lunchtime.
2. When the victim's assistant returned from lunch she found the apartment door locked from the inside.
3. The assistant got worried and decided to call the police.
4. The policemen arrived within a few minutes.
5. They also found the door locked from the inside.
6. After a few minutes of pounding on the door and ringing the doorbell Eva opened the door.
7. Eva had cuts in her hands and signs of beating to the face.
8. She also had bloodstains on her clothes.
9. She was in a state of shock.
10. The police found the victim's body in the apartment.
11. The police found a knife next to the body.
12. Eva denies all guilt.
13. She claims that an unknown, male intruder attacked the victim with the knife.
14. She allegedly tried to stop the offense and the perpetrator dropped the knife.
15. She also claims that she got hurt at that same moment.
16. She says that the intruder knocked her down and fled through the apartment door.
17. The suspect claims that the perpetrator wore gloves.
18. A neighbor told the police that he had seen a man running down the street outside the victim's apartment by the time of the offense.
19. The neighbor said that the man did not wear gloves.

Appendix B: Preliminary Study 1 questionnaire

1. I think that the Eva's description of what happened is believable.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

2. During an interview with Eva, I would expect her to lie.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

3. I believe that the suspect is _____?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree
Intelligent	1	2	3	4	5	6
Honest	1	2	3	4	5	6
Moral	1	2	3	4	5	6
Upset	1	2	3	4	5	6
Truthful	1	2	3	4	5	6
Calculating	1	2	3	4	5	6
Unstable	1	2	3	4	5	6
Warm	1	2	3	4	5	6
Typical criminal	1	2	3	4	5	6

4. I believe Eva is responsible for the victim's death.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

5. Eva is guilty.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

6. How confident are you in your assessment of Eva's guilt?

1	2	3	4	5	6
Very unconfident	Unconfident	Somewhat unconfident	Somewhat confident	Confident	Very confident

7. In your own words, describe what you believe happened.

Appendix C: Demographic questionnaire

1. What is your gender? Male Female

2. What is your age? _____

3. What is your school classification?

Freshman Sophomore Junior Senior Graduate Student

Other (please indicate) _____

4. What is your ethnicity?

African American Asian Latino/a Caucasian Native American

Other (please indicate) _____

5. In which direction do you generally lean in terms of political affiliation?

Conservative Democrat Independent Liberal Libertarian Republican Not
political

Other (please indicate) _____

- Do you have any connection to the law enforcement community (i.e., work for DPS, relative is an officer, have been arrested)? No Yes

6. If you answered yes to question 5, please briefly explain the connection.

Appendix D: Suspicion check

Please answer the following questions:

1. Please indicate what you knew about this experiment before participating.
2. In a sentence or two, please indicate what you believe this experiment was about?
3. Do you believe that you were misled in any way during this experiment? No
Yes
4. If you believe that you were misled, please describe how. If you do not believe that you were misled, then skip this question.
5. Do you believe there was anything strange about this case? If so, explain.

Appendix E: Social influence manipulation

Bogus participant's statement: Not guilty version given to participants with weak expectation.

I read the evidence over and over again trying to figure out what happened. And I'm not convinced that she did it. The evidence against her is not straight forward and I think it is a real possibility that this other guy could have been the murderer. Eva's story just makes sense to me. I think it would be a good idea to continue the investigation – find out more about this other guy. I have serious doubts – I don't think she's guilty. I mean just look at the evidence! It doesn't add up.

Bogus participant's statement: Guilty version given to participants with strong expectation.

I read the evidence over and over again trying to figure out what happened. And I'm convinced she did it. The evidence against her is pretty straight forward and I don't think it is really possible that this other guy could have been the murderer. Eva's story just doesn't make sense to me. I think it would be a good idea to arrest her – she is clearly lying about this other guy. I have no doubts – I think she's guilty. I mean just look at the evidence! It all adds up.

