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EFFECTS OF AFFECTIVE EXPECTANCIES
ON MIRTH AND INTERPERSONAL ATTRACTION:
A TEST OF THE WILSON MODEL

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Frank W. Stevens, M.A.

* * * * *

The Ohio State University
1997

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ABSTRACT

This study tested a model of emotional responding presented by Wilson, Lisle, Kraft, and Wetzel (1989) which incorporated theory-driven processing. The initial study attempted to replicate findings by Wilson et al. (1989) that induced expectations of mirth at viewing cartoons would enhance experienced mirth, shorten evaluation times, and cause participants to report lower numbers of thoughts while viewing cartoons. It further attempted to overcome the effect of expectancies through cognitive manipulations which were designed to prompt participants to notice discrepancies between their expectations and the target objects which they evaluated. The second study attempted to demonstrate that expectancies would heighten attraction felt toward target persons presented in photographs.

Findings from the initial study indicated that expectancies of mirth modestly enhanced mirth when viewing moderately funny cartoons despite attempts to overcome expectations. However, predictions that expectancies would shortened evaluation times and reduce the number of thoughts reported while rating cartoons were not confirmed. Regarding the second study, results confirmed none of the predictions that expectations would enhance feelings of attraction, shorten evaluation times, or reduce numbers of reported thoughts were confirmed. The pattern of findings in each study was inconclusive and did not support the Wilson model.
ACKNOWLEDGMENTS

I wish to thank my adviser, Herb Mirels, for discussing this project with me, suggesting tactics which might overcome expectancies, and most of all for his patience and time in reviewing and correcting this dissertation. I thank other faculty members, Steve Beck and Dave Smith, for insights and suggestions which they provided at the time the proposal for this project was approved.

I thank the numerous research assistants who helped with various aspects of this study, including rating and selecting target objects, coding reported thoughts, and measuring evaluation times.

I thank my wife, Jenny, who has provided moral and practical support for this project, without whose patience and cooperation it would not have been possible.
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In everyday life we often have expectations about how we will feel in diverse situations which are familiar to us. We can anticipate our emotions when we have lunch with a friend, take our children to the zoo, or take an unpopular stand with employees. We usually regard these expectations as simply predictions of emotions we might feel, but these feeling expectations may influence the emotions we eventually experience. If we attend a movie after hearing friends rave about it, and the movie is objectively less than excellent, do our expectations make us have a better time than we would otherwise? If we expect to experience fear when we perform in public, does that expectation enhance anxiety when the event occurs?

This study examined the role of expectations and cognitions in the both the evaluation of objects which elicit emotion and in subsequent affective experience. The basic question it sought to answer was whether giving people the belief that cartoons would amuse them or that a person would be attractive to them would make it so. The study represented a test of a model for both the formation of preferences or attitudes towards objects and the experience of affect which was presented by Wilson, Lisle, Kraft, and Wetzel (1989). The study sought to replicate Wilson et al.'s (1989) findings that expectancies would affect diverse aspects of
mirth responses. It attempted to overcome the effect of expectancies through cognitive manipulations which seemed reasonably likely to overcome those effects, based on Wilson et al.'s basic model. Finally, it attempted to extend the replication and reversal of expectancy effects beyond mirth to the realm of interpersonal attraction.

Data-driven versus theory-driven models of emotion.

Data-driven models (also called "bottom-up" models) propose that mental processes such as the perception of a stimulus are guided primarily by features of the stimulus itself. Theory-driven ("top-down") models propose that knowledge which is already stored in memory directs or supplements the processing of stimulus features. Where top-down models have been introduced, they have engendered controversies over whether processes are bottom-up or top-down in nature, and a search for conditions under which each type of processing might predominate.

Although theory-driven models have long been popular in the fields of perception, impression formation, memory, and judgment, nearly all theories of emotion are bottom-up theories in which the data of the subject's phenomenal world are synthesized to produce emotional experience. However, top-down features have recently been incorporated into appraisal theories of emotion (Roseman, 1984; Scherer, 1984; Smith and Ellsworth, 1985; Frijda, 1986; Ortony, Clore, and Collins, 1988; Fiske, 1981, 1982). Most of these models assume that the various appraisals one might make of a situation depend on the way one has structured information relevant to the situation and on the degree to which various parts of a cognitive informational structure are activated or primed by needs, wishes, or goals. More recent models of affect generated in impression formation allow for relatively independent operation of either top-down and bottom-up processing modes, depending on the needs and
motives of the processor (Fiske and Pavelchak, 1986; Fiske and Neuberg, 1990). The Wilson et al. (1989) model has much in common with this approach.

The Wilson model

Wilson et al. (1989) and Wilson and Klaaren (1992) proposed that "affective expectancies" influence feelings by facilitating the evaluation of objects or situations which elicit emotion. Affective expectancies are expectations about how one will feel when confronting a particular situation. People have expectations about how they will usually feel when they go to a carnival, eat at their favorite restaurant, see a horror movie, or attend a funeral. These affective expectancies may have a role in determining emotional experience, even if persons are not aware of holding a particular expectancy or of the process which they use to evaluate an event. For example, if one views a cartoon which is presumed at some level to be funny, mirth could follow without extensive evaluation of cartoon attributes because one is already primed to regard the cartoon as funny. Wilson et al. (1989) speculated that people commonly acquire affective expectancies through direct experience with an object, by observing or hearing about others experiences, or through cultural exposure.

The Wilson et al. (1989, 1992) model allows for both data-driven and theory-driven processing. The model asserts that the influence which affective expectancies have on both emotional reactions and the affective evaluation of objects depends on 1) the degree of match which exists between any present expectations and the objects one encounters; and 2) whether or not the perceiver notices any disparity between expectations and the target object. These two determinants allowed the delineation of four possible (but not exhaustive) categories which served as an heuristic for research. The features of these categories are summarized in
Case 1: No affective expectancies

The first category encompassed cases in which people have no affective expectancies relevant to the circumstances or object one encounters. A lack of affective expectancies would mean that one would have to resort to the data-driven processing of information about an object in order to provide a basis for feeling. As a result, affective experience would be delayed until an appraisal is completed.

As an example which will be repeated to illustrate this and other cases in the heuristic, imagine the situation of a person from another culture who attends a musical play off Broadway, having never before seen a musical play or heard others’ opinions of these plays. Imagine that she happens to view a mediocre play. Without the guidelines for feeling provided by affective expectancies she would have to process this experience based entirely on the data which she receives. She will evaluate at some level various attributes of the play, such as the lavish costumes, uneven lighting, excellent music, and uninspired choreography. She may then have a moderately pleasurable experience, but the pleasurable feelings can proceed only after a data-driven evaluation of the play.

Wilson et al. (1989) suggested that persons rarely have a feeling reaction in the absence of affective expectancies because they have a plethora of expectancies which are based on experience with objects of different types. For example, if one were going on a blind date, expectancies about even a stranger could be formed based on notions of what blind dates in general are like. Similarly, one could form expectancies about a new author’s novel based on ideas of what the work of new authors in general is like.
Cases in the Wilson (1989) Model

No Affective Expectations

Clear Affective Expectations

Expectations Match Stimulus

Expectations Do Not Match Stimulus

Discrepancy is Not Noticed

Discrepancy is Noticed

Case 1

Case 2

Case 3

Case 4

Table 1.1: Cases in the Wilson et al. (1989) Heuristic.

<table>
<thead>
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<th>Type of Processing</th>
<th>Affect</th>
<th>Evaluation Time</th>
<th>Cognition</th>
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<tr>
<td>Case 1</td>
<td>Data-Driven</td>
<td>Correct</td>
<td>Baseline</td>
<td>Baseline</td>
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<tr>
<td>Case 2</td>
<td>Theory-Driven</td>
<td>Correct</td>
<td>Faster</td>
<td>Less</td>
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<td>Case 3</td>
<td>Theory-Driven</td>
<td>Mistaken</td>
<td>Faster</td>
<td>Less</td>
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<tr>
<td>Case 4</td>
<td>Data-Driven</td>
<td>Correct; Possible Contrast Effect</td>
<td>Slower</td>
<td>Equal or More</td>
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Case 2: Affective expectancies match target object

The second category includes cases in which clear positive or negative expectations exist and those expectations are consistent with the target object. In this situation, the expectancies are thought to facilitate affective reactions by reducing the cognitive work needed to appraise the stimulus. Wilson et al. (1989) proposed that relatively little cognitive processing was required in this instance because only cursory confirmation checks would be needed to verify that the attributes of the object or situation matched expectations. Wilson et al. (1992) expanded their explication of cursory confirmation checks by saying that in performing these checks, persons might selectively attend to aspects of the stimulus which were consistent with expectations and discount or ignore aspects which were inconsistent with expectations. Once expectations were confirmed, one could conclude object evaluation quickly and get on with experiencing the anticipated affect. The appraisal in this case becomes at least partly a theory-driven judgment. The resulting affective reaction would be similar to that which data-driven processing would produce, although if indicators such as physiological responses were observed it might differ in subtle ways.

To illustrate this case with the example of a person from another culture watching a mediocre musical play, imagine that prior to the performance she hears coworkers talk about the mixed quality of the performances they have seen off Broadway and how, despite shortcomings of the plays, they always derived reasonable enjoyment from seeing them. She would believe that viewing this particular play will produce a moderately pleasurable experience. With this expectancy as a guide, she would not have to begin from scratch and build up an overall evaluation of the experience. Instead, a few salient stimulus attributes

1The confirmation checks which the authors referred to were similar to those seen in the New Look theory of perception (Bruner, 1957).
build up an overall evaluation of the experience. Instead, a few salient stimulus attributes such as lavish costumes or poor choreography could be evaluated. She would evaluate the play as consistent with her expectations, and the anticipated moderate level of pleasure could be experienced quickly.

Case 3: Mismatch is not noticed

The next category comprises instances in which one has firm affective expectations about an object or experience, but those expectations are inconsistent with the target object and the cursory confirmation check fails to detect the mismatch. According to Wilson et al.'s (1989) model, little cognitive workload is entailed in this case because no need for further evaluation has been indicated by the confirmation check. Subsequent affective experience would occur rapidly based on a theory-driven evaluation of the target object. The affect one experiences may be different from what one would feel if a data-driven appraisal of the target object were completed.

To illustrate this using the example of the person attending a mediocre off-Broadway musical, suppose that before going to the theater she talks to fans of off-Broadway plays instead of the less enthusiastic coworkers mentioned previously. Imagine that she hears these fans rave about the uniformly superb quality of the performances they have seen and how highly pleasurable these experiences were for them. She would develop a clear expectation that people greatly enjoy viewing off-Broadway musicals and that she will greatly enjoy this play. When she sees the musical and evaluates it against her expectations, she may focus on attributes which confirm expectations such as the lavish costumes or splendid music. She might discount attributes which are inconsistent with her high expectations, such as poor choreography or uneven lighting. Alternatively, she may not evaluate inconsistent attributes
purely due to chance because few attributes would be evaluated in a cursory confirmation check. In either event she could quickly confirm that the play is consistent with her expectations and go on to experience more pleasure than if she had witnessed the performance without affective expectancies. At some level the stimulus has been mistakenly categorized through theory-driven processing and feeling has proceeded based on that mistaken evaluation, rather than on the more accurate evaluation which would derive from data-driven processing.

