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Searching for Power: An Experimental Test for the Accumulation of Expectancy Effects

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Searching for power: An experimental test for the accumulation of expectancy effects

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TABLE OF CONTENTS

Abstract

Social reality can be created through self-fulfilling prophecies and perceptual biases. A self-fulfilling prophecy is a false belief that leads to its own fulfillment. A perceptual bias occurs when an individual believes that her or his inaccurate expectation about another has been confirmed to a greater extent than it has in reality. Although research findings bearing on these processes are robust, these effects are typically small. Nonetheless, this does not mean that self-fulfilling prophecy and perceptual bias effects are always small. There are conditions under which such effects have the potential to be powerful. The current experiment tested this possibility by addressing two main goals: 1) to examine if expectancy effects accumulate across perceivers and 2) to examine whether unfavorable or favorable expectancies produce more powerful cumulative expectancy effects. Sessions were run with groups of two perceivers and one target (N=145 groups). Whereas some perceivers were induced with either an unfavorable (i.e., hostile) or a favorable (i.e., friendly) expectancy, other perceivers were not induced with any expectancy. All perceivers then interacted with a target in a reaction time task, during which they used a noise weapon on an alternating basis. After the reaction time task, participants' impressions of each other were measured. The average noise level that targets administered to perceivers was the dependent variable used to test for self-fulfilling prophecy effects. Perceivers' impressions of targets was the dependent variable used to test for perceptual bias effects. Results failed to support the occurrence of a self-fulfilling prophecy. However, perceptual bias effects were observed – perceivers induced with an unfavorable expectancy judged targets' as significantly more hostile than perceivers who were not induced with an unfavorable expectancy. However, further analyses indicated that perceptual bias effects did not accumulate across perceivers. Possible implications and some limitations of the experiment are discussed.

Chapter I: Expectancy Effect Processes

Social psychological theory proposes that people's expectancies can construct social reality (Klein & Snyder, 2003; Miller & Turnbull, 1986; Snyder & Stukas, 1999). Interest in the role of expectancies can be traced back to the scholar Samuel Johnson. Johnson (1905) posited that people love to expect and once these expectations are either satiated or disappointed, individuals continue with new expectations. The role of expectancies has been central to social psychological research. *New Look in Perception* research of the 1940s and 1950s posited that people's interpretation of reality is biased by their emotions, motives, and expectations (Bruner, 1957; Merton, 1948). The self-fulfilling prophecy and perceptual bias processes are central to this theoretical tradition because they involve people's expectancies shaping actual behavior and altering perceptions.

The Self-fulfilling Prophecy

Robert Merton introduced the term self-fulfilling prophecy to the social sciences to refer to false beliefs that lead to their own fulfillment (Merton, 1948). Drawing on Merton's work, researchers have identified three core, sequential events that must occur for a self-fulfilling prophecy to take place. First, one person (a perceiver) must hold a false expectancy about another person (a target). For example, a teacher, drawing on social class stereotypes, might overestimate a student's intelligence on the basis of the student's socioeconomic background. Second, the perceiver must treat the target in a manner consistent with the false expectancy. The teacher who overestimates the student's intelligence would have to treat that student as if she or he is more intelligent than is actually the case. Third, the target has to respond to the perceiver's treatment in such a way as to confirm the originally false expectancy, thus making it come true. The student who is treated as if she or he is especially intelligent would have to learn more than other students in the class, thereby confirming the teacher's originally false expectancy.

Perceptual Biases

In contrast to a self-fulfilling prophecy which involves perceivers changing targets' actual behavior, a perceptual bias occurs when perceivers' expectancies influence their perceptions of targets' behavior. That is**,** a perceptual bias occurs when a perceiver believes that her or his false expectancy has been confirmed to a greater degree than it has in reality (Neuberg, 1989). For example, a coach might believe that a particular athlete will perform statistically well during the season. Consistent with this false expectancy, the coach may interpret and remember the athlete's performance as above average, even though the athlete's performance did not differ from the performance of other team members. Consistent with a perceptual bias, therefore, the coach believed that the athlete confirmed the false expectancy to a greater extent than was actually the case. Perceptual biases reflect perceivers' attempts to assimilate new information into their existing beliefs (Jussim, Eccles, & Madon, 1996).

Expectancy Effects: Empirical Support

Much of the initial interest in expectancy effects arose out of Rosenthal's early work on experimenter biases. Rosenthal's interest in experimenter biases began with his dissertation research. While collecting his dissertation data, it occurred to him that he may have been treating his participants in ways that were causing them to confirm his hypotheses, a process that he later labeled *unconscious experimenter bias*. This realization led Rosenthal to study the effects of unconscious experimenter bias effects in the lab. Through this research he was able to show that he could produce the effect reliably, which led him to question how many other experimenters were attaining results that reflected this bias. Rosenthal's findings were important because they suggested that the results reported in scientific journals may be invalid by virtue of having been biased by experimenters' hypotheses. That suggestion alarmed researchers and ultimately led to the

widespread use of procedures designed to reduce experimenter biases such as blind and double-blind procedures (Rosenthal, 2002).

Rosenthal's findings on experimenter biases were also important because they raised the possibility that the influence of expectancies on behavior might generalize beyond subjects' behavior in the lab to other contexts. That possibility sparked hundreds of studies designed to examine the influence of expectancies on behavior and perceptions. The largest and most recognized group of studies within this literature focused on teacher expectancy effects. One of the classic studies from this literature is the Pygmalion study (Rosenthal & Jacobson, 1968). The Pygmalion study illustrates how expectancies can result in both self-fulfilling prophecies and perceptual biases.

In this study, elementary school teachers were led to believe that Harvard researchers had administered a new IQ test to students that could identify intellectual blooming. The researchers then informed teachers which of their students had been identified by this test as one of these bloomers – students who would have substantial gains in their IQs over the course of the academic year. In reality, however, there was no special test to measure intellectual blooming. Students had simply been administered a typical IQ test, and random assignment determined which students would be labeled as the bloomers and which would not, with the latter group of students serving as controls.

Because the students had been randomly assigned to these conditions, there was no real difference in their likelihood of having large IQ gains. The only difference between the bloomers and control students was their teachers' expectancies about them. Accordingly, any difference between their IQs at the end of the school year could only be due to their teachers' self-fulfilling effects, which is exactly what the study showed. Students who were labeled as bloomers had significantly greater gains in their IQs compared with control students. Furthermore, consistent with

a perceptual bias, teachers described the students who had been labeled as bloomers more favorably than they described the control students. They perceived the bloomers to be more interesting, curious, appealing, autonomous, and better adjusted. These general patterns, showing self-fulfilling prophecy and perceptual bias effects, have been replicated in a variety of settings and with varied expectancies and outcomes (see Rosenthal, 2002; Rosenthal & Rubin, 1978; Snyder & Stukas, 1999, for reviews).

Chapter II: The Power of Expectancy Effects

It is well-established that perceivers' false expectancies can shape both targets' behavior through self-fulfilling prophecies and bias perceivers' impressions of targets' behavior through perceptual biases. Although these effects have traditionally been characterized as powerful (Darley & Fazio, 1980; E.E. Jones, 1986; Fiske & Taylor, 1984; Merton, 1948; Miller & Turnbull, 1986; Rosenthal & Jacobson, 1968; Snyder, 1984), empirical research has not supported this claim (Jussim, 1991; Jussim & Eccles, 1992; Jussim, Eccles & Madon, 1996; Madon, Jussim & Eccles, 1997). Naturalistic and experimental research provide convergent evidence that expectancy effects tend to be modest in magnitude, with effects sizes ranging from .1 to .3 in terms of standardized correlation coefficients (Jussim, 1991).

The magnitude of these effects suggests that expectancies do not typically bring about large changes in targets' behaviors or in perceivers' impressions of targets' behavior. However, these reported effect sizes are averages that do not take into consideration the possibility that a variety of factors and processes may render expectancy effects more powerful. The following sections discuss different factors and processes that have been shown to influence the power of self-fulfilling prophecy and perceptual bias effects.

Target Characteristics

One general factor that has been shown to influence expectancy effects is target characteristics. Target characteristics refer to targets' personal attributes such as their personality traits, self-views, social groups, and physical appearance. Research addressing target characteristics has focused exclusively on the self-fulfilling prophecy process with a particular emphasis on the moderating effects of targets' self-concepts and social group membership. This research has shown that self-fulfilling prophecy effects are more powerful among targets with unclear self-concepts. For

example, Swann and Ely (1984) showed that when targets held unclear self-concepts they confirmed perceivers' false expectancies more than targets who held clear self-concepts. This pattern was strongest when perceivers were certain about the validity of their expectancies.

Self-fulfilling prophecy effects are also more powerful among targets who belong to stigmatized social groups. For example, Jussim and colleagues (Jussim et al., 1996; Madon et al., 1997; Smith, Jussim, Eccles, VanNoy, Madon, Palumbo, 1998) showed that, within the context of the classroom, self-fulfilling prophecy effects were stronger among minorities, students from lower social class backgrounds, students with histories of poor academic performance, students who were tracked into low ability groups within classes, and students with multiple vulnerabilities (e.g., lower social class students with histories of poor academic performance). In fact, the magnitude of some of these relations represent the most powerful self-fulfilling prophecy effects ever observed in naturalistic research with effect sizes reaching as high as .63 in terms of standardized regression coefficients. The above findings provide evidence that the way targets view themselves and the social groups to which they belong can increase their susceptibility to confirming perceivers' false expectancies about them.

Although there currently does not exist any empirical research addressing whether target characteristics also influence the power of perceptual bias effects, such a possibility seems likely. Targets with unclear self-concepts may be less likely than targets with clear self-concepts to engage in self-verification processes when interacting with perceivers. If targets with unclear self-concepts refrain from exhibiting behaviors that directly disconfirm the false expectancies that perceivers hold about them, then perceivers may assume that their expectancies have been confirmed, even in cases where they have not been. Targets' membership in stigmatized social groups may also produce relatively powerful perceptual bias effects. Perceivers may be more likely to believe that their false

expectancies have been confirmed when those beliefs are derived from social stereotypes, in part, because social stereotypes tend to be consensually shared with a given culture (Willard, 2006).

Situational and Motivational Factors

Situational and motivational factors can also influence the power of expectancy effects. Situational factors are environmental variables such as power status differentials, time constraints, and the presence of others. Situational factors often interact with individuals' behavior and make the occurrence of expectancy effects more likely and more pronounced compared to contexts in which these situational factors are not present. For example, research has shown that expectancy effects are stronger when perceivers interact longer with targets, when perceivers have a higher status than targets, and when perceivers are aware of their social power relative to targets (Copeland, 1994; Harris, Lightner, & Manolis, 1998; Snyder, 1992; Snyder & Haugen, 1994, 1995; Swann & Ely, 1984).

Motivational factors are the goals and motives that drive people's behavior. Motivational factors are internal to an individual, but can be influenced by situational factors. For example, a person may be more highly motivated to arrive at an accurate impression of another person if the two people's outcomes are dependent because of situational constraints (Fiske & Neuberg, 1990; Rudman, 1998). Research examining the moderating influence of motivational factors on expectancy effects has shown that such effects are stronger when perceivers are motivated to establish a stable impression of a target (Snyder, 1992; Snyder & Haugen, 1994, 1995), when perceivers more strongly believe in the validity of their expectancies (Swann & Ely, 1984), and when perceivers are motivated to confirm their false expectancies because of an incentive (Cooper & Hazelrigg, 1988). Expectancy effects are less likely to happen, in contrast, when perceivers are motivated to befriend targets (Neuberg, Judice, Virdin, & Carrillo, 1993; Snyder & Copeland, 1990),

perceivers are motivated to either have smooth interactions with targets (Snyder & Haugen, 1994) or to form accurate impressions of targets (Neuberg, 1989), when an interaction involves perceivers disclosing information about themselves to targets (Mobilio & Snyder, 1996), and when targets are motivated to find out information about perceivers (Snyder & Haugen, 1995).

Expectancy Valence

A third factor that can influence the power of expectancy effects is the favorableness of the false expectancy. Favorable false expectancies are ones in which perceivers view targets more positively than is warranted. Unfavorable false expectancies, in contrast, are ones in which perceivers view targets more negatively than is warranted. Research investigating the differential effects of favorable and unfavorable expectancies has tended to focus on self-fulfilling prophecy effects and has typically emphasized the greater power of unfavorable expectancies to shape behavior. For example, self-fulfilling prophecies have historically been linked to social problems by virtue of their tendency to contribute to (rather than to ameliorate) social inequalities (Klein & Snyder, 2003); to undermine (rather than to enhance) the academic achievement of minority students (Rosenthal & Jacobson, 1968); and to fuel (rather than to reduce) discrimination and discriminatory policies (Merton, 1948). Although such perspectives suggest that self-fulfilling prophecies harm targets more than they help them, few empirical studies have tested this hypothesis and the few that have yielded mixed results (for reviews, see Jussim, Palumbo, Chatman, Madon, & Smith, 2000; Snyder & Stukas, 1999).

For example, consistent with the idea that unfavorable expectancies produced stronger self-fulfilling prophecy effects than favorable ones, Alvidrez and Weinstein (1999) showed that teachers' expectancies predicted students' subsequent GPAs more strongly when teachers underestimated students' intelligence than when they overestimated students' intelligence (see also Babad et al.,

1982; Sutherland & Goldschmid, 1974). However, other research has shown the opposite pattern – that favorable expectancies produced more powerful self-fulfilling prophecy effects than unfavorable ones. For example, Madon and colleagues (1997) showed that teachers' expectancies predicted students' standardized math test scores more strongly when they overestimated students' math performance than when they underestimated students' math performance (also see Madon, Guyll, Spoth, Cross, & Hilbert, 2003; Madon, Guyll, Spoth, & Willard, 2004). These mixed findings highlight the need for additional research to investigate the differential self-fulfilling effects of favorable versus unfavorable expectancies.