Appendix F: Initial questionnaire

Please answer the following questions:

8. I think that Eva's account of the event is plausible.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

9. During an interview with Eva, I would expect her to lie.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

10. I believe that Eva is _____. Please circle your responses below.

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree
Intelligent	1	2	3	4	5	6
Honest	1	2	3	4	5	6
Moral	1	2	3	4	5	6
Upset	1	2	3	4	5	6
Truthful	1	2	3	4	5	6
Calculating	1	2	3	4	5	6
Unstable	1	2	3	4	5	6
Warm	1	2	3	4	5	6
A typical criminal	1	2	3	4	5	6

Appendix G: Interview/interrogation techniques by type

Non-accusatory techniques:

1. Get Eva's statement and tell her she will be contacted if more information is needed.
2. Reassure Eva that the investigator is an expert and will handle the case fairly.
3. Appeal to the importance of cooperation by enlisting Eva's help in solving the crime.
4. Refrain from questioning until further evidence is gathered.
5. Be sympathetic towards Eva's confusion during the questioning process.
6. Let Eva know that others are being investigated and the more evidence is being gathered.
7. Inform Eva that she does not need to be afraid, because the evidence of the case will eventually be found.
8. Make it clear that these questions are a procedural formality that has to be followed.

Accusatory techniques:

1. Pretend to sympathize with Eva's situation by telling her the crime committed was understandable given the situation.
2. Make Eva believe that the evidence will prove that she is guilty of the crime and that lying to investigators won't help in the long run.
3. Make Eva believe that it is in her best interest to confess.
4. Use flattery or praise to make Eva feel good or proud for having committed the crime.
5. Overwhelm Eva with the amount of evidence against her.
6. Attempt to trick Eva by presenting false evidence that indicates her guilt.
7. Repeatedly accuse Eva of having committed the crime.
8. Make Eva feel guilty about having committed the crime.

Appendix H: Interview/interrogation techniques

Below are brief descriptions of different techniques that investigators use during interviews and interrogations with suspects in criminal cases.

Imagine that Eva has been brought into a police station for questioning. As investigators in this case your goals during this questioning process are to *uncover the truth* and, *if you believe the suspect is guilty, to get the suspect to confess*.

Please select the FIVE techniques that you believe would help you accomplish your goal(s).

	Make Eva feel guilty about having committed the crime.
	Repeatedly accuse Eva of having committed the crime.
	Make it clear that these questions are a procedural formality that has to be followed.
	Attempt to trick Eva by presenting false evidence that indicates her guilt.
	Inform Eva that she does not need to be afraid, because the evidence of the case will eventually be found.
	Let Eva know that others are being investigated and that more evidence is being gathered.
	Overwhelm Eva with the amount of evidence against her.
	Use flattery or praise to make Eva feel good or proud for having committed the crime.
	Be sympathetic towards Eva's confusion during the questioning process.
	Refrain from questioning until further evidence is gathered.
	Make Eva believe that it is in her best interest to confess.
	Appeal to the importance of cooperation by enlisting Eva's help in solving the crime.
	Make Eva believe that the evidence will prove that she is guilty of the crime and that lying to investigators won't help in the long run.
	Reassure Eva that the investigator is an expert and will handle the case fairly.
	Get Eva's statement and tell her she will be contacted if more information is needed.
	Pretend to sympathize with Eva's situation by telling her the crime committed was understandable given the situation.

Please double-check that you have selected FIVE techniques!

Appendix I: Interview/interrogation questions and statements

Below are several questions and statements that an investigator could make while talking with Eva. Remember, as investigators in this case your goals during this questioning process are to *uncover the truth* and, *if you believe the suspect is guilty, to get the suspect to confess*.

Please select the EIGHT questions or statements that you believe would help you accomplish your goal(s).