Case 4: Mismatch is noticed

The remaining category includes cases in which clear affective expectancies exist and expectancies do not match the relevant object or situation, but the perceiver becomes aware of the mismatch. This would be a case in which the confirmation check succeeds in uncovering the disparity. Wilson et al. (1989) hypothesized that noticing the disparity would prompt the person to conduct a data-driven evaluation of the object to determine its actual affect-provoking value. Instances of this category would be characterized by more thought and even longer evaluation times than cases in which no affective expectancies existed because the overall evaluation time would include both the time needed to recognize the disparity and the time needed for data-driven processing. This process may yield an accurate evaluation of the stimulus, similar to the evaluation which would have resulted without affective expectancies. However, Wilson et al. (1989) conjectured that contrast effects could also occur in this case of the heuristic, in which the target object is evaluated counter to its stimulus value. These contrast effects do not refer to feelings of disappointment when positive expectations are not realized or relief when negative expectations do not come true. Contrast effects result from a data-driven evaluation of the target object which is inconsistent with its actual value.

To illustrate this case with the example of the person attending the mediocre off-
Broadway musical, imagine that beforehand she develops a clear affective expectancy of a highly pleasurable experience by hearing fans rave about it. Once the performance had begun, she could complete a cursory check to confirm that the experience matched expectations. If she happened to notice that the choreography was poor and lighting was uneven, the disparity between these attributes and her high expectations might prompt her to perform a more thorough, data-driven evaluation of the play. At this point, with her previous high expectations as a foil for comparison, she may evaluate the play as even less than mediocre and experience less pleasure than if she had seen the play without affective expectancies of great enjoyment. The lessened pleasure in this case would be an example of a contrast effect which derives from the evaluation of the target object.

Research Support for the Wilson Model

Wilson et al. (1989) reported a pilot study and two more extended studies which supported their model.

Pilot study

Purpose. The initial pilot study sought to demonstrate that response times would vary predictably with whether or not one’s affective expectations were met by a target object.

Method. For the initial pilot study, researchers asked participants in a pre-trial sample to indicate how different factors would influence their mood, and discovered that nearly all participants thought that their mood would be improved if it were their birthday. From this finding, the researchers concluded that a cultural affective expectation for feeling good on one’s birthday is held by most persons, even if nothing happens on their birthday to
prompt them to consciously consider that expectancy.

Researchers then telephoned an additional sample of students, half of whom were called on their birthday and half of whom were called on some other day. It was presumed that persons called on their birthday would have expectancies of being in a good mood due to the cultural affective expectation, whereas persons called on some other day would not have similar expectancies. Participants rated their feelings using ten-point likert scales on the dimensions of happy, depressed, energetic, sad, and sociable. These ratings were reversed where appropriate and summed to provide an overall mood index. Researchers also timed participants' response latencies with a stopwatch.

Predictions. Researchers predicted that response times would depend on two variables: a) whether participants were called on their birthday or some other day; and b) whether participants reported being in a good mood or bad mood.

Persons who reported being in a good mood on their birthday were predicted to have the shortest response times. They would have expectancies of a being in a good mood and would represent either Case 2 or Case 3 of the Wilson heuristic (see Table 1.1). Whether their birthday matched their expectations of a good mood or not, they would have noticed no mismatch. According to the Wilson et al. (1989) model, they would have performed a rapid theory-driven evaluation of their day, which would yield the shortest response times.

Conversely, persons who reported being in a bad mood on their birthday would represent Case 4 of the heuristic and were predicted to exhibit the longest response times. They would have had expectations of a good mood and would have noticed that those expectations did not match the quality of their day. Accordingly, at some level they would have to detect a mismatch between their expectancies and the quality of their day and then complete a data-driven evaluation. Researchers thought that the time needed to complete
these processes should produce longer response times than for any other condition in the study.

Participants who were called on some other day than their birthday were predicted to exhibit intermediate response times. With no expectancies in place regarding their mood that day, they would have represented Case 1 of the heuristic. Regardless of the quality of their day, the absence of affective expectancies would necessitate a data-driven evaluation of their day. They would have longer response times than persons who were in a good mood on their birthday because those people would only have to complete a rapid, theory-driven evaluation of their day. They would have shorter evaluation times than persons who were in a bad mood on their birthday because those people would have to first recognize a mismatch between their expectancies and mood before they could conduct the data-driven evaluation of their day.

Results of the pilot study were consistent with predictions. Participants who were in a good mood on their birthday took significantly less time to report their mood than participants who were in a bad mood. Participants who were called on some other day than their birthday exhibited intermediate response times, and these times did not vary with quality of their mood. Wilson et al. (1989) claimed that the confirmation of these predictions supported not only the notion that participants rated mood with reference to expectancies, but also supported the model of affective expectancies which they presented.

**Wilson’s First Mirth Study**

**Purpose.** Wilson et al. (1989) conducted an experimental investigation designed to further validate the model. The primary purpose of this study was demonstrate the existence of Case 3 of the heuristic, in which affective expectancies can cause both an erroneous evaluations of target objects and inappropriate affective experiences. This study merits
detailed review because with some revisions it became the experimental paradigm for the present investigation.

**Method.** In the first mirth study, some participants were given heightened expectancies of seeing funny cartoons through a deceptive procedure which ostensibly offered participants a choice of the cartoons which they would rate. All participants were given an opportunity to select the cartoons which they would see by choosing one of several stacks of slides on a table, each of which contained an identical series of cartoons. Upon choosing a stack, participants in the high expectancy of mirth condition heard the experimenter remark "Oh, you're lucky. Almost all of our previous subjects thought that these ones [sic.] were really funny" (Wilson et al., 1989, p. 522). This remark was an affective biasing cue, designed to create a strong expectancy of viewing funny cartoons. The remaining participants also underwent this bogus cartoon choice procedure but did not hear the affective biasing cue and so did not receive the heightened expectancy.

Next, all participants viewed the same series of six cartoons which were always presented in the same order: three genuinely funny cartoons followed by three less humorous cartoons (hereafter "moderately funny" cartoons). It was presumed that for all participants the experience of first viewing three genuinely funny cartoons created a weak target-based expectancy that the subsequent three cartoons would also be funny. Further, for participants in the high expectancy condition who heard the affective biasing cue, it was thought that viewing the first three cartoons would provide an opportunity to confirm their heightened expectancies.

Cartoons were presented with a slide projector. Participants were allowed to view each cartoon for as long as they wished. They rated each cartoon on a nine-point scale anchored with the captions "not at all funny" and "extremely funny." Both facial mirth and
evaluation times were coded from surreptitiously made videotapes of the sessions. At the end of the procedure, participants completed a questionnaire which asked them to "describe any thoughts or feelings you had during the part of the study where you rated the cartoons." Responses to this questionnaire were coded into categories of thoughts about cartoons and thoughts not about cartoons.

Predictions. The primary purpose of this study was to demonstrate the existence of Case 3 of the heuristic, in which persons hold a strong affective expectation about an event but do not detect the mismatch between their expectations and the target object. Researchers made predictions for the effects of expectancies on reported cartoon funniness, facial mirth, evaluation times, and spontaneous thoughts which were consistent with the cases of the heuristic which the participants would represent.

Participants who were given heightened expectancies were thought to represent an "expect-to-like" condition (Wilson et al., 1989, p. 522). They would have represented Case 2 of the research heuristic when viewing the funny cartoons because the cartoons would have matched their expectations (see Table 1.1). Researchers thought that for these participants, viewing the first three genuinely funny cartoons would confirm and strengthen expectations created by the experimenter remark. As a result, when cued participants viewed the next three moderately funny cartoons they were expected to assimilate the value of moderately funny cartoons to their expectations. Consequently, participants with heightened expectancies were predicted to represent Case 3 of the heuristic when viewing the moderately funny cartoons, because they would detect no mismatch between expectations and stimulus value.

Participants who did not hear the experimenter remark that others found the cartoons really funny represented Case 1 of the heuristic when viewing the first three genuinely funny cartoons. These participants were represented as being in the "no-expectation" condition
Researchers thought that these participants most likely would develop weak target-based expectancies by seeing the first three cartoons, but that because these expectancies would be weak participants would notice the mismatch between these expectancies and the humor value of the moderately funny cartoons. If this were to happen, participants in the no-expectation condition would represent Case 4 of the heuristic when viewing moderately funny cartoons (see Table 1.1). However, the extent to which these target-based expectancies would be developed was unknown. If rating the funny cartoons did not create expectancies which affected ratings of later cartoons, participants in the no-expectation condition might have represented Case 1 of the heuristic when rating the moderately funny cartoons (see Table 1.1).

It was thought that participants in the expect-to-like and no-expectation conditions would not differ in their ratings of funniness for the first set of cartoons. It was thought that although persons in the high expectancy condition would perform theory-driven processing, and persons in the no-expectation condition would perform data-driven processing, these different processing modes would yield similar evaluations of the cartoons because the expectancies would have been accurate. For the funny cartoons, both participants who performed theory-driven evaluations based on high mirth expectations and participants who performed data-driven evaluations of funny cartoons would have evaluated the cartoons as funny. However, for the moderately funny cartoons the two groups of participants were predicted to provide different funniness ratings. Participants with heightened expectancies were predicted to assimilate the moderately funny cartoons to their heightened expectations, thereby rating the moderately funny cartoons as funnier than participants in the no-expectation condition. This would have supported the existence of Case 3 of the heuristic. Results for facial mirth were predicted to parallel funniness ratings.
Regarding evaluation times, Wilson et al. (1989) predicted similar evaluation times for the first cartoon block regardless of expectancies because the unfamiliarity of the task would cause participants to "take their time forming evaluations, even if told others had liked the cartoons" (p. 523). However, it was thought that following this warm-up period, participants in the expect-to-like condition would most likely perform the rapid theory-driven evaluations which characterize Case 3 of the heuristic. Therefore, it was predicted that they would rate the second set of moderately funny cartoons more quickly than participants who did not receive the affective biasing cue, who would perform data-driven evaluations.

Regarding numbers of thoughts reported while rating cartoons, researchers predicted that participants in the expect-to-like condition would provide fewer thoughts about the cartoons than participants in the no-expectation condition. Participants in the expect-to-like condition were expected to represent Case 2 or Case 3 of the heuristic when they evaluated the funny and moderately funny cartoons, respectively (see Table 1.1). They were expected to perform theory-driven evaluations for both cartoon sets. In contrast, participants in the no-expectation condition were expected to perform data-driven evaluations of both cartoon sets, representing Case 1 and Case 4 of the heuristic, respectively. It was thought that the additional cognitive effort required for these data-driven evaluations would cause them to produce more thoughts about the cartoons.

**Results.** Results generally confirmed predictions. The effects of expectancy and cartoon funniness interacted as anticipated to influence ratings of cartoon funniness, displayed facial mirth, and cartoon evaluation times.