There are no specific empirical investigations that address whether favorable or unfavorable expectancies are more likely to produce perceptual biases. However, social psychological research suggests that individuals tend to be more influenced by negative information compared to positive information (for review, see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). People attend more to negative information than to positive information (Abele, 1985; Graziano, Brothern & Berscheid, 1980), regard negative information as more useful than positive information (Kanouse & Hanson, 1971), and weigh costs more heavily than rewards when making important decisions (Kahneman & Tversky, 1982). These findings suggest that perceivers may be more likely to believe that their false expectancies have been confirmed when those expectancies are unfavorable versus favorable.

Accumulation of Expectancy Effects

Another way that expectancy effects can become powerful is if they accumulate. Accumulation occurs when the expectancy effects elicited by multiple false expectancies combine to create a greater total expectancy effect than would have occurred had only one false expectancy elicited the effect (Jussim, Eccles, Madon, 1996; Madon et al., 2004). The social psychological

literature has long speculated that the accumulation of expectancy effects can generate and perpetuate social inequalities (see Jussim et al., 1996; Klein & Snyder, 2003; Snyder, 1992; Snyder & Stukas, 1999, for reviews). According to this perspective, the accumulation of expectancy effects puts targets on trajectories that serve to benefit some while harming others, thereby widening the gap between advantaged and disadvantaged individuals and groups (see Klein & Snyder, 2003; Jussim et al., 1996; Snyder & Stukas, 1999, for reviews; see Steele, 1997 for a related process). The literature has identified two general classes of accumulation – accumulation that occurs over time and accumulation that occurs across perceivers. The following sections discuss these two classes of accumulation in greater detail and review the relevant literature.

Accumulation over time. The accumulation of expectancy effects over time is a process whereby the magnitude of an individual perceiver's expectancy effect becomes increasingly stronger as time passes. The literature addressing the accumulation of expectancy effects over time includes four empirical studies, all of which focused exclusively on the self-fulfilling prophecy process. Each of these studies examined the accumulation of self-fulfilling prophecy effects over time in the naturalistic environment. Three focused on the cumulative self-fulfilling effects of teachers' expectations on their students' achievement over time (Rosenthal & Jacobson, 1968; Smith, Jussim & Eccles, 1999; West & Anderson, 1976) and one focused on the cumulative self-fulfilling effects of mothers' beliefs on their children's alcohol use over time (Madon, Willard, Guyll, Trudeau, Spoth, 2006). The findings of these studies were somewhat mixed in that some found evidence of accumulation (Madon et al., 2006; Rosenthal & Jacobson, 1968) whereas others did not (Smith et al., 1999; West & Anderson, 1976). However, one clear pattern did emerge from these studies: Self-fulfilling prophecy effects only accumulated when perceivers and targets interacted regularly. For example, Rosenthal and Jacobson (1968) found that teachers' self-fulfilling effects on students' IQ

accumulated within a single school year during which time teachers and students interacted on a daily basis. By contrast, self-fulfilling prophecy effects never accumulated when perceivers and targets did not interact regularly. For example, Rosenthal and Jacobson (1968) found that the tendency for teachers' self-fulfilling effects to accumulate over time ceased after students switched teachers to advance to the next grade level.

No research has tested whether perceptual biases accumulate over time. However, people routinely engage in a variety of information processing biases that could potentially produce cumulative perceptual bias effects. For example, people have a tendency to attend to information that confirms their expectancies more than to information that disconfirms their expectancies and to have better memory for expectancy consistent information (Snyder, Campbell, & Preston, 1982; Snyder & White, 1981; Zuckerman, Knee, Hodgins, & Miyake, 1995). Through biases such as these, people may become increasingly confident in the validity of their initial expectancies over time, thus leading to the accumulation of perceptual bias effects over time.

Accumulation across perceivers. The accumulation of expectancy effects across perceivers is a process whereby the expectancy effects elicited by multiple perceivers' false expectancies is larger in combination than the expectancy effect elicited by each perceiver's expectancy alone (Jussim, Eccles, Madon, 1996; Madon et al., 2004). The literature examining the accumulation of expectancy effects across perceivers includes two empirical studies. One study examined the accumulation of self-fulfilling prophecy effects across perceivers, whereas the other examined the accumulation of perceptual bias effects across perceivers.

The study that examined the accumulation of self-fulfilling prophecy effects across perceivers did so in the context of the family, examining whether mothers' and fathers' expectancies had cumulative self-fulfilling effects on their children's subsequent alcohol use. Participating

families answered questionnaire items that assessed parents' expectancies about their children's alcohol use, children's actual alcohol use, plus a variety of background predictors of adolescent alcohol use (e.g., self-assessed likelihood of drinking, social class, perception of friends' alcohol use, etc.). Twelve months later children's alcohol use was re-assessed.

As is typical of correlational studies on self-fulfilling prophecies, this study operationalized self-fulfilling prophecies as the unique relation between parents' expectancies and children's subsequent alcohol use after controlling for the background predictors of adolescent alcohol use. The results of this study supported the hypothesis that self-fulfilling prophecy effects accumulated across parents, but only when mothers' and fathers' expectancies were unfavorable. Parents elicited the greatest degree of confirmatory behavior from their children when both mothers and fathers overestimated their children's risk for alcohol use. Self-fulfilling prophecy effects were not found to accumulate across mothers and fathers when they both underestimated their children's risk for alcohol use.

The findings of Madon et al. (2004) are important because they provide the first empirical evidence that the self-fulfilling effects of different perceivers can accumulate, thereby supporting years of theoretical speculation regarding this possibility (E.E. Jones, 1986; Merton, 1948). They are also important because they suggest that there is an asymmetry in the accumulation of self-fulfilling prophecy effects with the effects caused by unfavorable expectancies accumulating across perceivers to a greater extent than the effects caused by favorable expectancies.

However, because this study used correlational data, it also suffers from an important limitation. Correlational studies do not provide as strong a basis for causal inference as do experiments. With a correlational design one cannot determine whether the predictor variable(s) caused changes in the dependent variable, the dependent variable caused changes in the predictor

variable(s), or a third variable caused changes in both the predictor and dependent variables. Although longitudinal designs, such as the one used by Madon et al. (2004), do rule out reverse causal relations between the predictor and dependent variables, they do not rule out the possibility that a third, unmeasured variable was responsible for changes in both the predictor and dependent variables. The potential omission of an unmeasured variable represents an accuracy explanation for relations between perceivers' expectancies and targets' subsequent behaviors. With respect to Madon et al.'s findings, for example, the potential omission of an unmeasured variable raises the possibility that parents' expectancies were most accurate when both mothers and fathers overestimated their children's risk for alcohol use. Although Madon et al. (2004) made a strong argument against an accuracy interpretation of their findings, the only way to definitively rule out such an explanation is to perform an experiment in which perceivers' expectancies are manipulated. There does not currently exist any experimental evidence that self-fulfilling prophecy effects accumulate across perceivers, thereby highlighting the need for an experimental replication of Madon et al.'s (2004) findings.

Madon et al.'s (2004) research focused on *synergistic accumulation*. Synergistic accumulation is a multiplicative process whereby the self-fulfilling effect of one perceiver's expectancy is rendered more powerful when another perceiver's expectancy is similar in terms of its favorableness (e.g., also unfavorable). A second, distinct kind of cumulative self-fulfilling prophecy effect that has been discussed in the literature is *concurrent accumulation*. Concurrent accumulation is an additive process whereby the total self-fulfilling effect of two or more perceivers is larger in combination than each is by itself. For example, two teachers each of whom hold a false and unfavorable expectancy about a student would, according to the process of concurrent accumulation, elicit a greater degree of confirmatory behavior from the student in combination than would either

teacher individually. There currently does not exist any research showing that self-fulfilling prophecy effects accumulate concurrently, making this an important process for future research to study.

The literature also includes one study that examined the accumulation of perceptual bias effects across perceivers. Willard (2006) examined this process in the context of an experiment in which perceivers' expectancies about a target's hostility were experimentally manipulated. In this study, participants were assigned to three-person groups in which two participants played the role of perceivers and one played the role of the target. Each three-person group was randomly assigned to one of three expectancy conditions: (1) a double unfavorable expectancy condition in which both perceivers were led to believe that the target was hostile; (2) a single unfavorable expectancy condition in which one perceiver was led to believe that the target was hostile whereas the other perceiver was not; and (3) a no expectancy condition in which neither perceiver was led to believe that the target was hostile. Following the induction of the expectancy, perceivers engaged in a discussion task with the target. Following the discussion task, perceivers judged the target's hostility, which constituted the primary dependent variable.

Analyses showed that perceivers judged the target as significantly more hostile when both perceivers were induced with an unfavorable expectancy than when only one was or neither were. This finding demonstrated that perceptual biases did in fact accumulate across perceivers. Additional analyses revealed that the obtained pattern of means supported concurrent, but not synergistic, accumulation effects. These findings held true even though the target's reported level of hostility before the interaction, and their actual level of hostility exhibited during the interaction (as coded by blind observers), were controlled for in the analyses.

Willard's (2006) findings are important because they speak to the general power of expectancies to bias perceptions. As noted previously, perceptual bias effects are usually modest. However, those effects reflect the biases of individual perceivers and, therefore, do not account for the possibility that perceptual bias effects may be strengthened when multiple perceivers each hold similar expectancies about a given target. Accordingly, Willard's findings suggest that expectancies may have stronger than average effects on perceptions in social situations involving multiple perceivers.

Willard's (2006) findings also raise an important question about the role of an expectancy's favorableness in the accumulation of perceptual bias effects. Willard focused exclusively on expectancies regarding hostility, which is generally considered an unfavorable personality characteristic. Such a focus makes sense in light of the fact that unfavorable expectancies have been implicated in the creation and perpetuation of social problems more so than favorable expectancies (Klein & Snyder, 2003; Merton, 1948) and because the only other study examining the accumulation of expectancy effects found that unfavorable expectancies had cumulative self-fulfilling effects whereas favorable expectancies did not. However, because Willard did not manipulate the favorableness of perceivers' expectancies, it is not currently known whether unfavorable or favorable expectancies are more likely to produce cumulative perceptual bias effects.

Chapter III: Conceptual Overview and Hypotheses

Conceptual Overview

The current experiment was designed to address two main goals: 1) to examine if expectancy effects can become more powerful by accumulating across perceivers and 2) to examine whether favorable or unfavorable expectancies produce more powerful cumulative expectancy effects. These goals were addressed with respect to both concurrent and synergistic accumulation. The procedures that were used were adapted from a procedure developed by Snyder and Swann (1978).

In Snyder and Swann's (1978) study, participants were paired to create dyads in which one participant was assigned the role of the perceiver and the other was assigned the role of the target. Perceivers were given a fictitious description of the target that served to manipulate their expectancies about the targets' hostility. Half of the perceivers received a description that led them to believe that the target was hostile: "loved contact sports" and that he was "insensitive", "self-assertive", "competitive", "aggressive", and "cruel". The other half received a description that led them to believe that the target was friendly: "enjoyed poetry and sailing" and that he was "submissive", "sensitive", "passive", "kind", and "cooperative" (p. 153).

Following the induction of the expectancy, dyads competed in a reaction time task. The reaction time task consisted of eight blocks with three trials per block. Thus, there were 24 total trials. During these trials, perceivers and targets were given a noise weapon to use strategically against their opponent. The noise weapon was an electronic device that administered an aversive noise through headphones. Participants selected the intensity of the noise that was to be administered to their opponent at the start of each block. The perceiver and target alternated using the noise weapon, with the perceiver always using the noise weapon first in this alternating sequence.

Snyder and Swann (1978) predicted that perceivers induced with a hostile expectancy would administer a higher noise level to their opponent than perceivers induced with a non-hostile expectancy. It was also predicted that targets would respond to this treatment in an expectancy consistent way. That is, targets were predicted to select higher noise levels to administer back to perceivers when perceivers expected them to be hostile than when they did not. Consistent with their predictions, results showed that perceivers who were induced with a hostile expectancy administered higher noise levels across the reaction time trials than did perceivers who were induced with a friendly expectancy. Furthermore, consistent with a self-fulfilling prophecy, targets who were expected to be hostile by perceivers administered higher noise levels back to perceivers than did targets who were not expected to be hostile.

Experiment Overview

For the current experiment, Snyder and Swann's (1978) procedure was modified in two key respects so as to address the goals of the research. First, I included multiple perceivers, rather than only one. Participants were grouped into triads in which two participants were randomly assigned to play the role of a perceiver and one was randomly assigned to play the role of a target. This modification enabled me to test whether self-fulfilling prophecy and perceptual bias effects accumulated across perceivers. Second, I modified the expectancies that Snyder and Swann used so that it was either unfavorable (hostile) or favorable (friendly) and also added a no expectancy condition. This resulted in three expectancy conditions (unfavorable, favorable, and no expectancy) that enabled me to test whether the favorableness of perceivers' expectancies moderated the power of cumulative self-fulfilling prophecy and perceptual bias effects. I tested these processes with two dependent variables. I used the average noise level selected by the target as the dependent variable to test for processes relevant to self-fulfilling prophecies and I used perceivers' impressions of the

target's hostility (which were assessed after the reaction time task) to test for processes relevant to perceptual biases.

Hypotheses

The proposed research was designed to test six hypotheses – three pertaining to self-fulfilling prophecies and three pertaining to perceptual biases.