	Explain to me how you could do something like this.
	When the man was attacking you did you notice any distinguishing characteristics, such as birthmarks or tattoos?
	Had you ever previously seen the suspected male?
	In your opinion did the intruder appear to know his way around the apartment?
	Maybe it is possible the victim isn't quite so innocent after all, but it is hard for me to know what to think when you don't explain why you did it.
	What were you doing when the man broke into the apartment?
	Are you going to start telling the truth about what happened or are you going to continue to make this hard on yourself?
	Why didn't you call the police after the alleged intruder left? Busy coming up with a story?
	Before you open your mouth to lie again, I want you to think carefully about whether you'd rather be charged with first-degree murder or manslaughter.
	How is it that you were able to fight off this man and the victim wasn't?
	Do you know any reason why someone would want to hurt the victim?
	Had you noticed anyone suspicious around the apartment recently?
	You know, I'm sure you had good reasons for doing what you did. Why don't you explain them to me and maybe I can help.
	If the intruder ran out the front door, why was it locked when police showed up?
	I realize that you have just gone through a very traumatic situation, but anything you can remember would be helpful.
	We're not here to come down on you...we just want to know what happened.
	Had the victim been upset the past couple days?
	Don't lie to me. You insult my intelligence and I don't like to be insulted.
	You expect us to believe that you had nothing to do with this?
	Did you lock the door to the apartment because you were scared that the man might come back?
	Had you been thinking about killing the victim for awhile or did it just sort of happen?
	Is anything missing from the apartment that you know of?

Please double-check that you have selected EIGHT techniques!

Appendix J: Interview/interrogation summary

The interview/interrogation with this suspect was videotaped and a transcript was made. We have been given access to the transcript with Eva. However, because of time constraints, you will not be reading the entire transcript. Instead, you will be reading a brief summary of what occurred during Eva's discussion with the investigator. Please read the summary carefully.

The suspect entered the room quietly and sat down. The investigator began by asking how she was feeling. The suspect replied, "I don't know. Horrible? I still can't believe this happened." The suspect appeared nervous and tense. She was fidgeting around a great deal. Before asking the suspect any further questions, the investigator stated that she needed to focus on answering the question otherwise the conversation was going to take much longer. The investigator began by asking general questions about the suspect and the suspect's relationship with the victim, starting with why suspect was in the victim's apartment at the time of the murder. Suspect stared blankly past the investigator before responding. She started to speak, but seemed to think better of it and shook her head. "I had stopped by to ask her how [husband] was doing. You know, Sarah had been his therapist. He's important to me, and I wanted to make sure everything was ok. She knew who I was, and was happy to talk with me." She nodded when finished with this statement.

The investigator asked about her husband's treatment and the victim's response when she was asked about said treatment. The suspect answered that "She didn't say much before it happened. She needed to finish up something else before we could talk, so I waited in the other room." Suspect's eyes began watering. The investigator asked her directly, "Did you have any reason to want Sarah dead?" The suspect first seemed shocked by the question and then appeared somewhat angry. She stated that there was absolutely no reason for her to want the suspect dead and then denied any involvement in the murder.

The suspect was asked a series of questions about how much she cared for her partner. At one point she replied, "Of course, I cared. That's why I went to talk to his therapist." The investigator asked how the suspect thought her partner would respond when he discovered what she had done. The suspect shrugged and continued to deny any involvement. She then stated that she was a victim in this case as well. She stared at the table and pulled on the sleeves of her shirt.

The investigator switched to a new topic, wanting to know more specific details about the crime scene such as the temperature, objects at the scene (including the murder weapon,) and where the suspect was positioned during the murder. The suspect described the situation as best she could, but frequently answered that she "didn't know." The investigator inquired as to how long the struggle took, and when the suspect became involved physically with the struggle. The suspect responded that "it all happened so fast, and I was scared. That man was there and I thought he might kill me too."

"There was blood on me and I was hurt, and I didn't know what to do." The investigator asked how she had been hurt, and she explained that she had been hit in the face during the struggle, and she wasn't able to think straight. She did not know how the murder weapon was taken from the male assailant, but suggested that maybe she had knocked it out of his hand. The suspect began to shake her head again, and repeated several times "I can't believe this happened." Although she repeatedly asked if the interview was almost finished and appeared anxious to leave, she also appeared to be cooperative.