Regarding funniness ratings, participants in the expect-to-like and no-expectation condition did not differ in their evaluations of the genuinely funny cartoons. However, participants in the expect-to-like condition rated the second set of moderately funny cartoons
as funnier than did no-expectation participants. Wilson et al. (1989) claimed that participants in the expect-to-like condition had assimilated the value of the cartoons to their expectations, as predicted for Case 3 of the heuristic. Facial mirth results paralleled and supported the self-reports of cartoon funniness.

Regarding evaluation times, in keeping with predictions, both cued and uncued participants did not differ in evaluation times for the first block of cartoons. Also in keeping with predictions, cued participants evaluated the second set of cartoons more quickly than uncued participants. Researchers interpreted evaluation time results as supporting the model. For the moderately funny cartoons, the shorter evaluation times for participants with high expectations suggested that they were performing theory-driven evaluations which would be expected for individuals representing Case 3 of the heuristic. The longer evaluation times from uncued participants for the moderately funny cartoons were interpreted to mean that uncued participants had noticed a disparity between the less funny cartoons and expectations of mirth which had been created by viewing the initial block of funny cartoons.

A puzzling feature of the evaluation time results was that both groups of participants appeared to evaluate the initial block of cartoons fairly quickly, in approximately 12 seconds, whereas uncued participants took markedly longer to evaluate the second cartoon set (approximately 14.3 seconds). The prediction of similar evaluation times for the first cartoon set was based on the notion that participants would have to familiarize themselves with the experimental task. This would suggest that both groups of participants should have evaluated the initial cartoon set more slowly than the second cartoon set. One might also expect that participants with strong affective expectancies, who would perform theory-driven processing, might show a more marked decrease in evaluation times than participants who had to perform data-driven processing.
Regarding the number of thoughts reported by participants after the rating procedure, participants in the expect-to-like condition reported fewer thoughts about cartoons than their counterparts in the no-expectation condition. This supported the notion that participants in the expect-to-like participants were performing theory-driven evaluations characteristic of Case 3 of the heuristic, whereas participants in the no expectation condition would have been performing data-driven evaluations characteristic of Case 4 of the heuristic.

**Wilson's Second Mirth Study**

Wilson et al. (1989) reported a more refined cartoon study which further supported their model. Two aspects of this study warrant detailed review because they are germane to the present investigation. They include alternative means of manipulating affective expectancies and an attempt to overcome their effects.

**Manipulating expectancies.** In the second mirth study, Wilson et al. (1989) sought to create a more perfect expectancy-free control condition than had been possible using the paradigm of the first mirth study. It had been thought that in the first study weak target-based expectancies of seeing funny cartoons would be created in all conditions as a result of viewing three genuinely funny cartoons before viewing the three less funny cartoons. However, this was not certain and that ambiguity of whether or not uncued participants developed these expectancies complicated interpretation of results in the initial study. If uncued participants had not been given an opportunity to develop target-based expectancies, both the low funniness ratings and extended evaluation times for the less funny cartoons could be attributed to data-driven processing. Since they were given an opportunity to develop target-based expectancies, these effects might have also resulted from efforts to overcome those expectancies when rating the less funny cartoons.
To create a cleaner control condition in which these target-based expectancies would not be a factor, a design was created which eliminated the initial set of uniformly funny cartoons. In this paradigm, expectancies were manipulated by having participants rate the funniness of twenty cartoons and receive bogus computer feedback concerning the source of the cartoons. As they rated the cartoons, a computer program informed participants in an "expect-to-like" condition that the cartoons which they rated highly were from Punch magazine. Participants in an "expect-to-dislike" condition were informed that the cartoons they rated as unfunny were from Punch magazine. Participants in an expectancy-free condition received feedback, regardless of the ratings which they supplied, that all of the cartoons they rated were from different publications than Punch magazine. To reinforce feedback provided to participants in the expect-to-like and expect-to-dislike conditions, the computer program displayed a summary of the participants' ratings and participants were asked to copy their ratings by cartoon source onto a separate sheet of paper.

After going through the rating summary procedure, all participants were informed by the experimenter that she had recently received four new cartoons from Punch magazine and were asked if they would mind rating them. All participants agreed to rate the cartoons. These cartoons were in actuality four highly funny trial cartoons.

The liking reported by participants for these cartoons confirmed predictions. Participants who expected to dislike the cartoons rated the trial cartoons as less likeable than participants who either expected to like them or had no expectations. Most findings involving facial mirth, evaluation times, and reported thoughts also confirmed predictions. These findings resulted from a paradigm with a more expectancy-free control condition. They supported the notion that the expectancy effects demonstrated in the initial mirth study did not depend on some combination of expectancies derived from the affective biasing cue and the
experience of seeing funny cartoons which was peculiar to that particular experimental paradigm.

The use of bogus computer feedback to manipulate affective expectancies had the additional advantage of eliminating the human element from the delivery of the affective biasing cue. As a result, this manipulation of expectancies was probably a more reliable procedure than that used in the initial mirth study. The affective biasing cue had been susceptible to confounding effects deriving from non-verbal communication or nuances of expression exhibited by the experimenter when delivering the cue to participants. For example, if the cue were delivered in an unconvincing manner, the experimenter could have nullified expectancies of mirth. Alternatively, the human experimenter could have unknowingly created additional demand characteristics for reports of intense mirth by emphasizing certain words in the cue (e.g., "Almost all our previous subjects thought that these ones were really funny;" Wilson et al., 1989, p. 522, emphasis added). The replication of results using this less fallible means of manipulating expectancies added validity to the Wilson et al. (1989) model.

Overcoming expectancy effects. One of the primary aims of this second cartoon study was to clearly demonstrate the existence Case 4 of the heuristic, in which participants notice a discrepancy between their expectancies and the target object and utilize data-driven processing to evaluate the object. This would supply additional support for the model by showing that an intervention based on the model's assertions could overcome the effects of affective expectancies. Additionally, Wilson et al. (1989) wished to create conditions which would demonstrate an unequivocal contrast effect, in which participants would experience an affective response that opposed their expectancies. The demonstration of a contrast effect would help to elucidate the conditions under which contrast effects occur, and provide more
support for the existence of Case 4 of the heuristic.

Wilson et al. (1989) attempted to override the effects of expectancies by varying the specificity of evaluations which participants were requested to make. They reasoned that, in general, if one were to evaluate a stimulus on a number of different dimensions rather than making a single, global rating of quality, there would be a greater likelihood of noticing that at least some of the attributes of the stimulus would not match expectations. In turn, noticing this disparity would override expectancy-based, theory-driven processing and prompt a data-driven evaluation of the object.

In order to operationalize the variable of specificity, Wilson et al. (1989) created both specific and global rating levels for each of the three expectancy conditions in the study. This produced a 3 (Expectation: expect-to-like, expect-to-dislike, no-expectation) x 2 (Specificity: global, specific) factorial design for the study. In the global rating conditions, participants viewed all four of the genuinely funny test cartoons and provided a single evaluation of funniness for the set of cartoons. Participants in specific rating conditions rated each of the funny cartoons individually. Because specific ratings were thought to cause participants to notice disparities between expectancies and the cartoons they would see, it was predicted asking for specific ratings from participants who expected to dislike the cartoons would cause them overcome their expectancies of disliking the cartoons. These participants were predicted to rate the funny cartoons similarly to participants in the expectancy-free condition. In contrast, participants in the expect-to-dislike condition who provided global ratings were predicted to assimilate the value of the cartoons to their expectations and rate the cartoons as less likeable than expectancy-free participants. Results indicated that regardless whether they provided specific or global ratings, participants who expected to dislike the cartoons evaluated them as less funny than participants in the expect-to-like or no-expectation
conditions. This study demonstrated neither the reversal of expectancy effects nor the existence of a contrast effect. To the contrary, it provided further evidence that affective expectancies would continue to exert effects under conditions which were predicted to overcome them.

Expansion of the Wilson Model

When Wilson et al. (1992) published a second paper summarizing their research on affective expectancies they expanded their model to include other mechanisms than cursory confirmation checks which might enter into the way that persons recognize or deal with a disparity between affective expectations and a target object. Although the cases in the research heuristic remained the same, these additional potential mechanisms complicated the design of interventions to overcome expectancy effects. A brief review of these other possible mechanisms is pertinent to the present investigation, if only to show what contingencies this study did not address.

Wilson et al. (1992) retained the earlier notion that persons may validate affective expectancies by using cursory checks to evaluate a limited sample of stimulus attributes. Wilson et al. (1992) augmented this notion by saying that affective expectancies might cause persons to attend selectively to only to those attributes which matched expectancies, thereby yielding a biased as well as limited sample of stimulus attributes (Hastorf and Cantril, 1954; Vallone, Ross, and Lepper, 1985). If this type of confirmation check were performed in the absence of highly noticeable stimulus attributes which would disconfirm expectations, emotion would follow from expectations.

Second, Wilson et al., (1992) suggested that affective expectancies might alter the interpretation of ambiguous stimulus attributes rather than cause only stimulus-consistent
attributes to be evaluated. They likened this idea to the change-in-meaning hypothesis demonstrated in impression formation, whereby information about a person can be interpreted differently in the light of previously formed impressions (Hamilton & Zanna, 1974; Higgins & Rholes, 1976). For example, an expectancy-free person viewing a cartoon of a cowboy lost in the desert might interpret the stark landscape and blazing sun as aversive and experience displeasure. However, a person expecting to be amused might interpret these same features as funny because they enhance the urgency of the cowboy’s plight.

As a third possible mechanism for the action of affective expectancies, Wilson et al. (1992) suggested that affective expectancies might alter overall stimulus evaluations by affecting the weighting assigned to particular attributes. They likened this scheme to Anderson’s (1981) information integration theory. They suggested that persons might form overall evaluations of stimuli by assessing all stimulus attributes rather than just a limited sample of attributes. They would then use their affective expectations as a guide to weight these assessments, and the weighted assessments evaluations of individual attributes would be summed algebraically to produce an overall stimulus evaluation. For example, expectations might affect overall liking for a cartoon which has both positive and negative attributes, such as a funny idea and poor drawing quality. Persons with no expectations of liking the cartoon might weight the two attributes evenly and exhibit a moderate level of liking for the cartoon. In contrast, persons who expect to like the cartoon might assign more importance to the funny idea, discount the poor drawing quality, and exhibit higher overall liking for the cartoon.

The fourth mechanism proposed by Wilson et al. (1992) relied upon Kahneman and Tversky’s (1974) anchoring and adjustment heuristic. Wilson et al. (1992) proposed that affective expectancies may provide persons with an initial set point for emotion prior to exposure to whatever stimulus elicits emotion. Then, after being exposed to the stimulus and
having an opportunity to evaluate it, they may not adjust their emotional reactions adequately to match the true value of the stimulus. For example, a person who views a set of mediocre cartoons with a high expectation of finding them funny may experience some positive affect immediately prior to viewing the cartoons. When the cartoons are viewed, the person may realize at some level that the cartoons do not fulfill high expectations but still not adjust the resulting emotional reaction downward to the point that this reaction would match mediocre cartoons. As a result, more mirth would be experienced than if the person did not have affective expectancies.

Critique of the Wilson model

Wilson et al. (1989, 1992) presented a simple, plausible model for the role of expectations in producing emotional experience. The model has several strengths and weaknesses.