Self-fulfilling prophecies: Concurrent accumulation hypothesis. According to the concurrent accumulation hypothesis, the noise level administered by targets was hypothesized to be a) higher (unfavorable expectancies) or lower (favorable expectancies) in the double versus the single expectancy conditions, and b) higher (unfavorable expectancy) or lower (favorable expectancy) in the single versus no expectancy conditions (Figure 1).

Self-fulfilling prophecies: Synergistic accumulation hypothesis. According to the synergistic accumulation hypothesis, the difference between the noise level administered by targets in the single versus double expectancy conditions was expected to be larger than the difference between the noise level administered by targets in the no versus single expectancy conditions. That is, the noise level administered by targets was predicted to become increasingly higher as the number of perceivers induced with an unfavorable expectancy increased from 0 to 1 to 2 and was expected to become increasingly lower as the number of perceivers induced with a favorable expectancy increased from 0 to 1 to 2 (Figure 2).

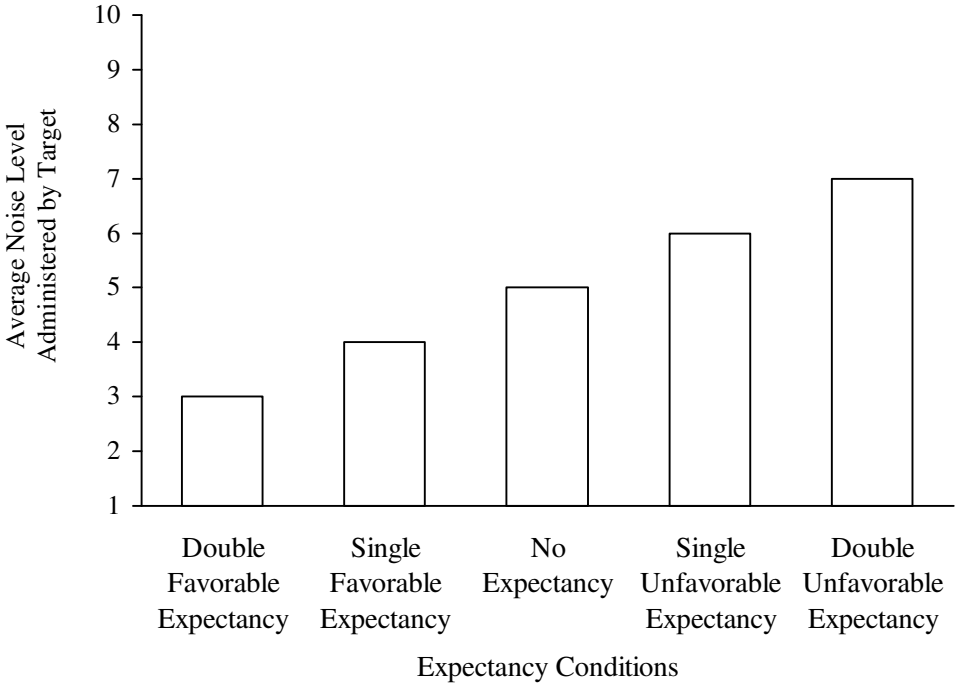

Figure 1. Predicted pattern showing concurrent accumulation of self-fulfilling prophecies across expectancies.

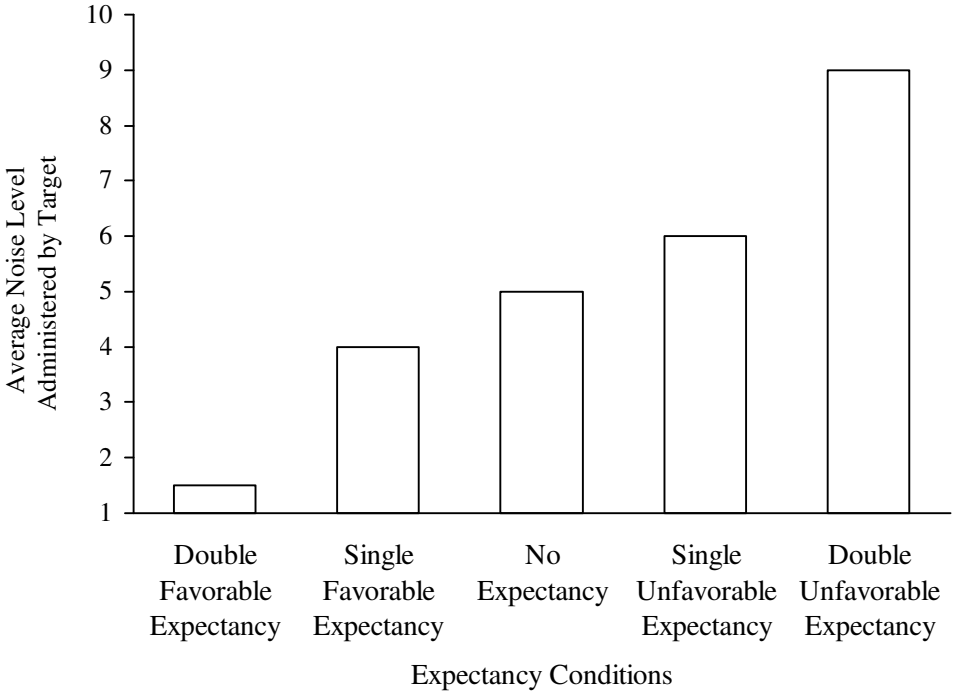

Figure 2. Predicted pattern showing synergistic accumulation of self-fulfilling prophecies across expectancies.

Self-fulfilling prophecies: Expectancy favorableness as a moderator of cumulative self-fulfilling effects. According to the hypothesis that unfavorable expectancies have stronger cumulative self-fulfilling effects than favorable ones, the difference between the noise level administered by targets in the single versus double expectancy conditions was expected to be larger when perceivers were induced with unfavorable expectancies compared to when they were induced with favorable expectancies (Figure 3). Alternatively, according to the hypothesis that favorable expectancies have stronger cumulative self-fulfilling effects than unfavorable ones, the difference between the noise level administered by targets in the single versus double expectancy conditions was expected to be larger when perceivers were induced with favorable expectancies compared to when they were induced with unfavorable expectancies (Figure 4).

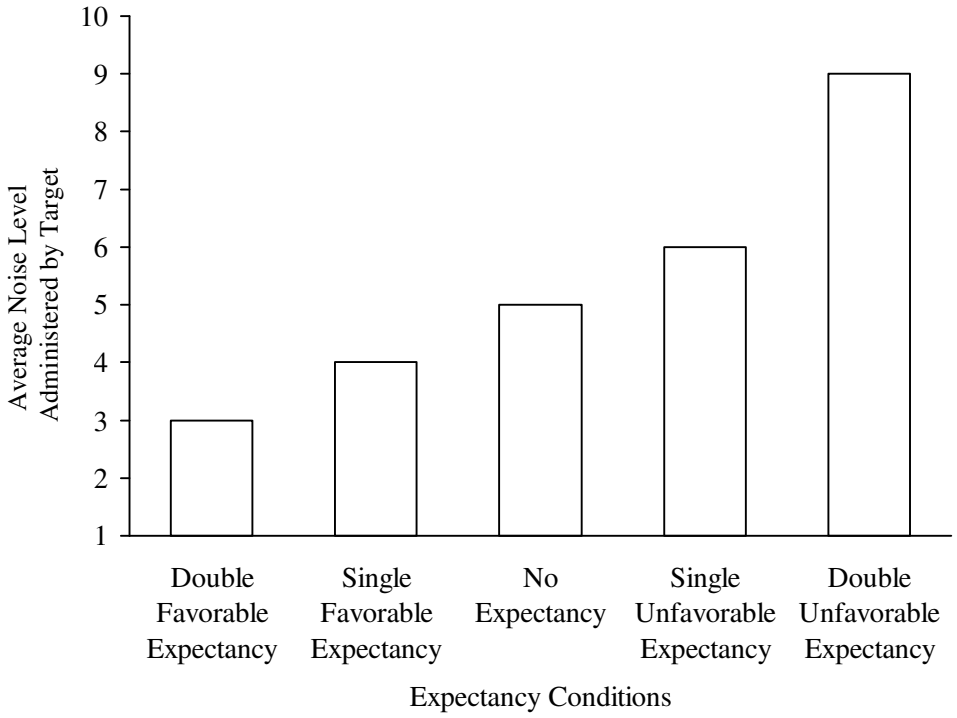

Figure 3. Predicted pattern showing unfavorable expectancies as a more powerful moderator of accumulative self-fulfilling effects across perceivers compared to favorable expectancies.

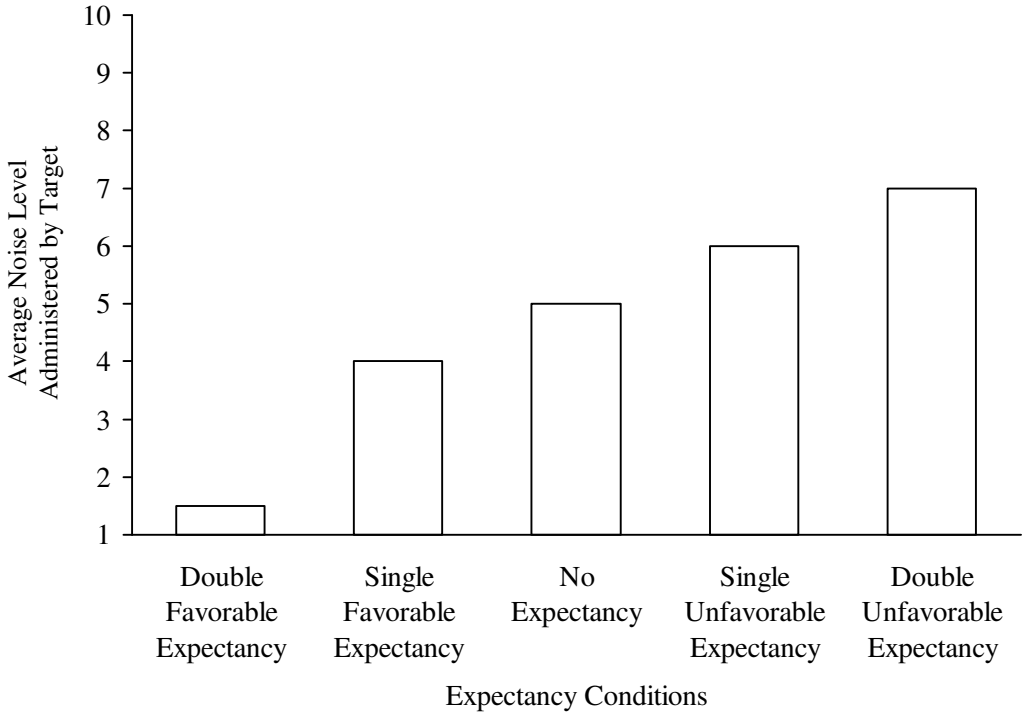

Figure 4. Predicted pattern showing favorable expectancies as a more powerful moderator of accumulative self-fulfilling effects across perceivers compared to unfavorable expectancies.

Perceptual biases: Concurrent accumulation hypothesis. According to the concurrent accumulation hypothesis, perceivers' impressions of targets' hostility was hypothesized to be a) more (unfavorable expectancies) or less (favorable expectancies) hostile in the double versus the single expectancy conditions and b) more (unfavorable expectancy) or less (favorable expectancy) hostile in the single versus no expectancy conditions (Figure 5).

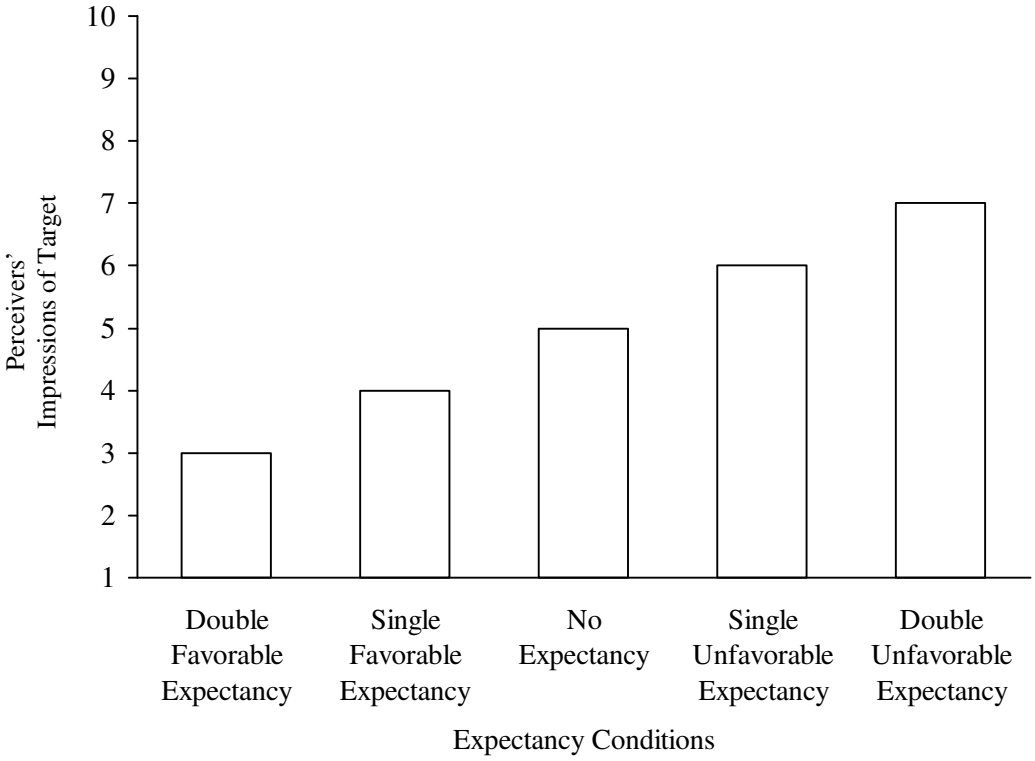

Figure 5. Predicted pattern showing concurrent accumulation of perceptual biases across expectancies.