Appendix K: Second questionnaire

1. I believe Eva is Not guilty Guilty
2. I am confident in my assessment of Eva's guilt.
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
3. I selected techniques with the primary goal of getting the suspect to confess.
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
4. It is likely at this point that I would continue investigating the crime in order to look for alternative suspects.
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
5. Eva was _____ *during* the interview/ interrogation (i.e., the summary)?
- | | Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
|-------------|-------------------|----------|-------------------|----------------|-------|----------------|
| Defensive | 1 | 2 | 3 | 4 | 5 | 6 |
| Honest | 1 | 2 | 3 | 4 | 5 | 6 |
| Friendly | 1 | 2 | 3 | 4 | 5 | 6 |
| Upset | 1 | 2 | 3 | 4 | 5 | 6 |
| Truthful | 1 | 2 | 3 | 4 | 5 | 6 |
| Calculating | 1 | 2 | 3 | 4 | 5 | 6 |
| Unstable | 1 | 2 | 3 | 4 | 5 | 6 |
| Warm | 1 | 2 | 3 | 4 | 5 | 6 |
| Confused | 1 | 2 | 3 | 4 | 5 | 6 |
6. I believe there is enough evidence to arrest Eva for committing this crime.
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
7. Based on Eva's behavior as described in the summary, I think she is telling the truth.
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |
8. Eva behaved as I expected during the interview/interrogation (i.e., the summary).
- | | | | | | |
|-------------------|----------|-------------------|----------------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Strongly disagree | Disagree | Somewhat disagree | Somewhat agree | Agree | Strongly Agree |

9. Eva's denials were very convincing.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

10. I am confident that Eva is the true culprit in this crime.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

11. The evidence against Eva is very persuasive.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

12. Eva murdered the victim.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

13. I put a lot of thought into the interview/interrogation strategies that I selected.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

14. In your own words, describe what you believe happened.

15. What information did you consider most important in assessing Eva's guilt or innocence?

16. Which of the following observations were made? Circle your selection below.

	True	Unsure	False
Eva stated that she locked the door because she thought the intruder might return.	True	Unsure	False
Eva had been seeing a therapist for emotional problems.	True	Unsure	False
The crime was committed at lunchtime.	True	Unsure	False
The victim's assistant was at the apartment when the murder took place.	True	Unsure	False
Eva displayed guilty behavior during the interrogation.	True	Unsure	False
Eva called the police.	True	Unsure	False
Eva had a motive for the crime.	True	Unsure	False
Eva had the victim's blood on her clothes.	True	Unsure	False
No one reported seeing a man at the apartment at the time of the offense.	True	Unsure	False
Eva was in a state of shock when police arrived at the scene.	True	Unsure	False
Eva's fingerprints were found on the knife.	True	Unsure	False
The victim had received phone calls in which a man threatened her.	True	Unsure	False
Eva said the intruder who attacked the victim wore gloves.	True	Unsure	False

17. If I were on a jury and had to make a decision right now as to whether or not Eva should be convicted of the crime, my decision would be to?

Not convict Eva

Convict Eva

Only perceivers in the social interaction conditions answered the following questions:

18. Based on the participant's written statement (or *Based on what the other participant said and how he or she acted*), I think he or she thought the suspect was guilty.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

19. The other participant and I have similar opinions about the case.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

20. The other participant made a convincing argument.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly Agree

Curriculum Vitae

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Education:

- B. A. in Psychology, University of Northern Iowa, 2002
- M. S. in Psychology, Iowa State University, 2006
- Graduate Student Teaching Certificate, Iowa State University, 2008

Publications:

- Madon, S., Guyll, M., Spoth, R. L., & Willard, J. (2004). Self-fulfilling prophecies: The synergistic accumulation of parents' beliefs on children's drinking behavior. *Psychological Science, 15*, 837-845.
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- Madon, S., Guyll, M., Buller, A. A., Scherr, K. C., Willard, J., & Spoth, R. (in press). The mediation of mothers' self-fulfilling effects on their children's alcohol use: Self-verification, informational conformity and modeling processes. *Journal of Personality and Social Psychology*.

Course Instructor:

- Laboratory in Introductory Psychology, 2004, 2005
- Introductory Psychology, 2006, 2008
- Research Methods, 2006, 2007, 2008
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Honors and Awards:

- Wakonse Fellow, Iowa State Graduate and Professional Student & Center for Excellence in Learning and Teaching, 2006
- Preparing Future Faculty Program Associate, Fellow, and Scholar Certificate, 2006
- Peer Teaching Award, Iowa State University Graduate and Professional Student Senate, 2007
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