Among its strengths, the data-driven versus theory-driven modes of cognition which it proposes are well-accepted in other fields of psychology. Moreover, the simplicity of the model enhances testability. It predicts alternative emotional responses to a given stimulus which are caused by the presence or absence of affective expectancies. The model has received convergent validation from findings that not only the quality of emotional response but also response times and numbers of thoughts produced in the evaluation process will vary with changes in affective expectancies and stimulus value.

Among its weaknesses, the Wilson et al. (1989, 1992) model presents affect as a unitary response which derives automatically from an overall summary evaluation of some stimulus. However, both mixed evaluations and mixed affective responses appear to be the rule rather than the exception in everyday experience. For example, when seeing a movie
one might find the plot tiresome but admire an actor's performance, and as a result dislike the overall movie but enjoy scenes which feature that actor. The ways in which inconsistent stimulus attributes might combine or interact in evaluation and the ways in which different affects resulting from an experience might combine or interact are not addressed by this model. Thus, the model represents only a first step in understanding top-down affective responses.

**Critique of the Wilson method**

The experimental paradigm for the first mirth study presented by Wilson et al. (1989) clearly demonstrated that affective expectancies can influence what people feel. It afforded experimental control for manipulated expectancies which enabled firm conclusions to be drawn about the existence of Case 3 in the research heuristic. It provided convergent validation for the model by providing convincing data on the primary dimensions which affective expectancies were thought to influence: affective experience, evaluation time, and spontaneous thoughts. Moreover, the paradigm yielded results with high levels of statistical significance using few participants and appeared to have ample experimental power. However, the experimental paradigm is open to criticism on several grounds.

The invariant serial position of funny and unfunny cartoon sets afforded no control for order effects or for how order might interact with other variables. Using this paradigm, one cannot examine questions such as whether people exhibit sensitization or habituation over the course of viewing repeated cartoons, or how these effects might interact with affective expectancies. Wilson et al.'s (1989) second mirth study demonstrated that affective expectancies would work without immediate prior exposure to a series of potent stimuli, but other important questions remained unanswered. For example, with a balanced design one
could explore whether target-based expectancies developed by viewing funny cartoons add meaningfully to the effects of expectancies acquired by hearing that others found the cartoons to be funny.

Another problem with the Wilson et al. (1989) study was that the sets of funny and unfunny cartoons selected for the study appeared to vary in thematic content. The difference in content across cartoon sets raises the possibility that differences in expressed and reported mirth might have resulted from an interaction between the affective biasing cue and the varying thematic content of the cartoons. In the study in question, the three funny cartoons had little sexual content, whereas two of the three unfunny cartoons featured female nudity, depicted females in arguably subservient relationships with men, and strike this writer as clearly bawdier. When participants were provided with the information that "almost all of our previous subjects thought these ones were really funny" it may have created demand characteristics peculiar to sexually oriented cartoons. Participants might have felt pressured to express mirth at viewing these cartoons in order to appear mature or to avoid appearing sexually inhibited.

The affective biasing cue used in the first Wilson et al. (1989) mirth study could be improved. Participants who were to be given high expectations of seeing funny cartoons were told "Oh, you’re lucky. Almost all of our previous subjects thought that these ones [sic.] were really funny" (Wilson et al., 1989, p. 522). With this formulation, in addition to receiving information that they would see funny cartoons participants were told that they were lucky. This could have imparted a sense of being special, which might have increased positive affect and confounded effects of expectancies on cartoon ratings. Further, the wording of the cue appeared unusual. It was possible that the unusual wording might draw participants' attention to the cue, but it seemed as likely to distract them from the message.
An additional methodological problem was that the manipulation designed to overcome the effects of affective expectancies in the second Wilson et al. (1989) mirth study appeared unlikely to succeed. In the second mirth study researchers had asked participants in a global rating condition to provide a summary rating for the four trial cartoons taken as a set, whereas participants in a specific rating condition were asked to provide individual cartoon ratings. It was thought that participants in the global rating condition would assimilate discrepant cartoons to their expectations, but that asking participants to rate cartoons individually would cause them to notice the disparity between their expectations and the actual value of the cartoons. The rationale for this manipulation was that "A stimulus is in some sense less ambiguous when evaluated on many different dimensions, because people are more apt to perceive that it has both positive and negative attributes..." (Wilson et al., 1989, p. 524). Despite this rationale, participants were not asked to rate individual cartoons on different dimensions. Instead, they were asked for summary ratings of individual cartoons. In the first mirth study, affective expectancies had already been shown to strongly influence affect when participants were asked to provide individual ratings of cartoons. It is unclear why this manipulation was expected to overcome the effects of affective expectancies.

**The Scope of the Present Investigation**

The major purpose of the present investigation was to explore ways in which the effects of affective expectancies could be overcome and to determine whether Wilson et al.'s (1989) formulation would be confirmed in another domain.

The experimental paradigm of Wilson et al.'s (1989) first mirth study was selected for replication because it appeared to create especially strong expectancies by allowing cued participants to confirm expectancies with actual target objects. It was thought that this would
maximize chances of demonstrating an expectancy effect.

Mirth was chosen for the initial replication study because the experimental paradigm had previously yielded effects with this emotion and because stimulus materials were easily developed. Attraction was chosen for the second study to extend findings beyond the emotion of mirth primarily because it represented a positive emotion. It was thought that inducing many other of the more basic emotions, such as anger, sadness, or fear, would be needlessly aversive for participants.

The Design of the Mirth Study

Overview. The mirth study was a 2 x 2 x 5 factorial design.

The independent variables were:
1) Expectancy (Cued vs. Uncued), a between-subjects variable;
2) Cartoon Set (Funny vs. Moderately Funny), a within-subjects variable; and
3) Manipulations of Cognition (Control, Enhanced Cognition, Guided Cognition, Anticipated Interaction, Delayed Responding), a between-subjects variable. This variable denoted manipulations to overcome the effects of expectancies.

The dependent variables were:
1) Self-reported Mirth at viewing each cartoon;
2) Evaluation Times for each cartoon; and
3) Spontaneous Thoughts reported by participants while rating cartoons.

Manipulation of expectancies. In the interest of replicating the first Wilson et al. (1989) mirth study its basic paradigm was retained. This included manipulating expectancies
by using a bogus cartoon set choice procedure and the presence or absence of an affective biasing cue delivered verbally by the experimenter. Participants were also exposed to three strong, followed by three weaker emotion-provoking stimuli. This procedure had yielded effects previously, and possible objections (e.g., possible demand characteristics created by the affective biasing cue, or the lack of an expectancy-free control condition) had been addressed by the initial researchers. Moreover, it was thought that this procedure would create especially strong affective expectancies by letting participants verify expectations of mirth by first viewing funny cartoons. This would enhance the likelihood of engaging the effects described in published results.

**Overcoming expectancy effects.** In order to gain additional evidence about the mechanism by which affective expectancies operate, manipulations of cognition were designed to overcome them. These manipulations were based on the rationale that overcoming the effects of affective expectancies would require that, at some level, participants notice the disparity between expectations and the true value of the stimulus.

An "Enhanced Cognition" condition was created in which participants were instructed to "Stop and think carefully before your response." The rationale for this condition was that in the Wilson et al. (1989) model, inappropriate affect was thought to result from a hastily-made, mistaken conclusion that the stimulus fulfilled affective expectations. If this were true, prompting participants to slow down and think would have allotted more time for them to notice disparities between their expectations and actual stimulus value.

A "Guided Cognition" condition was created on the rationale that in addition to providing a longer evaluation period one could encourage participants to consider various stimulus attributes by asking them for summary determinations which would require evaluation of stimulus attributes. It was thought that participants who merely paused to think
might simply repeat whatever thought had occurred to that point. or pause without thinking. The purpose of this condition was simply to engage thinking about stimulus attributes rather than to structure thought in a particular way. It was thought that such additional thought would increase the probability that participants would notice that the stimulus had negative as well as positive attributes. Hence, participants were asked to evaluate cartoons on dimensions such as "degree of personal relevance" or the "degree to which friends or family would be amused."

An "Anticipated Interaction" condition was created on the rationale that participants who knew that they would have to discuss their answers with the experimenter afterwards would possess an incentive to develop rationales for answers which they provided, which in turn would spur more thought about stimulus attributes. It was thought that the impending review of answers might prompt participants to be more thorough and adopt a more critical attitude in their thought. That this type of manipulation would increase thought was supported by research on accountability, which suggested that when persons have to justify their decisions to others, they tend to be more attentive to all of the information which they are receiving and make decisions which are more careful and complex (Tetlock, 1983).

Finally, a "Delayed Responding" condition was created in which participants performed a distraction task for a specified time before rating their affect. This condition was included as an experimental control for the activity times of the cognitive manipulations in other conditions. It was possible that affect would dissipate over the time participants needed to complete these tasks. This condition would permit ruling out the possibility that in those other conditions affect had merely decayed over time.
Hypotheses of the study

These hypotheses were based on Wilson et al's (1989) model and findings.

I. Mirth Ratings

A. In general, the affective biasing cue will produce a greater increase in mirth for the less funny cartoons than for the more funny cartoons.

B. Among participants who receive an affective biasing cue, those who are induced to exert greater cognitive effort in their analysis of the cartoons will exhibit a smaller increase in mirth for the less funny cartoons than participants who are not induced to exert this effort. This differential increase in mirth will be greater for the less funny cartoons than for the more funny cartoons.

II. Evaluation Times

A. In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less funny cartoons than for the more funny cartoons.

B. Among participants who receive the affective biasing cue, participants who are induced to exert greater cognitive effort in their analysis of the cartoons will exhibit longer evaluation times for the less funny cartoons than for the more funny cartoons. This differential increase in evaluation times will be greater for the less funny cartoons than the more funny cartoons.

III. Spontaneous Thoughts

A. In general, participants who are given an affective biasing cue will report fewer
thoughts while rating cartoons.

B. For participants who are induced to exert greater cognitive effort in their analysis of the cartoons, the affective biasing cue will cause participants to report more thoughts while rating cartoons.

IV. Manipulations of Cognition to Overcome Expectancies

A. No hypotheses are made regarding differences in mirth ratings, evaluation times, or numbers of reported thoughts between the various cognitive manipulations designed to heighten cognitive effort in the analysis of cartoons because no basis for prediction is apparent.
CHAPTER 2

MIRTH STUDY

METHOD

Cartoon selection

The study required three cartoons that would be consensually regarded as more funny and three which would be regarded as less funny. Hereafter, these cartoon sets will be described as "funny" and "moderately funny." Cartoons were selected from a collection of 386 New Yorker magazine cartoons using a two-step procedure. In the first step, nine persons who were either graduate psychology students or undergraduate research assistants screened the 386 cartoons in the collection, indicating those which they found moderately funny or funnier. These individuals were also asked to indicate cartoons which they thought might offend participants. This yielded a pool of 79 cartoons which were moderately funny or funnier and which were not flagged as possibly objectionable. From this pool, 30 cartoons were selected at random for inclusion in the second step of the cartoon selection process.