Perceptual biases: Synergistic accumulation hypothesis. According to the synergistic accumulation hypothesis, the difference between perceivers' impressions of targets' hostility in the single versus double expectancy conditions was expected to be larger than the difference between perceivers' impressions of targets' hostility in the no versus single expectancy conditions. That is, perceivers' impressions of targets was predicted to become increasingly more hostile as the number of perceivers induced with an unfavorable expectancy increased from 0 to 1 to 2 and was expected to become increasingly less hostile as the number of perceivers induced with a favorable expectancy increased from 0 to 1 to 2 (Figure 6).

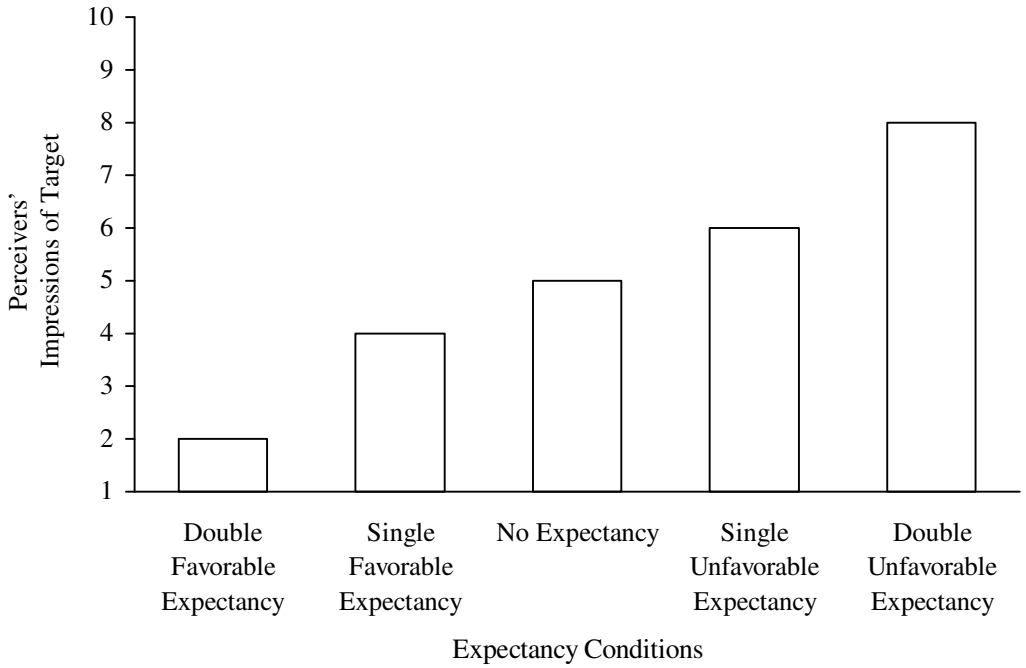

Figure 6. Predicted pattern showing synergistic accumulation of perceptual biases across expectancies.

Perceptual biases: Expectancy favorableness as a moderator of cumulative perceptual bias effects. According to the hypothesis that unfavorable expectancies produce stronger cumulative perceptual bias effects than favorable ones, the difference between perceivers' impressions of targets' hostility in the single versus double expectancy conditions was expected to be larger when perceivers were induced with unfavorable expectancies compared to when they were induced with favorable expectancies (Figure 7). Alternatively, according to the hypothesis that favorable expectancies have stronger cumulative perceptual bias effects than unfavorable ones, the difference between perceivers' impressions of targets' hostility in the single versus double expectancy conditions was expected to be larger when perceivers were induced with favorable expectancies compared to when they were induced with unfavorable expectancies (Figure 8).

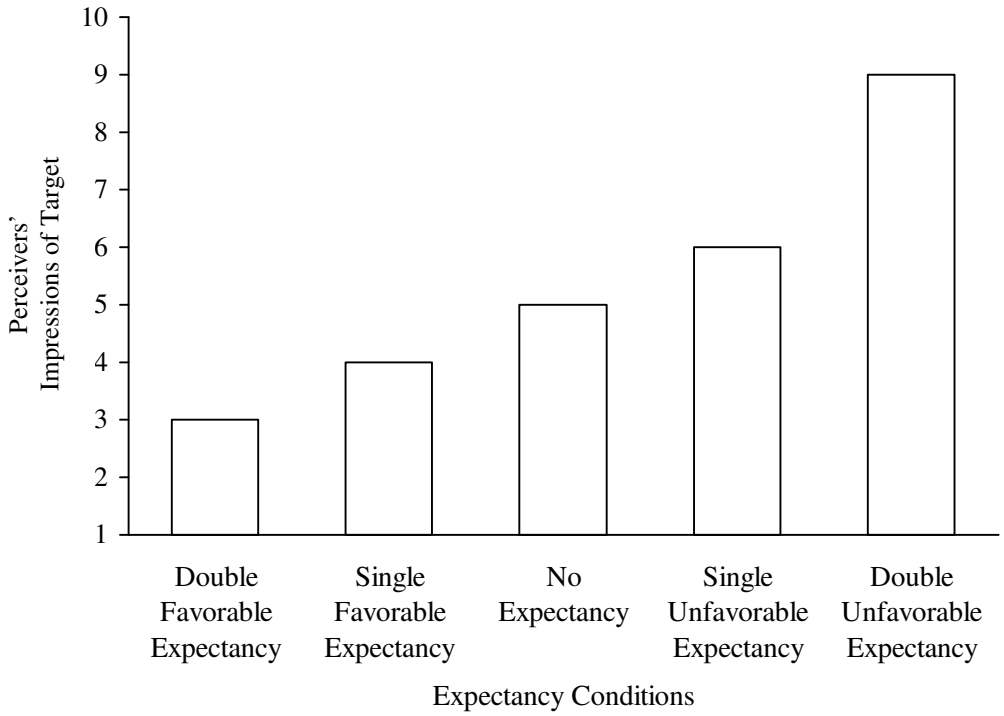

Figure 7. Predicted pattern showing unfavorable expectancies as a more powerful moderator of accumulative perceptual bias effects across perceivers compared to favorable expectancies.

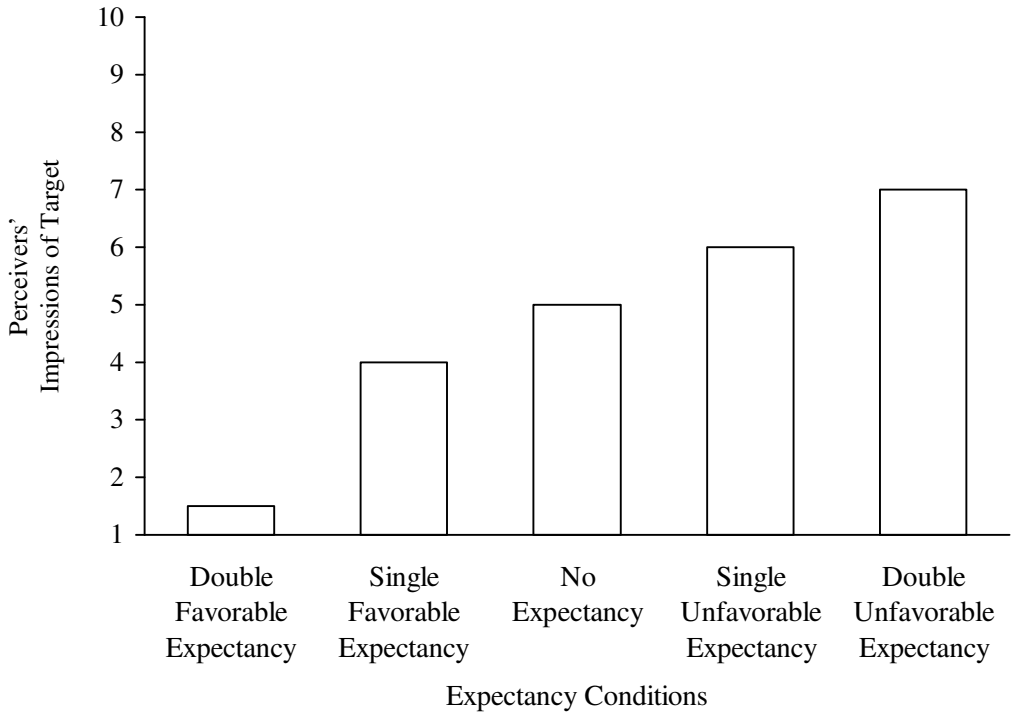

Figure 8. Predicted pattern showing unfavorable expectancies as a more powerful moderator of accumulative perceptual bias effects across perceivers compared to unfavorable expectancies.

Chapter IV: Methods

Participants

There were 774 participants who were assigned to groups of three (N = 258 groups), referred to subsequently as triads. There were 113 triads who were removed from the analyses because of suspicion rates, leaving a sample of 145 triads. All of the participants who were suspicious indicated that they (a) did not believe they were playing the reaction time task against another participant (n = 81 participants), (b) did not believe their opponent wrote the description given to them (n = 24 participants), (3) or a combination of the two (n = 35 participants) – these equal more than 113 triads, because some of the participants were in the same triad. These high suspicion rates may reflect the fact that another psychology experiment (conducted during the same semesters that I collected data for my thesis) initially led participants to believe that they would compete against another participant only to inform them later that they had actually competed against a computer. Although I do not know how many of my participants had participated in this other experiment prior to participating in mine, it is possible that a substantial number of them did, thereby explaining at least some of the suspicion rates encountered in my research. All participants in my research were males between the ages of 17 and 35 (M = 19.68) who received research credit in their psychology class in exchange for their participation.

Design

Two participants in each triad were randomly assigned to play the role of a perceiver and one was randomly assigned to play the role of the target. Each triad was randomly assigned to one of five conditions in a 2 (Expectancy: Single vs. Double) x 2 (Favorableness: Unfavorable vs. Favorable) + 1 (No Expectancy) between-subjects experimental design (Figure 9). Note that it made no sense to manipulate expectancy favorableness in the no expectancy condition because there was

no expectancy that could vary in terms of its favorableness. In the single expectancy conditions, one perceiver was given a bogus description of the target whereas the other was not. In the double expectancy conditions, both perceivers were given a bogus description of the target. In the unfavorable expectancy conditions, the bogus description depicted the target as having a hostile personality. In the favorable expectancy conditions, the bogus description depicted the target as having a friendly personality. In the no expectancy condition, neither perceiver was given a bogus description of the target.

	Single expectation	Double expectation		No expectation
Unfavorable expectation			+	
Favorable expectation				

Figure 9. 2 (Expectancy: Single vs. Double) x 2 (Favorableness: Unfavorable vs. Favorable) + 1 (No Expectancy) between-subjects experimental design

Materials

Bogus descriptions. Perceivers' expectancies about the target's personality were manipulated with a hand-written description supposedly written by the target. There were two versions of the description. One version described the target as hostile, competitive, and aggressive (Appendix B). This description was given to perceivers in the unfavorable expectancy conditions. The other version described the target as kind, considerate, and friendly (Appendix C). This description was given to perceivers in the favorable expectancy conditions. Participants in the no expectancy condition did not receive a description of the target.

Reaction time task. The reaction time task consisted of 8 blocks, each consisting of 3 trials to create a total of 24 trials in all. The reaction time task was programmed for use on personal

computers. Prior to the start of the first block, participants received instructions on their computer screens. These instructions informed participants that during the trials, they would compete against an opponent and that each side would be given a noise weapon on an alternating basis to use strategically. Participants selected the intensity of the noise that they wished to administer to their opponent at the start of each block. Targets received the average noise level selected by the two perceivers. For example, if one perceiver chose a noise level of five and the other perceiver chose a noise level of seven, the target received a noise level of six. The two perceivers each received the noise level selected by the target. There were ten noise levels from which participants could choose that ranged from 20 to 110 decibels. Participants sampled the middle level before they made their first selection. The noise weapon was given to perceivers and targets on an alternating basis with perceivers always using it first.

After participants (either perceivers or the target) selected a noise level to administer, all participants were shown a three second countdown. When the countdown hit zero, the selected noise level was administered to the correct participant(s) (either the perceivers or the target) and remained present until the participant depressed the space bar in response to a prompt that was displayed on their computer screens. The prompt appeared one second after the noise was administered. As soon as the participant(s) receiving the noise pressed the space bar, the noise terminated. If a participant failed to depress the space bar in response to the prompt, the noise automatically terminated after 2.5 seconds. This sequence was repeated for all 24 trials. The computer was programmed to record the noise levels selected by each participant. The noise levels selected at each block served as the primary dependent variable in all of the analyses that tested for self-fulfilling prophecy effects. Reaction times were not assessed.

Impression assessment. A questionnaire created specifically for this study retrospectively assessed (1) perceivers' impressions of targets' hostility during the reaction time task, (2) targets' impressions of perceivers' hostility during the reaction time task, and (3) participants' impressions of their own hostility during the reaction time task (Appendix D). Participants' impressions of their own hostility during the reaction time task reflected state measures of this personality construct and are subsequently referred to as state hostility. The impression questionnaire was comprised of 30 adjectives. Twelve of these adjectives were fillers (e.g., knowledgeable, traditional, superficial, etc.) whereas the remaining 18 were relevant to hostility (i.e., hostile, kind, friendly, competitive, nice, cooperative, considerate, likeable, warm, submissive, sympathetic, pleasant, polite, sensitive, aggressive, insulting, rude, and cruel). Participants responded to each adjective on a ten point Likert-type scale with anchors of 1 (*not at all)* and 10 *(extremely).* Responses were reverse scored as necessary so that higher scores reflected a more hostile impression. These 18 adjectives demonstrated a high degree of reliability ($\alpha = .94$).