Twenty-seven male and twenty-three female introductory psychology students participated in step two of the cartoon selection process in exchange for course credit. Materials were administered to groups of 8 or fewer participants who were widely separated in a large lecture hall. Booklets were created with the 30 preselected cartoons presented in
one of two random orders and clearly numbered. Each participant was randomly assigned to one of the two presentation orders. Each participant received a booklet containing the cartoons in one of the two random orders and a separate booklet of scales to rate the cartoons. Working at their own pace, participants used a 7-point scale to respond to the statement "Please indicate how much this cartoon amuses you." The scale was anchored at a value of 1 with the caption "Not at all amused" and at a value of 7 with the words "Extremely amused."

When ratings were analyzed, mean mirth ratings for the thirty cartoons ranged from $M = 2.38$ to $M = 4.58$ on the 7-point scale. Since cartoons had been prescreened to be at least moderately funny in step one of the cartoon selection procedure, the three cartoons at the bottom of this range were selected to represent the moderately funny cartoons. The three cartoons at the top of this range were selected to represent the funny cartoons. Based on participants ratings in the second step of the selection process, the two groups of cartoons clearly differed in mirth-provoking potential ($M = 2.62$ vs. $M = 4.55$; $t_{49} = -10.75; p = .000$ two-tailed).

**Ratings of cartoons used in the Wilson study.** Photocopies of the six cartoons used in the Wilson et al. (1989) mirth study became available midway through the second step of the cartoon selection process. The Wilson cartoons had never been considered for use in the present study. The rationale for this was that the funniness of many cartoons might vary with time as the themes they depict become more or less current, and that regional differences might exist in what persons consider amusing. It had been decided to develop new cartoon sets for this study because it could be done easily and would ensure that the cartoons used in this investigation would have known levels of current mirth-provoking potential for the Ohio State University participant pool.

In order to roughly compare the mirth-provoking potential of the Wilson cartoon sets
with those developed for the present investigation, it was decided to have them rated by participants in the second step of the cartoon selection procedure. The Wilson cartoons were included as a set in the rating booklets following the last of the 30 preselected cartoons. These cartoons were presented in a manner identical to that of the first 30 cartoons in the booklets, so that raters would not be cued that the cartoons were from a different set than those viewed previously. The final 19 participants to complete step two of the cartoon selection procedure rated the Wilson cartoons after rating the 30 potential study cartoons.

For the cartoons used in the Wilson et al. (1989) mirth study, participants in this investigation provided mean mirth ratings of $M = 4.29$ for the funny cartoons and $M = 3.93$ for the moderately funny cartoons. A paired sample t-test conducted on ratings from these 19 participants did not indicate the difference was statistically significant ($t_{pin} = -1.46; p = .161$ two-tailed).

To explore the difference between ratings supplied by participants in the Wilson et al. (1989) study and those in the second step of the cartoon selection procedure, mean mirth ratings reported in the Wilson study were prorated from Wilson's 9-point scale to the 7-point scale used in this investigation. With this done, it appeared that participants in this investigation rated the set of funny cartoons similarly to participants in the Wilson et al. (1989) study ($M = 4.29$ vs. $M_{prorated} = 4.3$, respectively). However, it seemed that participants in this study might have rated the set of moderately funny cartoons as funnier than did Wilson's "no-expectation" participants ($M = 3.93$ vs. $M_{prorated} = 3.0$, respectively).

A firm conclusion is not possible regarding the reason that participants in step two of the cartoon selection process did not differ more in their ratings of the two Wilson et al. (1989) cartoon sets. The set of Wilson cartoons had been added to cartoon booklets following the 30 preselected cartoons, and no experimental controls were in place for other possible
causes of elevated ratings.

One can speculate about numerous possible causes for the lack of differences. If participants in this study did provide elevated ratings of Wilson’s moderately funny cartoon set, this might be explained by their having viewed 30 other cartoons previously. Viewing the 30 previous cartoons may have created experience-based expectancies that subsequent cartoons would be funnier, which could have elevated ratings. They may have been so aroused from rating the 30 previous cartoons that any cartoon would be viewed as funnier. Alternatively, the differences in ratings could have resulted from changes in cartoon funniness over the four years separating these studies, differences in humor appreciation between participant pools, differences in wording of the probe question, or some combination of these factors.

Whatever the explanation of the different ratings of our participants, it was thought that replicating this study with cartoon sets which did not have powerful themes such as sexuality which were present in one cartoon set and not the other would add support to the Wilson et al. (1989) model.

The Mirth study

The mirth study was designed to parallel the first Wilson et al. (1989) mirth study so that the expectancy effect might be reproduced and results of the two studies could be more easily compared. It contained a condition which would replicate the Wilson et al. (1989) study, in which no attempt was made to overcome expectancies. Participants who varied in expectation condition simply rated sets of funny and then moderately funny cartoons. It also contained three cognitive conditions in which participants underwent a cognitive manipulation designed to overcome the effects of the affective biasing cue.
Participants. Participants were 49 male and 49 female introductory psychology students who received course credit for their involvement in the study. No additional selection criteria were placed on participants. At the time of registering for the experiment, participants had an opportunity to read a study announcement sheet which informed them that they would participate in a "study of humor" in which they would rate cartoons. Participants were randomly assigned to Expectancy conditions (Cued, Uncued) and Cognitive Manipulation conditions (Control, Enhanced Cognition, Guided Cognition, Anticipated Interaction, and Delayed Responding). Gender was balanced across conditions to the extent possible. All persons participated in both levels of the Cartoon Set variable (Funny, Moderately Funny) by viewing both funny and moderately cartoon sets.

Initial procedures. Participants waited in a clearly-marked area outside the experimental rooms until it was time for their session. They were greeted individually in a friendly manner by the experimenter or by a research assistant who was trained to administer the study. Each participant interacted with only one individual while participating in the study. They were brought to a small classroom where the study was conducted. They were then invited to sit at a table, before which sat a video camera mounted on a tripod which was pointed away from the table. They were told that they would receive course credit for participation in the study and that they were free to leave at any time. Participants were assured of the confidentiality of their responses and asked to sign a consent form allowing videotaping of responses. All participants agreed to this request.

Manipulation of expectancies. Affective expectancies were created by an affective biasing cue, which was a remark made by the person administering the study. For participants who were to be given high expectations of seeing funny cartoons, the manipulation was intended to create the impression that they would see cartoons which were
funnier than others in the study. After signing the consent for taping form, all participants were shown red, blue, green and orange booklets which ostensibly contained the different cartoons to be rated in the overall study. In actuality, each booklet contained the same sequence of the three funny followed by three moderately funny cartoons. Participants were then told:

"In the first part of this study, we will be looking at these cartoons. In order to keep participants from getting tired, we have divided the cartoons into these flip books so that each person in the study will only rate a few cartoons. You get to choose whichever color book you want."

After the participant selected a booklet, participants to be given high expectations of mirth heard the experimenter casually remark "Oh, the (color) book. Almost everyone thought these were really funny." In contrast, participants who were not to be given the affective biasing cue heard the experimenter remark "Ok, here's the (color) book".

Manipulation of cognition to overcome expectancies. The manipulation of cognition to overcome affective expectations was achieved largely through having participants complete different types of rating scales, although additional instructions were supplied for some conditions. Separate rating forms were created for each condition of cognitive manipulation (see Appendix B for samples of materials). Each rating form featured separate pages for rating each cartoon. Participants were shown the booklet of scales which they were to use to rate the cartoons. Participants in all conditions of cognitive manipulation were told:

"We'll use these scales to rate each cartoon. The numbers at the tops of the pages match the numbers on the cartoons. Each scale asks you to say how much this cartoon amuses you. And on the outside we ask you to indicate your age and gender."
All participants were then given an opportunity to ask any questions they might have. Whether participants received further instructions depended on their condition of cognitive manipulation.

**Control condition.** Participants in the Control condition received no manipulation to overcome the effects of affective expectancies. They received no further instruction. They had been given rating forms which simply asked them to "Please indicate how much this cartoon amuses you."

**Enhanced Cognition condition.** Participants who were assigned to the Enhanced Cognition condition were told: "Please note that before each cartoon, we would like you to stop and think carefully before rating what you feel." They had been given rating forms which bore an admonition to "Stop and think carefully before rating your response" in large letters at the top of each page.

**Guided Cognition condition.** Participants in the Guided Cognition condition received no further instructions prior to the rating session. They had been given forms which had them use 7-point scales to rate each cartoon for personal relevance, the extent to which it was true to life, the degree to which it expressed moral values, and the degree to which family and friends would find it amusing before indicating how much it amused them.

**Anticipated Interaction condition.** Participants in the anticipated interaction condition were told "After rating these cartoons, we will ask you for your thoughts while you were rating them." They had been given received rating forms which had the words "Following the rating procedure, the experimenter will ask you for your thoughts about this cartoon" at the top of each page.

**Delayed Responding condition.** Participants in the Delayed Responding condition received forms identical to those used in the cognitive control condition, which asked them
simply to "Please indicate how much this cartoon amuses you." After being shown these forms and given an opportunity to ask questions, they were instructed how to perform the timed distraction task designed for the Delayed Responding condition. Participants were shown a lab timer which would begin timing when a button was pressed and beep when 40 seconds had elapsed. This interval approximated the time needed to complete the longest rating condition in the study, which was the Guided Cognition condition. They were told:

"What we'd like you to do each time you rate a cartoon is push the button on the timer, look at the cartoon, and then start counting backward by 3's from 100. We would like you to count out loud, as fast as you can. Then when the timer rings, turn off the beeper and rate how funny the cartoon is."

The person administering the experiment then demonstrated the procedure and made sure that the participant understood what to do. All participants appeared to master the timed distraction task quickly.

**Rating session procedures.** In the rating session participants privately viewed the cartoons and rated the amount of mirth they experienced when viewing them. Participants were videotaped so that evaluation times for each cartoon could be measured later. Participants in the various conditions of the study were provided with rating forms and instructions in the manner described above. After being given an opportunity to ask questions, all participants were then told:

"Ok, I'll be in the next room while you complete this. When you have finished, please come next door to room 5 to get me. If at any time you encounter a problem of any sort, with the timer or anything else, please come next door and get me."

The camcorder, located on a tripod in front of the table, was pointed toward the participant and turned on. A red blinking light above the lens of the camera verified that taping had
started. To identify the session on the tape, the person administering the session held a paper
with the participants study identification number in front of the camera and repeated that
number audibly twice. He then left the room and went to an adjacent room to wait for the
participant to summon him. Participants were allowed to take as long as they wished to rate
cartoons. All participants rated the same six cartoons in the same order (three funny,
followed by three unfunny cartoons). No participants reported difficulty with the distraction
procedure, and none was apparent from viewing the taped sessions.

Query session procedures. In the query session participants were probed for thoughts
they had when rating cartoons. Following the rating procedure, the person administering the
session accompanied the participant back to the room, turned off the video camera, and
invited the participant to be seated.

Participants were then queried for thoughts which they had when rating the cartoons.
They were told "Next I'd like to go through these cartoons one at a time and ask you what
you were thinking when you saw each cartoon the first time." The experimenter flipped
through the booklet, displaying each cartoon in sequence and asking "What were you thinking
when you saw this cartoon?" The experimenter wrote phrases denoting participants' thoughts
on the booklets which they had used to rate the cartoons. Phrases rather than verbatim
remarks were recorded because it was thought that if the time were taken to write
participants' responses verbatim it would slow the process and participants might limit the
number of thoughts which they reported. Abbreviations were developed for frequently heard
phrases as the study progressed. For example, if a participant said "Oh, it's another cartoon
with a mother-in-law" the experimenter might record "another MIL cart."

Participants were asked to complete a form indicating their expectations of being
amused at the point when they began viewing the cartoons. This form also asked what, if
anything, they had heard about the study prior to participation in it.

**Questionnaire procedure.** Following the query session, participants were escorted to a different private room and given three questionnaires which measured personality variables. These variables were unrelated to study hypotheses and will not be discussed further here. They included: the Positive and Negative Affect Scale (Watson, Clark, and Tellegen, 1988); the 18-item Need for Cognition Scale (Cacioppo and Petty, 1982); and the 38-item Self-Doubt Scale (Mirels and Greblo, 1994, unpublished manuscript). These questionnaires typically took participants approximately fifteen minutes to complete.

**Participant debriefing.** After completing the questionnaires, participants were given a debriefing form to read (see Appendix B). The debriefing form was kept in a separate booklet, and described the study as an "investigation of the ways in which our expectations influence our emotions." It presented the idea that emotions may arise from the meaning we attach to objects, and described how expectations might also influence emotions. Participants were informed that everyone in the study saw the same set of cartoons, and were informed of the procedure used to manipulate expectancies. It was thought that participants should be informed of the manipulation of expectancies and given an opportunity to ask questions because it was a deceptive procedure.

Informing participants of the procedure used to manipulate expectancies raised the possibility that before participating in the study, people might learn enough about it from their friends to invalidate the results. However, this was thought unlikely because few students from any particular class participated in the study. Further, it was thought that if participants had heard of the study beforehand, they would indicate that on the Prior Expectations form which participants completed following the rating session, and their data would be excluded from the study. No participant indicated prior knowledge of the study beyond information
contained in the study announcement sheet.

After being debriefed, participants were given back the cards verifying participation in the study for course credit and they were thanked warmly for their participation in the study.

**Measuring evaluation times.** Evaluation time was defined as the interval between the page strike which resulted when the participant turned the stimulus book pages and the circling of the response in the rating booklet. A stopwatch was used by the experimenter to measure and check evaluation times ($r = .98$ for the seventy-one evaluation times retained in the study). To establish inter-rater reliability for evaluation time measurements an independent coder who was uninformed about the various conditions in the study timed 5 cases selected at random from each of the four cognitive conditions ($r = .96$).

Evaluation times could be measured reliably from the tapes of seventy-one participants. Times from the eighteen participants in the Delayed Responding condition were not recorded because their responses had been purposefully delayed by 40 seconds, at the end of which participants promptly rated cartoons. (The tape was reviewed to insure that participants had followed the procedure). Seven participants in other conditions of cognitive manipulation exhibited behaviors which made timing their responses problematic. They glanced at the first few cartoons prior to rating mirth, answered two or more of the five questions for a cartoon in the guided cognition condition out of sequence, moved out of camera range, obstructed the view of pen and rating sheet with their free hand, or presented excessively fidgety response circling. Timing data from these seven participants were discarded. Times from two additional cases were wholly or partly unavailable due to technical difficulties involving the camera.
CHAPTER 3

MIRTH STUDY

RESULTS

Manipulation Check

Participants had been asked to rate their level of initial mirth expectations after the rating session. Participants reported prior mirth expectations on a 7-point scale with a range of 1 to 7 (see Table 3.1). The delivery of the affective biasing cue to participants in the expect-to-be-amused condition did not affect ratings of mirth expectations. Averaged across levels of cognition, cued and uncued participants provided similar mean rated expectations of mirth ($M = 5.08$ vs. $M = 4.88$). A T-test performed on this difference was not significant ($t_{96} = .98, p = .332$). Cued and uncued participants in the control level of the Manipulation of Cognition variable, who performed no manipulation to overcome expectancies, also did not vary reliably in mean rated mirth expectation ($M = 5.30$ vs. $M = 5.00; t_{100} = .82, p = .424$).

A 2 (Expectancy: Cued vs. Uncued) x 5 (Manipulation of Cognition: Control, Enhanced, Guided, Anticipated Interaction, Delayed Responding) analysis of variance (ANOVA) was conducted to determine whether or not participation in the various conditions of the study differentially affected the ratings of prior expectations. Neither main effects for
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Table 3.1: Mean Prior Expectations of Mirth

44
Expectancy ($E_{1.29} = 1.12, p = .292$). nor main effects for Manipulation of Cognition ($E_{1.80} = 1.00, p = .410$), nor the interaction between these variables achieved statistical significance in this analysis ($E_{1.80} = 1.43, p = .232$).

Mirth Ratings

Mirth ratings for individual cartoons were averaged over the first set of three funny cartoons and over the last set of three moderately funny cartoons to produce mean mirth ratings with a possible range of 1 to 7. Means and standard deviations for mean mirth ratings are presented in Table 3.2 (see also Figures 3.1 through 3.5 at the end of this chapter).

Mirth-provoking potential of cartoon sets. The two cartoon sets in the study clearly differed in mirth-provoking potential. In the cartoon selection process the first set of cartoons was chosen from cartoons receiving high ratings of mirth and the second set was chosen from those receiving lower ratings of mirth. A difference in mirth-provoking potential was confirmed by the ten participants in the double control condition, who received neither an affective biasing cue nor a cognitive manipulation designed to overcome its effects. These participants provided higher ratings of mirth at seeing the first set of cartoons than at seeing the second set of cartoons ($M = 4.17$ vs. $M = 3.07; t_{9} = 2.24, p = .035$). Moreover, when collapsed across the five levels of the Manipulation of Cognition variable, mirth reported by the 49 uncued participants in the study was significantly higher for the funny cartoons than for the unfunny cartoons ($M = 3.97$ vs. $M = 2.84; t_{49} = 5.55, p = .000$).

Mean mirth ratings at the midpoint of the 7-point scale suggested that even the "funny" stimuli were only moderately funny and that this might compromise comparisons with the

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2Tables containing supplementary analyses, such as ANOVA summary tables, are presented in Appendix A.
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Note. Mirth ratings for each cartoon were reported on a 7-point scale and averaged over each block of cartoons.

Table 3.2: Mean Mirth Ratings
Wilson et al. (1989) study. However, reported means for funny stimuli in the Wilson study were also close to the midpoint of their 9-point scale. Effects of affective expectancies on mirth. It had been hypothesized that "In general, the affective biasing cue will produce a greater increase in mirth for the less funny cartoons than for the more funny cartoons."

The affective biasing cue appeared to be effective even when attempts were made to overcome expectancies. Averaged across all cognitive conditions, cued participants provided higher ratings of mirth at seeing the unfunny cartoons than did uncued participants ($M = 3.37$ vs. $M = 2.84$; $t_{(80)} = 2.45, p = .017$). Similarly, a 2 (Expectancy: Cued vs. Uncued) x 5 (Manipulation of Cognition: Control, Enhanced, Guided, Anticipated Interaction, Delayed Responding) ANOVA performed on mean mirth ratings for the unfunny cartoons yielded significant main effects for cue ($F(1,89) = 5.39, p = .023$). However, this analysis yielded neither a significant Expectancy by Cognition interaction ($F(4,88) = 0.22, p = .926$) nor main effects for Cognition ($F(4,88) = 0.31, p = .870$).

Replication of Wilson et al.'s (1989) mirth results. The hypotheses which pertained to replicating Wilson et al.'s (1989) mirth results was: "In general, the affective biasing cue will produce a greater increase in mirth for the less funny cartoons than for the more funny cartoons." This implied that when no attempt was made to overcome expectancies, there would be an interaction between the Expectancy and Cartoon Set variables.

A 2 (Expectancy: Cued vs. Uncued) x 2 (Cartoon Set: Funny vs. Moderately Funny) mixed model ANOVA was performed on this portion of the study. This analysis yielded significant main effects Cartoon Set ($F(1,18) = 5.88, p = .026$), but not for Expectancy ($F(1,18) = 0.08, p = .778$). The interaction between Expectancy and Cartoon Set was marginally
significant ($F_{(1,18)} = 4.09, p = .058$; see Figure 3.1).3

Given that specific comparisons were planned based on the two predictions pertaining to mirth results when no attempt was made to overcome expectancies, further analyses of the data were conducted. Uncued participants (who had low levels of mirth expectations) showed a reliable difference in the mirth they reported at seeing the funny versus unfunny cartoons, whereas cued participants did not ($t_{(3)} = 2.47, p = .035$ vs. $t_{(3)} = .46, p = .656$, respectively). However, comparisons did not reveal statistically significant differences in mirth reported by the cued vs. uncued participants for either the funny or moderately funny cartoon sets ($t_{(18)} = -1.38, p = .184$; and $t_{(18)} = .95, p = .355$, respectively; see Figure 3.1).4

It was thought that this portion of the study might have insufficient statistical power because the number of participants in conditions where no attempt to overcome expectancies was substantially smaller than in the Wilson et al. (1989) study (20 vs 35 participants, respectively). An analysis of statistical power for the cue Expectancy by Cartoon Set interaction in this portion of the study revealed a power level of approximately .45, which was substantially lower than the .80 level recommended by Cohen and Cohen (1983).

The marginally significant interaction in a study which lacked statistical power suggested that cued participants reported less mirth than uncued participants for the funny cartoons, as well as more mirth for the less funny cartoons. The results of the specific

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3When three cases were excluded as outliers because they did not report more mirth for the first set of cartoons than the second, the significance level for the expectancy by cartoon set interaction improved ($F_{(1,15)} = 5.09; p = .039$).

4When 3 cases were excluded as outliers because they did not report more mirth for the first set of cartoons than the second, a significant difference was found for the first set of cartoons, but not the second ($t_{(1)} = 2.16; p = .047$; and $t_{(1)} = 0.72; p = .481$, respectively).
comparisons, together with the finding that cued participants in the overall study reliably reported more mirth for the moderately funny cartoons, support this interpretation.

**Overcoming mirth expectations.** Two of the study hypotheses pertained to overcoming mirth expectations: 1) "In general, the affective biasing cue will produce a greater increase in mirth for the less funny cartoons than for the more funny cartoons;" and 2) "Among participants who receive an affective biasing cue, those who are induced to exert greater cognitive effort in their analysis of the cartoons will exhibit a smaller increase in mirth for the less funny cartoons than participants who are not induced to exert this effort. This differential increase in mirth will be greater for the less funny cartoons than for the more funny cartoons." The combination of these statements implied an interaction between the variables of Expectancy, Cartoon Set, and Manipulation of Cognition to overcome expectancies. This prediction was not confirmed.