Trait hostility assessment. Targets' trait hostility was measured by the Cook-Medley Hostility Inventory (Cook & Medley, 1954). This inventory is comprised of 50 true-false questions (Appendix E). Participants' scores on the Cook-Medley Hostility Inventory reflected trait measures of this personality construct and are subsequently referred to as trait hostility. Past research has shown that the Cook-Medley Hostility Inventory has good test-retest reliability ($r \geq .84$) over a 4-year span (Shekelle, Gale, Ostfeld, & Paul, 1983) and has good internal consistency reliability for both men ($\alpha = .80$) and women ($\alpha = .84$; Smith & Frohm, 1985). Research has also supported its convergent and discriminant validity (Smith & Frohm, 1985). It correlates more strongly with self-reported anger ($r = .61$) than with either self-reported anxiety ($r = .26$) or depression ($r = .38$). In addition, individuals scoring high on the Cook-Medley Inventory tend to demonstrate more anger

and hostility in provoked situations. The Cook-Medley demonstrated an acceptable degree of reliability in the current sample ($\alpha = .75$).

Procedure

Participants were run in groups of three. Upon arrival, participants were escorted to separate rooms, each equipped with a personal computer. These rooms determined the participant's role as either a perceiver or a target. Room assignment was determined randomly. There were two perceivers and one target at each experimental session. After all participants had arrived, they were brought together to complete the consent forms. This was done to reduce the likelihood that participants would wrongly suspect that there were no other participants present at the experimental session. To reduce the likelihood that participants would naturally form expectations about one another during this phase of the experiment, participants were prevented from talking with each other while completing the consent forms and were escorted back to their separate rooms immediately after having completed the consent forms. Once back in their separate rooms, participants were each given a few minutes to describe their personalities, hobbies, and interests on a sheet of paper provided by the experimenter. These self-descriptions were then collected by the experimenter. The experimenter then informed participants that they would compete in a reaction time task against one another. At this point, the experimenter induced the expectancy in those perceivers who were assigned to one of the expectancy conditions. This was accomplished by giving these perceivers either the unfavorable or the favorable bogus description of the target and leading them to believe that it was the self-description written by their opponent in the reaction time task. The bogus description remained with these perceivers for the duration of the study. No description was given to perceivers in the no expectancy conditions or to targets. Accordingly, these participants were not induced with any expectancy about their opponents.

The experimenter then provided participants with an overview of the reaction time task which included information about the noise weapon. The experimenter then began the reaction time program. The computer program informed perceivers that they had been assigned to use the noise weapon first and informed targets that their opponent had been assigned to use the noise weapon first. When the reaction time task was over, participants completed questionnaires on MediaLab. These questionnaires assessed their impressions of their opponent(s), themselves, and their trait hostility, administered in that order. Participants were then debriefed, thanked for their participation, and dismissed.

Chapter V: Results

Preliminary Analyses

Overview. Three preliminary analyses were conducted. The first preliminary analysis tested the effectiveness of the expectancy manipulation. The second preliminary analysis tested whether perceivers elicited self-fulfilling behavior from targets. The third preliminary analysis tested whether perceivers demonstrated perceptual bias effects. Descriptive statistics and zero-order correlations for all variables used in subsequent analyses are provided in Table 1.

Table 1

Zero-order correlations, means, and standard deviations for all the variables used in the analyses

Variable	(1)	(2)	(3)	(4)	(5)
(1) Trait Hostility					
(2) Perceivers' Impressions of Targets	.06				
(3) Perceiver Noise Blast, Block 1	.11	.08			
(4) Average Target Noise Blast	.21*	.46**	.13*		
(5) Targets' State Hostility	.02	.30**	.00	.49**	
Mean	24.84	5.45	5.43	5.82	5.19
Standard Deviations	6.39	1.61	3.04	2.03	1.59

*$p < .05$. **$p < .01$.

Expectancy manipulation check. As a manipulation check of the expectancy manipulation, a one-way analysis of variance (ANOVA) was performed. This analysis tested for differences in the initial noise blast administered by perceivers across the expectancy conditions. The independent variable was the expectancy induced in perceivers (unfavorable, favorable, or no expectancy). The dependent variable was the initial noise blast administered by perceivers to targets. Each perceiver was treated as an individual unit of analysis for the manipulation check because the initial noise blast

that they selected was chosen individually by each perceiver and occurred before the interaction took place. As such, their initial noise blast was independent from any effect that their partners or the target could have had on their behavior at this point in the experiment.

Results indicated that there was a significant difference between the three expectancy conditions, $F(2, 288) = 4.44$, $p = .01$. Because the ANOVA does not specify between which conditions significant differences exist, three contrasts were conducted to test for differences. The first contrast indicated that perceivers induced with an unfavorable expectancy ($M = 6.20$) administered a louder initial noise blast than perceivers induced with a favorable expectancy ($M = 5.01$), $t(288) = 2.59$, $p = .03$, $d = .31$. The second contrast indicated that perceivers induced with an unfavorable expectancy ($M = 6.20$) administered a louder initial noise blast than perceivers not induced with any expectancy ($M = 5.11$), $t(288) = 2.59$, $p = .03$, $d = .31$. The third contrast indicated that the noise blasts administered by perceivers in the favorable ($M = 5.01$) and no expectancy conditions ($M = 5.11$) did not differ significantly, $t(288) = .23$, $p = .99$, $d = .03$. These results indicate that unfavorable expectancies were effectively induced, but that favorable expectancies were not. The fact that perceivers induced with a favorable expectancy did not administer a significantly lower noise blast than perceivers not induced with any expectancy may reflect a general tendency for unacquainted individuals to expect others to be good natured, friendly, and pleasant at the outset (Wrightsman, 1992). In other words, participants not induced with any expectancy may have assumed that their opponent was a friendly person even though no explicit expectancy was provided. The results from the expectancy manipulation check are shown in Figure 10 and Table 2.

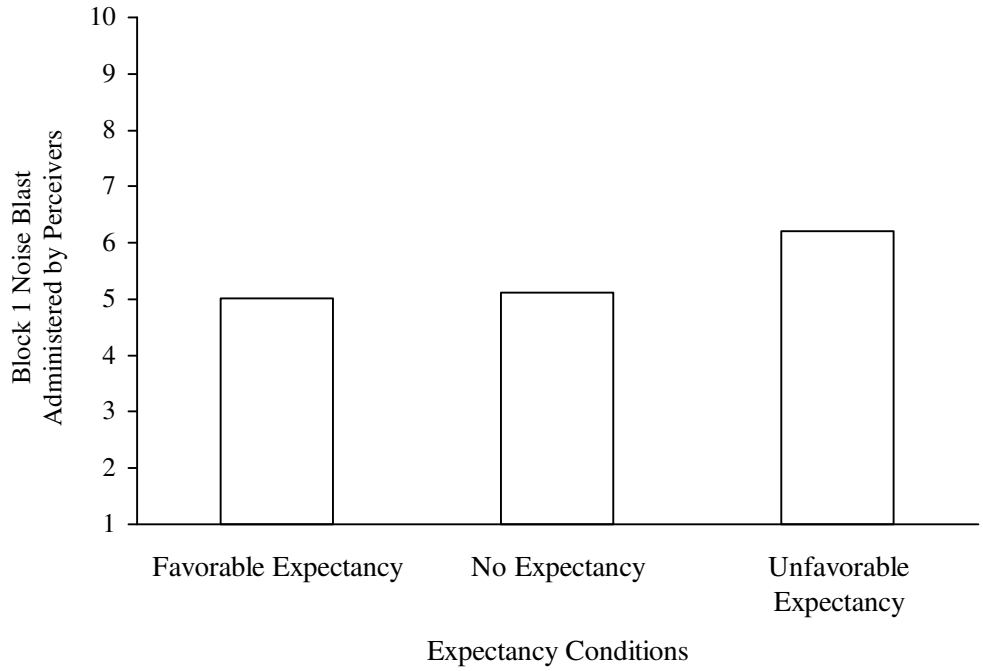

Figure 10. Block 1 noise blast administered by perceivers across the three conditions. Planned contrasts revealed that perceivers induced with an unfavorable expectancy administered louder noise blasts than perceivers induced with a favorable expectancy and perceivers not induced with any expectancy.

Table 2

Results of the individual contrasts between the three expectancy conditions.

Contrast	*df*	*t*	*p*	*d*
Unfavorable Expectancy vs. Favorable Expectancy	288	2.59	.03	.31
Unfavorable Expectancy vs. No Expectancy	288	2.59	.03	.31
Favorable Expectancy vs. No Expectancy	288	.23	.99	.03

Self-fulfilling prophecy. A one-way ANOVA was conducted to determine whether perceivers elicited self-fulfilling behavior from targets. For this analysis, the single and double expectancy conditions were collapsed in the following ways: (1) The single and double unfavorable expectancy conditions were collapsed to create a single condition in which at least one perceiver held an unfavorable expectancy about the target and (2) the single and double favorable expectancy conditions were collapsed to create a single condition in which at least one perceiver held a favorable expectancy about the target. These conditions were then compared to the no expectancy condition where neither perceiver was induced with an expectancy about the target. The dependent variable was the average noise level administered by targets across all four blocks. To control for the influence of participants' actual hostility on perceivers' and targets' behavior during the reaction time task, perceivers' and targets' trait hostility were included as covariates. As reported in Table 3, and illustrated in Figure 11, the results indicated that there were no significant differences between any of the conditions, $F(2, 141) = .20$, $p = .82$, ($M_{Favorable\ Expectancy} = 6.00$; $M_{No\ Expectancy} = 5.91$; $M_{Unfavorable\ Expectancy} = 6.31$). This result indicates that perceivers' expectancies did not elicit self-fulfilling behavior from targets. The same pattern emerged from analyses that examined differences between the expectancy conditions on targets' noise blast at each block individually Fs$(2, 141) < 1.60$, ps $> .21$. Because there was no evidence that either unfavorable or favorable expectancies elicited self-fulfilling prophecy effects, there was no effect that could accumulate across perceivers. Accordingly, no tests for accumulation of self-fulfilling prophecy effects were performed. Figure 12 shows the average noise blast administered by targets across all five conditions.

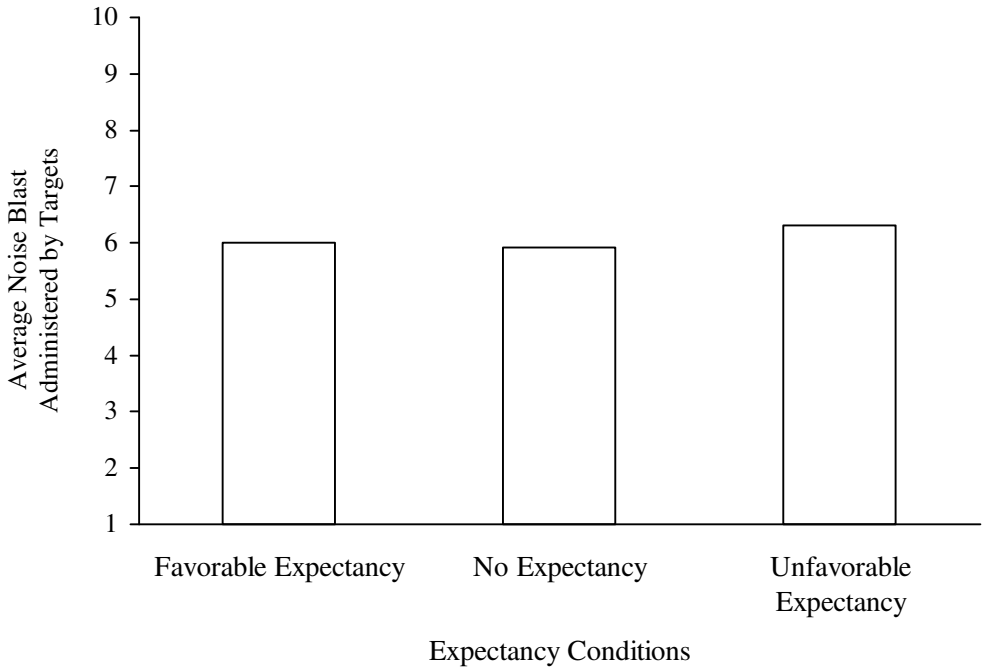

Figure 11. Average blast administered by targets across the three conditions. Planned contrasts revealed no differences between any of the three expectancy conditions.

Table 3

The Influence of Perceivers' Expectancies on Targets' Average Noise Blast

Source	*df*	*F*	*p*
Perceivers' expectancies	2	.20	.82
Error	141	(10.89)	.64

Note. Values enclosed in parentheses represent the mean square error.