A 2 (Expectancy: Cued vs. Uncued) x 2 (Cartoon Set: Funny vs. Moderately Funny) x 5 (Manipulation of Cognition: Control, Enhanced, Guided, Anticipated Interaction, Delayed Responding) mixed model ANOVA was performed on mean mirth ratings from all participants. Neither main effects for Manipulation of Cognition, nor the Manipulation of Cognition by Expectancy interaction, nor the predicted Manipulation of Cognition by Expectancy by Cartoon Set interaction approached significance in this analysis ($F_{(4,85)} = 0.10, p = .981; F_{(4,85)} = 0.66, p = .621; \text{ and } F_{(4,85)} = 0.64, p = .637$, respectively). The addition of covariates to analyses did not elucidate effects for cognition (see appendix A for analyses).

Other analyses to explore other facets of these predictions yielded no significant effects. For example, the 2 (Expectancy: cued vs. uncued) x 5 (Manipulation of Cognition: control, enhanced, guided, anticipated interaction, delayed responding) ANOVA performed on
mean mirth ratings for the unfunny cartoons mentioned previously yielded neither significant main effects for the Manipulation of Cognition variable nor significant effects for the interaction between Expectancy and Manipulation of Cognition ($F_{(4,88)} = 0.28$, $p = .926$; and $F_{(4,88)} = 0.39$, $p = .870$, respectively, see Appendix A for analyses).

**Evaluation Times**

Evaluation times were obtained from seventy-one participants (see Chapter 2, p. 49 for coding procedures). Evaluation times were averaged across the blocks of funny and unfunny cartoons (See Table 3.3 and Figures 3.6 through 3.9).

Replication of Wilson et al.'s (1989) evaluation time results. It was hypothesized that: "In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less funny cartoons than the more funny cartoons." This hypothesis implied that there would be a significant interaction between the Expectancy and Cartoon Set variables for this part of the study. This prediction was not confirmed.

A $2 \times 2$ mixed model ANOVA performed on evaluation times from participants in the condition where no attempt was made to overcome expectancies yielded significant main effects for Cartoon Set ($F_{(1,15)} = 6.96$, $p = .019$). Interestingly, when no attempt was made to overcome expectancies, both cued and uncued participants in this part of the study took longer to evaluate the second set of moderately funny cartoons than the first set of funny cartoons. However, neither main effects for Expectancy nor for the Expectancy by Cartoon Set interaction achieved significance in this analysis ($F_{(1,15)} = 0.81$, $p = .381$; and $F_{(1,15)} = 0.14$, $p = .711$, respectively).

This failure to reproduce the Wilson et al. (1989) evaluation time results raised the
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<td>25.57</td>
<td>10.39</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>36.95</td>
<td>9.85</td>
</tr>
<tr>
<td>Anticipated Interaction</td>
<td>17.33</td>
<td>5.57</td>
</tr>
</tbody>
</table>

Note. Mean evaluation times are presented in seconds. Evaluation times were measured separately for each cartoon and averaged over each block of cartoons.

Table 3.3: Mean Evaluation Times for the Mirth Study
question of whether the different methodology used to present cartoons in this study may have been responsible for the lack of findings. In this study, cartoons were presented in booklets rather than by using a slide projector. It was thought that the additional time needed to manipulate booklet pages may have introduced additional error variance or extended total evaluation times to the point where differences in evaluation times of a few seconds would not be significant. However, evaluation times in this study were only slightly longer than those reported by Wilson, ranging from approximately 16 to 19 seconds versus 11 to 15 seconds.

Effects of Manipulation of Cognition on evaluation times. Two hypotheses pertained to whether the manipulations intended to overcome affective expectancies would have different effects on evaluation times for the two expectancy conditions and for the two cartoon set conditions: 1) "In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less funny cartoons than the more funny cartoons." and 2) "Among participants who receive the affective biasing cue, participants who are induced to exert greater cognitive effort in their analysis of the cartoons will exhibit longer evaluation times for the less funny cartoons than participants who are not induced to exert this effort. This differential increase in evaluation times will be greater for the less funny cartoons than the more funny cartoons." The combination of these hypotheses implied that the Manipulation of Cognition variable would be involved in a three-way interaction with the variables of Expectancy and Cartoon Set. This prediction was not confirmed.

A 2 (Expectancy: Cued, Uncued) x 2 (Cartoon Set: Funny, Moderately Funny) x 4 (Manipulation of Cognition: Control, Enhanced, Guided, and Anticipated Interaction) mixed model ANOVA was performed on mean evaluation times. It yielded significant main effects

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Since response times for the Delayed Responding condition were purposefully
for Manipulation of Cognition ($E_{o,63} = 22.12, \ p = .000$) and Cartoon Set ($E_{1,63} = 6.00, \ p = .017$), but not for the Expectancy variable ($E_{1,63} = 0.02, \ p = .879$). The main effect for Manipulation of Cognition merely reflected the additional time needed by participants to process the cognitive manipulations. The main effect for Cartoon Set indicated that for the study as a whole, participants took longer to rate the second set moderately funny cartoons than the first set of funny cartoons.

The predicted three-way interaction between the Manipulation of Cognition, Expectancy, and Cartoon Set variables did not achieve statistical significance in this analysis ($E_{o,63} = 0.97, \ p = .412$). Neither did the interaction between Manipulation of Cognition and Expectancy ($E_{o,63} = 1.72, \ p = .172$). However, the Manipulation of Cognition variable interacted with Cartoon Set (Funny vs. Moderately Funny cartoons) to affect evaluation times ($E_{o,63} = 2.87, \ p = .043$). Participants in the Guided Cognition condition, who rated cartoons on several dimensions before rating mirth, evaluated the first set of cartoons more slowly than the second. Participants in all other levels of Manipulation of Cognition evaluated the first set of cartoons more quickly than the second (See Table 3.3 and Figures 3.6 through 3.9).

Spontaneous Thoughts

The experimenter tallied spontaneous thoughts for each cartoon, with the following rules: 1) "I don't get it" or "I don't know" counted as one thought; 2) an evaluation such as "it's ok" or "it's not funny" counted as one thought; 3) restated ideas did not count as additional thoughts; 4) descriptions of objects which the cartoon actually depicted counted as one thought; and 5) adjectives each counted as one thought (e.g., "goofy, excited" counted as controlled, they were not entered into analyses.
two thoughts). To establish inter-rater reliability a research assistant also used these rules to tally thoughts reported while viewing the cartoons ($r = .91$).

The number of spontaneous thoughts provided by participants were summed for all six cartoons and for the funny and moderately funny cartoon sets separately (see Table 3.4). The number of thoughts summed across all six cartoons ranged from 8 to 31 thoughts. The number of thoughts summed across the funny cartoon set ranged from 3 to 19 thoughts. The number of thoughts summed across the moderately funny cartoon set ranged from 3 to 16 thoughts. Reported thoughts are presented in Table 3.4.

Replication of Wilson et al.'s (1989) reported thoughts results. It had been predicted that: "Participants who are given an affective biasing cue will report fewer thoughts while rating cartoons." This prediction was not confirmed. When no attempt was made to overcome expectancies cued participants actually reported slightly more spontaneous thoughts, although this difference did not achieve statistical significance ($M = 14.80$ vs. $M = 13.30$ respectively, $t_{(18)} = .75$, $p = .460$). This pattern of responding held for spontaneous thoughts summed separately for the funny cartoons ($M = 7.40$ vs. $M = 6.50$ respectively, $t_{(18)} = .82$, $p = .424$) and for the unfunny cartoons ($M = 7.40$ vs. $M = 6.80$ respectively, $t_{(18)} = .57$, $p = .576$).

Effects of Manipulation of Cognition on reported thoughts. Two hypotheses pertained to the number of reported thoughts in the overall study: 1) "In general, participants who are given an affective biasing cue will report fewer thoughts while rating cartoons;" and 2) "For participants who are induced to exert greater cognitive effort in their analysis of the cartoons, the affective biasing cue will cause participants to report more thoughts while rating cartoons."
<table>
<thead>
<tr>
<th>Condition</th>
<th>Total Thoughts M</th>
<th>SD</th>
<th>Funny Cartoons M</th>
<th>SD</th>
<th>Moderately Funny Cartoons M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Population</td>
<td>15.71</td>
<td>4.17</td>
<td>8.03</td>
<td>2.47</td>
<td>7.68</td>
<td>2.49</td>
<td>98</td>
</tr>
<tr>
<td>All Cued Participants</td>
<td>16.10</td>
<td>4.18</td>
<td>8.37</td>
<td>2.53</td>
<td>7.73</td>
<td>2.70</td>
<td>49</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>14.80</td>
<td>5.03</td>
<td>7.40</td>
<td>2.63</td>
<td>7.40</td>
<td>2.76</td>
<td>10</td>
</tr>
<tr>
<td>Enhanced Cognition</td>
<td>17.90</td>
<td>3.25</td>
<td>9.30</td>
<td>1.64</td>
<td>8.60</td>
<td>2.76</td>
<td>10</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>16.20</td>
<td>3.71</td>
<td>9.00</td>
<td>3.20</td>
<td>7.20</td>
<td>2.44</td>
<td>10</td>
</tr>
<tr>
<td>Anticipated Interaction</td>
<td>16.70</td>
<td>4.30</td>
<td>8.50</td>
<td>1.72</td>
<td>8.20</td>
<td>3.49</td>
<td>10</td>
</tr>
<tr>
<td>Delayed Responding</td>
<td>14.78</td>
<td>4.44</td>
<td>7.56</td>
<td>3.05</td>
<td>7.22</td>
<td>2.55</td>
<td>9</td>
</tr>
<tr>
<td>All Uncued Participants</td>
<td>15.32</td>
<td>4.16</td>
<td>7.69</td>
<td>2.39</td>
<td>7.63</td>
<td>2.29</td>
<td>49</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>13.30</td>
<td>3.77</td>
<td>6.50</td>
<td>2.27</td>
<td>6.80</td>
<td>1.87</td>
<td>10</td>
</tr>
<tr>
<td>Enhanced Cognition</td>
<td>15.50</td>
<td>3.21</td>
<td>7.80</td>
<td>1.55</td>
<td>7.70</td>
<td>2.11</td>
<td>10</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>16.40</td>
<td>4.38</td>
<td>8.00</td>
<td>1.76</td>
<td>8.40</td>
<td>2.91</td>
<td>10</td>
</tr>
<tr>
<td>Anticipated Interaction</td>
<td>16.30</td>
<td>5.40</td>
<td>8.40</td>
<td>3.84</td>
<td>7.90</td>
<td>2.02</td>
<td>10</td>
</tr>
<tr>
<td>Delayed Responding</td>
<td>15.11</td>
<td>3.76</td>
<td>7.78</td>
<td>1.79</td>
<td>7.33</td>
<td>2.55</td>
<td>9</td>
</tr>
</tbody>
</table>

**Note.** The numbers of reported thoughts were summed across each block of cartoons and for both blocks of cartoons.

**Table 3.4: Mean Spontaneous Thoughts for the Mirth Study**
These predictions implied an interaction between the Manipulation of Cognition and Expectancy variables. This prediction was not confirmed.