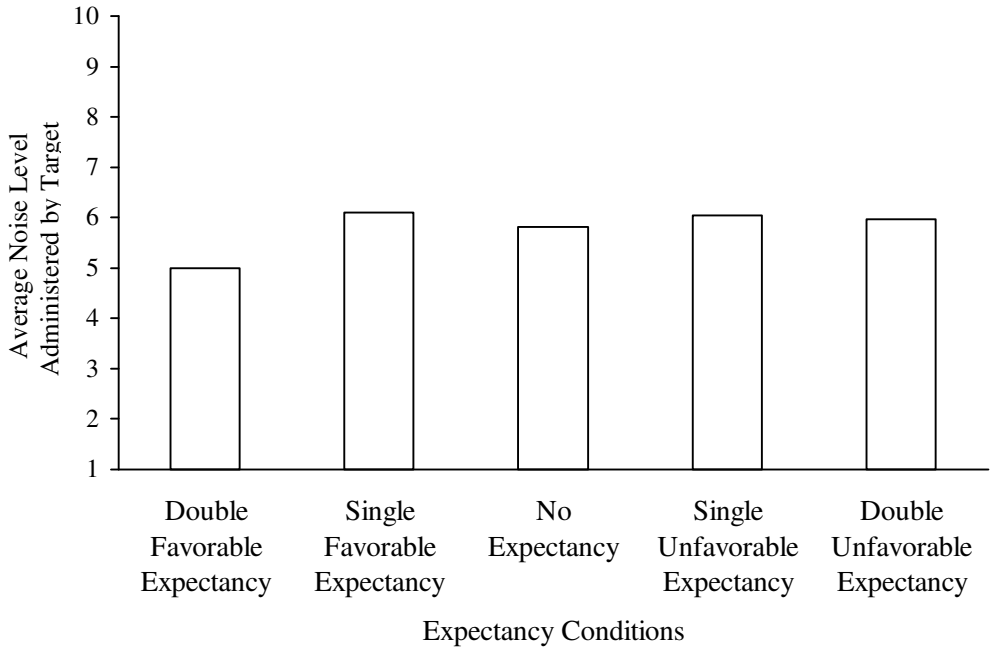

Figure 12. Average blast administered by targets across all five conditions.

Analytic Approach for Perceptual Bias Analyses.

The analytic approach that was used to test for self-fulfilling prophecy effects was not appropriate to test for perceptual bias effects. This is because when testing for self-fulfilling prophecy effects, the dependent variable corresponded to the behavior of the single target included in each triad, whereas, when testing for perceptual bias effects, the dependent variable corresponded to the impression formed by both perceivers included in each triad. In other words, although each triad required the participation of three individuals – two perceivers and one target – the dependent variables may be separated into those associated with the two perceivers and those associated with the single target. To account for these characteristics of the data, the analyses tested for perceptual bias effects with the Actor Partner Interdependence Model (APIM; Kashy & Kenny, 2000), described next.

Actor Partner Interdependence Model. In the current experiment, there were two perceivers in each triad that can be referred to as perceiver A and perceiver B. Because perceiver A and perceiver B participated together within a single triad, they constituted a dyad, and their data are not independent. Therefore, analyses that use perceiver data as the dependent variable must account for this non-independence within each perceiver dyad. Accounting for this non-independence was accomplished by analyzing perceivers' outcome data using the APIM (Kashy & Kenny, 2000), which is specifically designed to account for the dependency between perceivers in dyads by including the dyad as a higher level variable within which individual perceivers are nested. Thus, each triad produced two observations of perceiver outcome data. In one of these two observations, outcome data was provided by perceiver A, and in the other observation outcome data was provided by perceiver B. In the parlance of the APIM, the dyad member who provided the outcome data for a particular observation is called the "actor", and the other dyad member is called the "partner". Thus, in one observation perceiver A was the actor and perceiver B the partner, and in the other observation perceiver B was the actor and perceiver A the partner. Whereas only the actor provided *outcome* data in a particular observation, in both observations, both the actor and the partner provided data regarding their experimental condition and covariates, variables that may be used as predictor variables in the analysis. Figure 13 illustrates an example of the organization of data for perceivers and dyads for analyses in which the outcome variable was based on data provided by the perceivers. Appendix H shows the scheme used to code perceivers' expectancies.

Session	ID	Actor's impression formation	Partner's impression formation	Block 1 noise level administered by actor	Block 1 noise level administered by partner	Average noise level administered by target	Trait hostility of target
1	1	9	3	9	8	7	13
1	2	3	9	8	9	7	13
2	3	8	2	10	5	7	13
2	4	2	8	5	10	7	13

Figure 13. Example of four lines of data organized according to the APIM. The example shows a total of four participants or two different dyads. Notice that a perceiver's data for a specific dyad is under the actor column for one row of the session and under the partner column for the other perceiver's row of data. Also, notice that both perceivers of the dyad have the same values for all variables concerning the target's data because there was only one target in each triad whom both perceivers interacted with.

In order to examine whether perceivers demonstrated perceptual bias effects, the data were analyzed with a SAS PROC MIXED (Littell, Milliken, Stroup, & Wolfinger, 1996) procedure. The independent variable for this analysis was the expectancy condition (i.e., unfavorable, favorable, or no expectancy). The dependent variable for this analysis was perceivers' impressions of the targets' hostility after the reaction time task. These impressions were measured using the 18 items of the impression assessment, with higher scores indicating more hostile impressions. To control for the influence of targets' hostility on perceivers' impressions, targets' state and trait hostility were included as covariates. Similarly, to control for the influence of targets' actual behavior during the reaction time task on perceivers' impressions, targets' average noise blast administered to perceivers

during the reaction time task was included as a covariate. Results indicated that the impressions of perceivers induced with a favorable expectancy (M = 4.92) did not differ significantly from perceivers not induced with an expectancy (M = 5.38), $t(280) = -1.55$, $p = .12$, $d = .19$ (Figure 14; Table 4). In contrast to these non-significant findings, results indicated that perceivers induced with an unfavorable expectancy (M = 5.98) judged the target as significantly more hostile than perceivers not induced with an expectancy (M = 5.38), $t(280) = 3.20$, $p < .01$, $d = .38$ (Figure 14; Table 4). These results suggest that unfavorable expectancies had more powerful influences on perceivers' impressions of targets' hostility than did favorable expectancies and were more likely to lead to perceptual bias effects. Having demonstrated that perceptual bias effects were occurring in these data with respect to unfavorable expectancies, I next examined whether those effects accumulated.

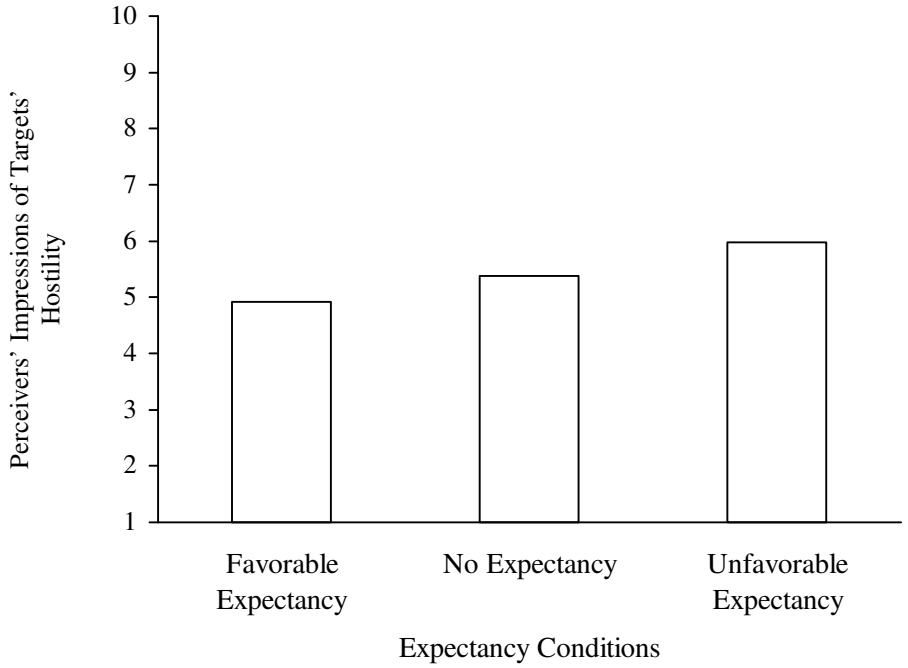

Figure 14. Perceivers' impressions of targets' hostility across the three conditions.

Table 4

The Influence of Perceivers' and Partners' Expectancies on Perceivers' Impressions of Targets

Variable	*B*	*SE B*	β
Average target noise blast	.31	.05	.40**
Target trait hostility	-.01	.01	.04
Target state hostility	.11	.07	.11
Perceivers' unfavorable expectancies	.33	.10	.19**
Perceivers' favorable expectancies	-.17	.11	.10
Partners' unfavorable expectancies	-.23	.10	.13*
Perceivers' unfavorable expectancies X partners' unfavorable expectancies	-.07	.12	.04

Note. * $p < .05$. ** $p < .001$.

Main Analyses

Concurrent accumulation of perceptual biases. The preliminary analyses demonstrated that perceptual bias effects were occurring in the data. Perceivers induced with an unfavorable expectancy judged the target as significantly more hostile than perceivers not induced with any expectancy. Therefore, I next examined whether unfavorable expectancies had a concurrent accumulative effect on perceivers' impressions of targets' hostility using a SAS PROC MIXED procedure (Littell et al., 1996) in which the dependent variable was perceivers' impressions of the targets' hostility. The independent variables were the perceivers' expectancies (unfavorable or no expectancy) and the expectancies of their partners (unfavorable or no expectancy). To control for the influence of targets' hostility on perceivers' impressions, targets' state and trait hostility were included as covariates. Similarly, to control for the influence of targets' actual behavior during the

reaction time task on perceivers' impressions, targets' average noise blast administered to perceivers during the reaction time task was included as a covariate.

Results indicated that perceivers who were induced with an unfavorable expectancy formed a less hostile impression of the target when their partners were also induced with an unfavorable expectancy, $t(280) = -2.17$, $p < .05$, $d = .26$ (Table 4). That is, perceivers' impressions of targets were *less* hostile when both they and their partner were induced with an unfavorable expectancy than when perceivers were induced with an unfavorable expectancy but their partners were not induced with any expectancy. Although this finding indicates that partners' expectancies influenced perceivers' impressions of targets, the pattern is counterintuitive and does not provide evidence of accumulation. Accordingly, I performed some supplemental analyses in an attempt to better understand what might have caused this unexpected pattern.

Supplemental analyses. The supplemental analyses examined whether the unexpected finding described above occurred, not because of partners' expectancies, but rather because targets administered significantly louder noise blasts in the single unfavorable expectancy condition compared to the double unfavorable expectancy condition. That is, it is possible that perceivers were simply reacting to the behaviors of the targets (which just happened to be louder in the single versus the double unfavorable expectancy condition) rather than to the expectancies of their partners (which were manipulated to be less hostile in the single versus the double expectancy condition). I examined this possibility with five separate one-way ANOVAs. The independent variable in these analyses was the number of perceivers induced with an unfavorable expectancy, which equaled one for triads in the single unfavorable condition and two for triads in the double unfavorable expectancy condition. The dependent variables were the: 1) targets' noise blasts at block one, 2) targets' noise blasts at block two, 3) targets' noise blasts at block three, 4) targets' noise blasts at block four, and 5)

targets' average noise blasts. To control for the influence of hostility on perceivers' and targets' behavior during the reaction time task, perceivers' and targets' trait hostility were included as covariates in each analysis.

Results indicated that targets had indeed administered significantly louder noise blasts at block one when they were in triads consisting of only *one* perceiver who had been induced with an unfavorable expectancy compared to targets who were in triads consisting of *two* perceivers, both of whom had been induced with an unfavorable expectancy, $F(1, 62) = 5.46$, $p < .05$, $d = .59$. The remaining three blocks and the average noise blast administered by targets did not differ significantly as a function of the number of perceivers induced with an unfavorable expectancy, Fs$(1, 62) < .79$, ps $> .38$, ds $< .22$.

Therefore, in a second supplemental analysis, I examined whether the effect of partners' unfavorable expectancy remained significant after accounting for targets' initial noise blasts. If targets' initial noise blasts had caused perceivers to form more hostile impressions in the single versus double unfavorable expectancy conditions, then partners' unfavorable expectancies should not significantly influence perceivers' impressions when targets' initial noise blasts are controlled. To test this idea, an analysis using SAS PROC MIXED (Littell, et al., 1996) was conducted in which the dependent variable was perceivers' impressions of targets' hostility. The independent variables were perceivers' expectancies (unfavorable or no expectancy) and partners' expectancies (unfavorable or no expectancy). Also included in the analysis were targets' initial noise blasts and the covariates of targets' state and trait hostility. Results indicated that the effect of targets' initial noise blast significantly predicted perceivers' impressions of targets' hostility, $t(140) = 3.00$, $p < .01$, $d = .51$, whereas partners' expectancies did not, $t(270) = -1.11$, $p = .27$, $d = .14$. The effect of targets' initial noise blast on perceivers' impressions of targets' hostility remained significant when

the analysis also included targets' noise blasts at blocks two, three, and four, $t(137) = 2.14$, $p < .05$, $d = .37$.

Taken together, the above findings provide evidence that targets' initial noise blasts may have been the primary reason that perceivers in the single unfavorable expectancy condition formed more hostile impressions than perceivers in the double unfavorable expectancy condition.

Synergistic accumulation of perceptual biases. The last analysis I performed examined whether perceptual bias effects accumulated synergistically when both perceivers were induced with an unfavorable expectancy. To test if synergistic accumulation across perceivers was occurring in the data, a SAS PROC MIXED procedure (Littell et al., 1996) was performed in which the dependent variable was perceivers' impressions of the targets' hostility. The independent variables were perceivers' expectancies (unfavorable vs. no expectancy), partners' expectancies (unfavorable vs. no expectancy), and an interaction term that was created by multiplying the expectancy of perceivers by the expectancy of their partners. To control for the influence of targets' hostility on perceivers' impressions, targets' state and trait hostility were included as covariates. Similarly, to control for the influence of targets' actual behavior during the reaction time task on perceivers' impressions, targets' average noise blast administered to perceivers during the reaction time task was also included as a covariate. Results indicated that the interaction term was not significant, $t(138) = -.58$, $p = .56$, $d = .10$ (Table 4). Thus, there was no evidence to indicate that synergistic perceptual bias effects occurred in these data.

Chapter VI: Discussion

This experiment tested for the accumulation of two interpersonal expectancy effects: self-fulfilling prophecies and perceptual biases. This research was designed with two primary goals in mind. First, it was designed to examine whether self-fulfilling prophecy and perceptual bias effects accumulated across perceivers in a tightly controlled laboratory experiment. Second, it was designed to examine whether unfavorable or favorable expectancies produced more powerful cumulative self-fulfilling prophecy and perceptual bias effects. These goals were addressed in an experiment that manipulated both the number of perceivers induced with a false expectancy about a target's personality and the favorableness of the induced expectancy. Results failed to provide any evidence that self-fulfilling prophecies occurred in the data. The average noise blast that targets administered to perceivers during the reaction time task did not significantly vary across the expectancy conditions. As such, there were no self-fulfilling prophecy effects that could accumulate across perceivers. In contrast, results did provide evidence that perceptual bias effects occurred in the data. Specifically, even after controlling for targets' trait and state hostility, as well as targets' actual level of hostility exhibited during the reaction time task (as measured by targets' average noise blast across the trials), perceivers induced with an unfavorable expectancy judged targets as more hostile than perceivers not induced with any expectancy. However, additional analyses that tested whether these perceptual bias effects accumulated were not in the expected direction. Rather than one perceiver's unfavorable expectancy potentiating the tendency for the other perceiver to form a more hostile impression of the target, results indicated the opposite pattern – one perceiver's unfavorable expectancy attenuated the tendency for the other perceiver to form a more hostile impression of the target. The following sections discuss these findings in more detail.

Self-Fulfilling Prophecies

Self-fulfilling prophecies are one way that perceivers can construct social reality. Although past research has demonstrated that self-fulfilling prophecy effects tend to be small, many researchers have theorized that these modest effects can become stronger if they accumulate across perceivers (Jussim et al., 1996; Klein & Snyder, 2003; Snyder, 1992; Snyder & Stukas, 1999, for reviews). Previous research using correlational data has supported this idea. Madon et al. (2004) found that after controlling for background predictors of adolescent alcohol use, parents' beliefs about their children's future alcohol use predicted the greatest degree of confirmatory behavior from their children when both parents had overestimated how much alcohol their child was likely to drink. A primary goal of the present investigation was to replicate this effect in a tightly controlled laboratory experiment that could better rule out alternative causal explanations that are commonly associated with correlational methods. Although the current study provided evidence that perceivers acted on their expectancies – perceivers in unfavorable expectancy conditions administered significantly louder noise blasts to targets than did those in the favorable or no expectancy conditions – this differential treatment did not elicit confirmatory behavior from targets. The level of the noise blast that targets administered back to perceivers did not significantly differ across the expectancy conditions. The absence of a self-fulfilling prophecy effect meant that there was no effect that could accumulate. Accordingly, cumulative self-fulfilling prophecy effects were not tested.

Although it is not entirely clear why the current study failed to yield significant self-fulfilling prophecy effects, especially since the procedures of this experiment were methodologically very similar to the procedures of prior research that did find such effects (Snyder & Swann, 1978), it is the case that self-fulfilling prophecy effects are notoriously small in magnitude making them

difficult to detect (Rosenthal, 2002; Rosenthal & Rubin, 1978). Consistent with this, in the current experiment targets' noise blasts were slightly higher in the unfavorable (M = 6.31) versus the favorable expectancy (M = 6.00) conditions (Table 3). Although this pattern is consistent with a self-fulfilling prophecy, it corresponds to a very small effect: d = .14 or r = .069, one that is even smaller than that which is typically observed in the literature (Rosenthal & Rubin, 1978). Accordingly, the current study would have needed to have included 400 triads per condition (i.e., 2,000 triads in all or 6,000 individual participants) to reach the desired power level of $\beta = 0.20$ for multiple two-tailed tests at the .05 level in order to detect the observed effect. This suggests that even had the sufficient power been reached, the effect is not a meaningful one (Cohen, 1977).

Perceptual Bias

Although the data provided no evidence of self-fulfilling prophecy effects, results indicated that perceivers did demonstrate perceptual bias effects. Perceivers induced with an unfavorable expectancy judged the target as significantly more hostile compared to perceivers not induced with any expectancy. Moreover, this effect was observed even though targets' actual personalities (as assessed by hostility measures) and their actual behavior during the reaction time task (as assessed by their average noise blasts) were taken into account.

The tendency for perceivers to believe that their expectancies were confirmed to a greater degree than they were in reality has several important implications. First, this process may lead perceivers to believe that it is appropriate for them to continue treating targets in line with their false expectancies in subsequent interactions. In many naturalistic contexts, this could serve to restrict targets' opportunities, ultimately having harmful effects. For example, consider a manager who expects a particular employee to be incompetent upon an initial meeting. If, after observing the employee for several weeks, this manager believes that her or his expectancy has been confirmed to

a greater extent than it actually has, then a harmful situation could arise. The manager, because of a perceptual bias, may inappropriately pass over this employee for special training, workshops, promotions, and wage increases. If this were to occur, then the employee would be at a significant disadvantage, not because of her or his actual job performance, but rather because of the manager's impression of her or his job performance.

Second, the possibility that perceivers may treat targets in line with their false expectancies over extended periods of time could also create a situation that is particularly conducive to self-fulfilling prophecy effects. For instance, even if the manager in the previous example does not elicit confirmatory behavior from the employee in the short term, he or she may do so in the long term by virtue of limiting the employee's skill development relative to other employees. That is, by virtue of being passed over for special training, workshops, and promotions, this employee may not develop the same skill set as other employees who were given different and more favorable opportunities across the same time frame. Indeed, past research has shown that perceivers' false expectancies put targets on trajectories that increasingly benefit some, while increasingly harming others over extended periods of time (Madon et al., 2006).

Third, perceptual biases, by their nature, restrict perceivers from attaining disconfirming evidence about the false expectations that led to perceptual bias effects in the first place. As research has shown, perceptual biases may cause perceivers to all-together avoid future interactions with targets (Harris, 1993). Because of this avoidance, targets are not afforded opportunities to provide instances that can disprove the originally false expectancies. For example, a newly hired employee might, on the basis of faulty information, expect a particular co-worker to be incompetent. This expectancy may then lead to a perceptual bias where the newly hired employee forms an unfavorable impression of the co-worker's skills. This impression, in turn, may ultimately lead the newly hired

employee to avoid future interactions with the co-worker as a way to reduce the likelihood that s/he may her/himself be judged unfavorably via association with the co-worker. However, if the newly hired employee interacted with the co-worker on a project, the co-worker would be afforded the opportunity to disconfirm the false expectancy and perhaps ultimately change the newly hired employee's impression. Thus, perceptual biases can lead to avoidance which, in turn, can reduce the likelihood that a perceiver's false expectancy of a target will be disconfirmed in the future.

The Accumulation of Perceptual Bias Effects

Although the current study yielded perceptual bias effects, additional analyses failed to provide support for the hypotheses pertaining to the accumulation of these effects. Specifically, with respect to synergistic accumulation processes, the interaction between perceivers' unfavorable expectancies and their partners' unfavorable expectancies did not significantly influence perceivers' impressions of targets' hostility. Thus, there was no evidence that perceivers' false expectancies potentiated one another's perceptual bias effects. With respect to concurrent accumulation, results suggested that partners did significantly influence perceivers' impressions of targets, although the direction of this effect was opposite than predicted. When both perceivers were induced with an unfavorable expectancy, perceivers formed less hostile impressions of the target than when only one of them was induced with an unfavorable expectancy. Because this finding was counterintuitive, supplemental analyses were performed to examine possible explanations of this effect.

These supplemental analyses revealed that targets in the single unfavorable expectancy condition administered an initial noise blast that was louder than that administered by targets in the double unfavorable expectancy condition. Although it is not clear why this occurred, the fact that it did raises the possibility that perceivers' first impression of targets, communicated via targets' initial noise blasts, may have had a significant and lasting influence on perceivers' overall impressions of

targets' hostility. That is, when forming their impressions, perceivers may have weighed most heavily the first piece of behavioral information they gleaned about targets - i.e., targets' initial noise blast. This interpretation is consistent with the literature bearing on impression formation processes. For example, research indicates that first impressions have especially powerful effects on the judgment process (Kelley, 1950) and are more important than subsequent impressions during brief or minimally interactive encounters (Luchins & Luchins, 1961). Accordingly, it seems reasonable that perceivers' impressions of targets simply mirrored targets' initial noise blasts which happened to be louder in the single versus the double unfavorable expectancy conditions.

The idea that early information about a target was weighted more heavily in the impression process than later information was also supported by two other related findings. First, I found that partners' unfavorable expectancies did not significantly influence perceivers' impressions of targets' hostility when targets' initial noise blasts were included in the analysis, but that targets' initial noise blasts did. This indicates that perceivers judged targets as the most hostile when targets administered initial noise blasts that were louder versus softer. Furthermore, targets' initial noise blasts appear to have had a stronger influence on perceivers' impressions when they matched perceivers' expectancies – i.e., when perceivers expected targets to be hostile and targets administered initial noise blasts that were loud. This finding is consistent with past research showing that perceivers tend to selectively recall target behavior that is consistent with their expectancy more than behavior that is inconsistent with their expectancies and to selectively give more weight to information that matches their expectancies (Darley & Gross, 1983).

Second, I found that targets' initial noise blasts continued to influence perceivers' impressions of targets' hostility even when subsequent information about the target (i.e., the targets later noise blasts) was controlled. This latter finding suggests that the first impression that

perceivers developed about targets was a lasting one. Taken together, these findings suggest that perceivers' impressions are most strongly influenced by information that targets exhibit early in social interactions.

Limitations

There are multiple limitations of this research that merit discussion. First, self-fulfilling prophecy effects might not have been observed in the data because targets' behavior was not operationalized as a skill-based behavior. Instead, targets' behavior was measured as the level of noise blast administered back to perceivers. To administer a noise blast, targets simply had to click a mouse button. Because clicking a mouse button requires no skill, targets always had the ability to administer any level of noise to perceivers that they wanted. This may have made it difficult for perceivers' treatment of targets to clearly and consistently shape targets' behavior to go in a particular direction. To further underscore this point, consider the vast differences in learning curves between learning how to click a mouse button and learning how to solve a complex mathematical problem. Whereas an individual can essentially learn how to click a mouse in seconds, it can take weeks (if not semesters) to form logical reasoning abilities necessary to solve complex mathematical problems often seen on intelligence tests. It is conceivable, then, that if targets' behavior had been skill-based in the current study, that the data would have been more likely to provide support for a self-fulfilling prophecy effect. Accordingly, one reason that the current experiment may not have elicited self-fulfilling prophecy effects is because of the type of behavior examined.

A second limitation of this study is that the paradigm that was used might have reduced the likelihood that targets would confirm perceivers' expectancies. The study employed a paradigm in which participants believed their success on the reaction time task depended, at least to some degree, on their competitiveness. For example, participants were told that their success on the reaction time

task depended not only on their ability to react quickly to the presented stimulus, but also on their strategic use of a noise weapon. Participants may have understood this to mean that they should use the noise weapon in an aggressive and hostile way for their own advantage. Similarly, specific directions given to participants, such as *"success against your opponent"*, may have inadvertently primed participants to be competitive and to administer louder noise blasts to their opponent. It is likely that the information and directions regarding the reaction time task was paid special attention to by perceivers not given an expectancy and targets, because these participants were not given any information about their opponent. Accordingly, these aspects of the procedures may have inadvertently led targets to behave competitively, thus reducing the likelihood that perceivers could elicit differential behavior from targets across the expectancy conditions. Indeed, the average noise blasts administered by targets hovered between levels five and six across all five expectancy conditions (see Figure 12).

A third limitation of this research was that participants' physical appearance could have diluted the effectiveness of the expectancy manipulation. In order to reduce the likelihood that participants might wrongly assume that other participants were not present at the experimental session, all participants in a triad were brought together briefly to complete consent forms. Although participants were prevented from verbally interacting with each other while completing these consent forms, it is still possible that they developed expectancies about each other on the basis of physical appearance. If this happened, then participants may have been less likely to accept at face value the expectancy that was induced subsequently as part of the experimental manipulation. For example, participants may have been less willing to believe that another participant was competitive and hostile if he appeared timid or was small in stature. Although the employment of random assignment to expectancy conditions should have minimized the likelihood that physical appearance

diluted the strength of the expectancy manipulation, it still remains possible that dilution occurred, thereby reducing the potential influence of the induced expectancies on targets' behavior and perceivers' impressions of targets' behaviors.

A fourth limitation of this research was that participants were not informed of the exact noise blast level that they had been administered by their opponents. Accordingly, it is possible that participants simply may not have been able to discern small differences in the noise blast levels they received across trials such as, for example, between a level five noise blast and a level six noise blast, thereby making it difficult for them to reciprocate in kind. Future research using this paradigm may benefit from displaying the noise level directly on the screen after each trial to ensure that participants are cognizant of the exact level they were administered.

A fifth limitation of this research is the way in which perceptual biases were operationalized. Although the analyses testing for perceptual bias effects controlled for targets' actual behavior during the reaction time task, it could have been the case that perceivers had simply used the descriptions they had been given about the target earlier in the experiment to form their impressions. For example, perceivers who were induced with unfavorable expectancies were led to believe that the target was hostile and angry. It could have been the case that these perceivers simply used this information when responding to the questions that assessed their impressions of the targets' hostility. Although this possibility cannot be ruled out definitively, it was the case that participants had been given explicit directions to rate their opponent's behavior *during* the reaction time task. Thus, it was assumed that perceivers had judged the targets' hostility according to their experiences during the reaction time task and not on the basis of the description that they had previously been given. One way to avoid this limitation in future research would be to assess perceivers' impressions of targets with respect to specific aspects of targets' behavior during the reaction time task that were not traits

or adjectives related to those used to induce the expectancy (e.g., Did your opponent administer louder noise blasts than were warranted during the reaction time task?).

Conclusion

This research addressed two questions: Do self-fulfilling prophecy and perceptual bias effects accumulate across perceivers? Do unfavorable and favorable expectancies differentially produce these cumulative effects? Perceivers' expectations did not have any self-fulfilling influence on targets' behaviors. However, when perceivers were induced with an unfavorable expectancy, a perceptual bias effect did occur – even though targets did not confirm perceivers' unfavorable expectancies, perceivers still believed their expectancies had been confirmed. The fact that this pattern was not observed for favorable expectancies suggests that unfavorable expectancies have stronger effects on impressions than do favorable ones. Even though perceptual biases were found, there was no evidence that those effects accumulated. Nonetheless, such effects could occur within different social contexts, with different expectations, and when interactions between perceivers and targets are frequent, regular, and occur over a long period of time. In fact, the two instances in which expectancy effects have been found to produce cumulative effects used procedures in which perceivers interacted with one another directly (Madon et al., 2004; Willard, 2006). Accordingly, the accumulation of expectancy effects may depend on interpersonal contact between perceivers.

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Appendix A

INFORMED CONSENT DOCUMENT

Title of Study: Determining Influences of Reaction time

Investigators: Stephanie Madon, Ashley Buller, Kyle Scherr, Jennifer Willard, Aric Anderson, Ozioma Oji, Aaron Stevens, Matt Speers, Justin Hope, Laura Kilbride, Andrea Willaert, Erin Lepird, Katie Rogers, Kaylee Dingman

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to examine social interaction. Please read this document and ask any questions you may have before agreeing to be in the study. You are being invited to participate in this study because you are a student in a designated psychology class.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, your participation will last less than 50 minutes. During the study you may expect the following study procedures to be followed. You will be asked to fill out personality surveys. You will participate in a reaction time task with other participants that may be recorded on a videotape. During the reaction time task, you and your opponent(s) will be given the option of administering noise to one another via headphones. The decibel level of this noise will not cause any physical damage to your ear. The highest noise level is approved for a half-hour of continuous exposure each day of a 40 hour work week. The highest noise level is comparable to a punch press. This level is louder than a busy city street but quieter than a jackhammer. Also during the study, you will be asked to complete surveys that will assess your impressions about a variety of issues relevant to the experiment including demographic information (e.g., age and gender). You may skip any question that you do not wish to answer or that makes you feel uncomfortable.

RISKS

There are no foreseeable risks associated with participating in this study. However, if you feel uncomfortable at any point while participating you may immediately stop without penalty.

BENEFITS

If you decide to participate in this study there will be no direct benefit to you besides the credit points you will earn. It is hoped that the information gained in this study will benefit society by providing information about how individuals interact.

COSTS AND COMPENSATION

There will not be any costs to you for participating in this study. You will be compensated for your participation with one research credit in your approved psychology course. As noted on your course syllabus, participation in experiments is one of the available options for acquiring experimental credit in your

psychology course. Other options may include writing research papers or taking quizzes. Information about these alternatives is provided in your course syllabus.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. In addition, you may request to have your data destroyed and not used. Due to the anonymous nature of participants' responses, such a request must be made during or immediately after your experimental session.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken: (a) you will be assigned a unique code number that will be used instead of your name; (b) your data will be combined with data collected from other participants so that no individual information can be identifiable; (c) tapes will be stored in a locked file cabinet in a room for which access is restricted and controlled by the principal investigator; (d) these tapes will be erased after their use in the current study; (e) these tapes will only be seen by research members, trained to code them for research purposes; and (f) if a research member were to recognize you from the videotape, that individual would not be permitted to continue to watch the tape and would have no further access to the tape. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact Kyle Scherr at 294-8794 or email him at kscherr@iastate.edu.

- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office of Research Assurances, Iowa State University, Ames, Iowa 50011.

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PARTICIPANT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the written informed consent prior to your participation in the study.

Participant's Name (printed) _____

_____ _____

(Participant's Signature) (Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

_____ _____

(Signature of Person Obtaining Informed Consent) (Date)

Appendix B

Hostile Personality and Interest Question Form

Directions: Please write a brief description of yourself that would give somebody an idea of what you are like as a person. For example, you may want to indicate what personality traits describe you, any hobbies you have, what your major is, or plans after graduating from college. You might also want to include information about your family or any important events in your life that influenced the type of person you are.

I'm the kind of person who doesn't care what other people think or whether they like me or not. I may not look like it, but it doesn't take much to get me angry and I have a short fuse. People say that I am hostile, and I suppose that's true. But I just don't like most people very much.

Appendix C

Friendly Personality and Interest Question Form

Directions: Please write a brief description of yourself that would give somebody an idea of what you are like as a person. For example, you may want to indicate what personality traits describe you, any hobbies you have, what your major is, or plans after graduating from college. You might also want to include information about your family or any important events in your life that influenced the type of person you are.

I'm the kind of person who cares a lot what other people think and whether they like me or not. I may not look like it, but it takes a lot to get me angry and I'm easy going. People tell me that I am friendly, and I suppose that's true. But I just like most people a lot.

Appendix D

Impression Formation Questionnaire

Please rate the extent to which the following adjectives describe (yourself) or (your opponent) during the reaction time task.

Not at All Extremely

1 2 3 4 5 6 7 8 9 10

Nice
Friendly
Cruel
Hostile
Cooperative
Kind
Considerate
Likeable
Warm
Submissive
Sympathetic
Pleasant
Polite
Sensitive
Competitive
Aggressive
Insulting
Rude
Traditional
Enthusiastic
Dull
Normal
Lively
Capable
Average
Foolish
Superficial
Interesting
Knowledgeable
Competent

Filler questions are denoted in *italics.*

Appendix E

Cook-Medley Trait Hostility

For each of the items indicate whether the answer is True (T) or False (F) for you.

1. When I take a new job, I like to be tipped off on who should be gotten next to. ..... T F
2. When someone does me wrong, I feel I should pay him back if I can, just for the principle of the thing. ..... T F
3. I prefer to pass by school friends, or people I know but have not seen for a long time unless they speak to me first. ..... T F
4. I have often had to take orders from someone who did not know as much as I did. ..... T F
5. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others. ..... T F
6. It takes a lot of argument to convince most people of the truth. ..... T F
7. I think most people would lie to get ahead. ..... T F
8. Someone has it in for me. ..... T F
9. My relatives are nearly all in sympathy with me. ..... T F
10. Most people are honest chiefly through fear of being caught. ..... T F
11. Most people will use somewhat unfair means to gain profit or an advantage, rather than to lose it. ..... T F
12. I commonly wonder what hidden reason another person may have for doing something nice for me. ..... T F
13. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important. ..... T F
14. I feel that I have often been punished without cause. ..... T F
15. I am against giving money to beggars. ..... T F
16. Some of my family have habits that bother and annoy me very much. ..... T F
17. My way of doing things is apt to be misunderstood by others. ..... T F
18. I can be friendly with people who do things which I consider wrong. ..... T F
19. I don't blame anyone for trying to grab everything he can get in this world. ..... T F
20. No one cares much what happens to you. ..... T F
21. It is safer to trust nobody. ..... T F
22. I do not blame a person for taking advantage of someone who lays himself open to it. ..... T F
23. I have often felt that strangers were looking at me critically. ..... T F
24. Most people make friends because friends are likely to be useful to them. ..... T F
25. I am sure I am being talked about. ..... T F
26. I am not likely to speak to people until they speak to me. ..... T F
27. Most people inwardly dislike putting themselves out to help other people. ..... T F
28. I tend to be on my guard with people who are somewhat more friendly than I had expected. ..... T F
29. People often disappoint me. ..... T F
30. I have often met people who were supposed to be experts who were no better than I. ..... T F
31. It makes me feel like a failure when I hear of the success of someone I know well. ..... T F
32. I am not easily angered. ..... T F
33. People generally demand more respect for their own rights than they are willing to allow for others. ..... T F
34. I am quite often not in on gossip and talk of the group I belong to. ..... T F
35. I have often found people jealous of my good ideas just because they had not thought of them first. ..... T F
36. I have sometimes stayed away from another person because I feared doing or saying something I might regret afterwards ..... T F

37. I would certainly enjoy beating a crook at his own game. ..... T F
38. I have at times had to be rough with people who were rude or annoying. ..... T F
39. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done. ..... T F
40. I am often inclined to go out of my way to win a point with someone who has opposed me. ..... T F
41. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me. ..... T F
42. I like to keep people guessing what I'm going to do next. ..... T F
43. When a man is with a woman, he is usually thinking about things related to sex. ..... T F
44. I do not try to cover up my poor opinion or pity of a person so that he won't know how I feel. ..... T F
45. I strongly defend my own opinions as a rule. ..... T F
46. I frequently ask people for advice. ..... T F
47. I have frequently worked under people who seem to have things arranged so that they Get credit for good work but are able to pass off mistakes onto those under them. ..... T F
48. People can pretty easily change me even though I thought my mind was already made up on a subject. ..... T F
49. Sometimes I am sure that other people can tell what I am thinking. ..... T F
50. A large number of people are guilty of bad sexual conduct. ..... T F

Appendix F

Additional Measures

Demographic Information presented on MediaLab**:**

Gender: Male or Female
Age
Year in School: Freshman, Sophomore, Junior, or Senior
Ethnicity: African American, Asian, Latino/a, Caucasian, or Other.

Appendix G

Debriefing Statement

Thank you for your participation. All of your responses are confidential and will be combined with the responses of the other participants.

People's inaccurate expectations can shape the behavior of others. For example, if one person is led to believe that another person is unfriendly, he/she may act in such a way to actually elicit unfriendly behavior. This research tests whether this process is stronger when multiple people have similar inaccurate expectations about the same person.

We did not tell you this information before because knowing the true purpose of a study can lead participants to consciously or unconsciously alter their responses. If that were to occur, the integrity of the research findings would be compromised. For this reason, we ask that you not tell others who might participate in our study what it is about.

Participants in this study engaged in a reaction time task with two other participants. Two participants played the role of perceivers and one participant played the role of a target. All participants filled out information about their experience during the study and their impressions of the other participants. All participants also selected noise to administer to their opponent(s) during the reaction time study. The experiences of perceivers and targets differed in these respects:

Some perceivers received bogus information about the target's personality that either did or did not provide information about the target's level of hostility or friendliness, while other perceivers were not given any description. Targets did not receive any information about the perceivers. Targets were videotaped during the reaction time task whereas perceivers were not. The videotape will later be viewed by trained research assistants who will evaluate the behavior of the target. These research assistants are bound by confidentiality, meaning that they may not divulge any information contained within the videotape to any individual who is not a member of the research team. In this way, your personal identity and behavior will be confidential.

We did not tell you these things before you participated because sometimes knowing a study's true purpose causes people to change their responses without their awareness. For this reason, please do not tell others who might participate in this study what we have told you. That way we can keep the experiment the same for all participants.

Your participation today has been very valuable because it will further the field's understanding of circumstances that can shape people's behavior. If you have any concerns about your participation in this study, please contact the psychology office. If you have any other questions or concerns please ask the experimenter or contact Kyle Scherr at kscherr@iastate.edu or (515) 294-8794. Blank consent forms containing contact information are available by the exit. Feel free to take one when you leave.

Appendix H

Effects Coding Scheme

According to the Interdependence Model, it is beneficial to use effect coding. Accordingly, four variables were created to use to code perceivers as being induced with either an unfavorable or a favorable expectancy: actorfriendly, partnerfriendly, actorhostile, and partnerhostile. If a perceiver was induced with a favorable expectancy, his expectancy was coded as l on actorfriendly and a -1 for the other three variables. If a perceiver's partner was induced with a favorable expectancy, his expectancy was coded as l on partnerfriendly and a -1 for the other three variables. If a perceiver was induced with an unfavorable expectancy, his expectancy was coded as l on actorhostile and a -1 for the other three variables. If a perceiver's partner was induced with an unfavorable expectancy, his expectancy was coded as l on partnerhostile and a -1 for the other three variables. An example is shown below for all five conditions of the experiment. Session 1 presents an example of when both perceivers were induced with a favorable expectancy, session 2 presents an example of when one perceiver was induced with a favorable expectancy, session 3 presents an example of when neither perceiver was induced with any expectancy, session 4 provides an example of when one perceiver was induced with an unfavorable expectancy, and session 5 provides an example of when both perceivers were induced with an unfavorable expectancy.

Session	ID	actorfriendly	partnerfriendly	actorhostile	partnerhostile
1	1	1	1	-1	-1
1	2	1	1	-1	-1
2	3	1	-1	-1	-1
2	4	-1	1	-1	-1
3	5	-1	-1	-1	-1
3	6	-1	-1	-1	-1
4	7	-1	-1	1	-1
4	8	-1	-1	-1	1
5	9	-1	-1	1	1
5	10	-1	-1	1	1

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