A 2 (Expectancy: Cued, Uncued) x 2 (Cartoon Set: Funny, Moderately Funny) x 4 (Manipulation of Cognition: Control, Enhanced, Guided, and Anticipated Interaction) mixed model ANOVA was performed on mean spontaneous thoughts. This analysis did not yield significant main effects for Expectancy, Cartoon Set, or Manipulation of Cognition ($F_{(1,80)} = 0.79, p = .375; F_{(1,80)} = 1.55, p = .216; and F_{(1,80)} = 1.50, p = .210$, respectively). Further, neither the interaction between Manipulation of Cognition and Expectancy, nor the three-way interaction between Manipulation of Cognition, Expectancy, and Cartoon Set were significant in this analysis ($F_{(3,80)} = 0.38, p = .820; and F_{(3,80)} = 0.61, p = .653$, respectively).

Summary of Mirth Study Results

In the mirth study most results did not confirm predictions. Evidence was found that expectations of mirth increased mirth at viewing moderately funny cartoons, despite manipulations to overcome that effect. When no attempt was made to overcome expectancies, high expectations of mirth appeared to have different effects for the two different cartoon sets: decreasing mirth at seeing funny cartoons and increasing mirth at seeing moderately funny cartoons. It was not shown that people with strong expectancies expectancies would rate cartoons which did not meet expectations more quickly than people with weak expectancies, or that they would report fewer thoughts at the time of evaluation. Instead, cued and uncued participants in this part of the study took longer to evaluate the second set of cartoons than the first, and they did not differ in the number of thoughts they reported when viewing cartoons.
It was not shown that the cognitive manipulations in the study could overcome the
effect of expectancies on mirth, evaluation times, or numbers of reported thoughts. Instead,
manipulation of cognition demonstrated an unexpected effect on evaluation times. Both cued
and uncued participants in the Guided Cognition condition, who evaluated cartoons on
numerous dimensions, evaluated the second set of cartoons more quickly than the first. In
contrast, participants in other conditions of Cognitive Manipulation evaluated the first set
cartoons more quickly than the second.
Note. Mirth at viewing each cartoon was reported on a 7 point scale. These ratings were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.1: Mirth When No Attempt was Made to Overcome Expectancies
Note. Mirth at viewing each cartoon was reported on a 7 point scale. These ratings were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.2: Mirth When Participants Were Asked to "Stop and Think"
Note. Mirth at viewing each cartoon was reported on a 7 point scale. These ratings were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.3: Mirth When Participants First Rated Cartoons on Several Dimensions
Note. Mirth at viewing each cartoon was reported on a 7 point scale. These ratings were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.4: Mirth When Participants Knew They Would Have to Discuss Their Ratings
Note. Mirth at viewing each cartoon was reported on a 7 point scale. These ratings were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.5: Mirth Following a Distraction Task
Note. Mean evaluation times for each cartoon were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.6: Evaluation Times When No Attempt was Made to Overcome Expectancies
Note. Mean evaluation times for each cartoon were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.7: Evaluation Times When Participants Were Asked to "Stop and Think"
Note. Mean evaluation times for each cartoon were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.8: Evaluation Times When Participants First Rated Cartoons on Several Dimensions
Note. Mean evaluation times for each cartoon were averaged over the three cartoons in both the Funny and Moderately Funny cartoon blocks.

Figure 3.9: Evaluation Times When Participants Knew They Would Have to Discuss Their Ratings
CHAPTER 4

MIRTH STUDY

DISCUSSION

Manipulation check

Participants who heard the experimenter remark that everyone thought that the cartoons which they would see were really funny did not report higher levels of mirth expectancies than uncued participants. This was puzzling given that cued participants reported more intense mirth experiences when viewing moderately funny cartoons. The lack of experimental controls for other possible influences on the manipulation check renders the meaning of this result ambiguous.

Expectancies may not have been manipulated. Participants’ mirth expectancies might have been so high prior to the experiment that they could not be raised further. However, this seemed unlikely because mean reported mirth expectancies for participants in most conditions were only slightly above the midpoint of the 7-point mirth expectancy scale (see Table 3.1).

If expectancies were not manipulated then the higher mirth ratings at viewing moderately funny cartoons might have been misreports. Demand characteristics induced by the affective biasing cue could have produced misreports, but this seemed unlikely for two
reasons. First, one would expect that demand characteristics which would inflate reports of
mirth for moderately funny cartoons would also inflate ratings of prior expectations, but this
did not happen. Secondly, the possibility that this manipulation induced demand
characteristics had been refuted by facial coding results presented by the original researchers
(Wilson et al., 1989).

A more likely possibility is that despite the lack of confirmation from the manipulation
check, expectancies were being manipulated and participants reported emotional experience
accurately. This notion is supported by the expected finding of enhanced mirth for cued
participants viewing moderately funny cartoons, the design of the manipulation, and the
previous Wilson et al. (1989, 1992) findings for the influence of affective expectancies.

If expectancies were manipulated and mirth reports were accurate, it would mean that
the manipulation check question was insensitive to differences in expectancies which existed
just before participants began rating cartoons. Participants may have been unable to report
prior expectancies accurately because they forgot their previous level of expectancies over the
minutes which it took to rate the cartoons and summon the experimenter from the next room.
Alternatively, memories of expectancies of mirth developed through seeing the cartoons could
have interfered retroactively with memories of expectancies which existed before exposure to
the cartoons. Participants may have been unable to report prior expectancies accurately
because they did not encode them in the first place, perhaps because expectancies were raised
so subtly that they didn’t pay attention to their expectations.

Mirth study findings

Most mirth findings did not confirm predictions. A weak but reliable effect was
demonstrated for affective expectancies, wherein high expectations of mirth enhanced mirth at
viewing moderately funny cartoons. This is noteworthy insofar as the effect appeared to endure cognitive manipulations designed to overcome it. Beyond this, however, most results did not confirm the hypotheses.

Replication of Wilson’s results

In this study, conditions in which participants did not perform a cognitive manipulation to overcome the effects of expectancies corresponded to the conditions in Wilson et al.’s (1989) second mirth study. Findings from this part of this study were inconclusive. They indicated that the effects seen for affective expectancies in this part of the study differed substantially from those in Wilson’s study. They clearly did not replicate the Wilson’s results, but they paralleled that study in important respects.

The cartoon sets in each study appeared to have similar mirth-provoking potential, because the uncued participants in each study provided mirth ratings for the two blocks of cartoons which had similar ranges and intensities.

Expectancies appeared to affect mirth in both studies. In both studies, when expectancies were not manipulated participants rated the first block of cartoons as funnier than the second block of cartoons. In both studies, when expectancies were enhanced there was little difference in ratings which participants provided for the funny and moderately funny cartoon sets.

However, there were more differences than similarities between results from the part of this study where no attempt was made to overcome expectancies and the Wilson et al. (1989) study.

Mirth ratings. Regarding mirth ratings, in the Wilson et al. (1989) study, cued participants did not differ from uncued participants in their ratings for the funny cartoons, but
they provided higher ratings than uncued participants for the moderately funny cartoons. In contrast, in this study participants who had high expectations of mirth appeared to report less mirth than uncued participants for the first block of funny cartoons. This suggested that the first block of cartoons did not confirm expectations of mirth. However, cued participants in this study appeared to report more mirth for the second block of cartoons, which suggests that expectancies in some form were still effecting mirth.

**Evaluation times.** Regarding evaluation times, Wilson et al. (1989) had found that uncued participants took longer to evaluate the second block of moderately funny cartoons than the first block of funny cartoons. This was interpreted to mean that persons who had only weak expectancies of mirth from seeing the first three cartoons had noticed the discrepancy between their expectations and the cartoons and had performed data-driven processing of the cartoons. Cued participants in the Wilson study evaluated the second block of cartoons more quickly than the first. In contrast, in this study both cued and uncued participants took longer to evaluate the second block of moderately funny cartoons than the first block of funny cartoons. This suggests that both groups might have noticed a disparity and performed data-driven processing.

**Spontaneous thoughts.** Wilson et al. (1989) had found that participants with high expectancies of mirth reported fewer thoughts about the cartoons than uncued participants, which led them to conclude that cued participants had performed theory-driven evaluations and uncued participants had performed data-driven evaluations. In the present study, cued and uncued participants did not vary in the number of thoughts they reported while viewing the cartoons. Evaluation times did not provide evidence that cued and uncued participants were using different modes of cognitive processing.

**Conclusions.** When no attempt was made to overcome expectancies most predictions
were unconfirmed. Findings were inconclusive due to the lack of differences between groups on most variables. Given the previous research which had validated the model, the unconfirmed predictions in this study suggest that cued participants particularly did not represent the anticipated cases in the research heuristic. This may have happened if, as the results suggest, cued participants had high expectations of mirth which were weakened or disconfirmed by the first set of funny cartoons. However, even if this happened the multiple possibilities which might explain the pattern of results in this part of the study make firm conclusions impossible.

It had been thought that cued participants would conduct theory-driven evaluations of each block of cartoons. They were predicted to represent Case 2 of the heuristic when viewing the funny cartoons because those cartoons would match their expectancies. They were predicted to represent Case 3 of the heuristic when viewing the moderately funny cartoons because they would not notice a mismatch between expectancies and the cartoons they saw (see Table 1.1). This drove predictions that cued participants would report more mirth, exhibit lower evaluation times, and report fewer thoughts for moderately funny cartoons than uncued participants.

In the present study, if cued participants had high expectations of mirth and noticed a disparity between mirth expectancies and the first block of cartoons, they would have conducted data-driven rather than theory-driven evaluations of the cartoons. This notion is supported by the similar numbers of thoughts provided by cued and uncued participants for the first cartoon block. That cued participants reported less mirth for the first block of cartoons than uncued participants suggested that they might have evaluated the funny cartoons counter to their expectations. These considerations suggest that cued participants represented Case 4 of the heuristic when viewing the first cartoon block (see Table 1.1).
When cued participants went on to view the second block of cartoons, expectations which were based on the affective biasing cue would have been weakened or disconfirmed and it is uncertain what they would have expected. They appeared to provide higher mirth ratings for the second cartoon block than uncued participants, which suggests that expectancies still operated. However, the non-significant differences in evaluation times and numbers of reported thoughts suggests that they performed data-driven processing, rather than the theory-driven processing thought to operate in expectancy-based evaluations.

It is possible that cued participants viewing the second block of cartoons were not represented by any of the cases in the Wilson et al. (1989) model. In the present study, expectancies may not have been clearly disconfirmed. Cued participants might have had expectancies of high mirth from the cuing procedure which conflicted with target-based expectancies developed though seeing the first cartoon set. Conceivably, they could have performed top-down evaluations using each set of expectancies and then checked to see which evaluation matched best.

These ambiguities make detailed, firm conclusions about the mirth study results impossible.

Overcoming the effects of affective expectancies

Participants who underwent manipulations to overcome expectancy effects were not shown to differ meaningfully from those who did not.

It had been thought that these procedures would cause participants who initially had high expectations of mirth to notice discrepancies between their expectations and the value of the cartoons. This would have prompted them to abandon theory-driven processing and perform data-driven evaluations of the cartoons. They would exhibit decreased mirth.
lengthened evaluation times, and fewer reported thoughts than cued participants in the control condition who did not undergo manipulations to overcome expectancies. Given the unexpected performance of cued participants in the control condition, it is unknown whether these manipulations would overcome the type of expectancy effects reported by Wilson et al. (1989).

**Mirth ratings.** It was found that even when attempts were made to overcome expectancies, cued participants reported more mirth than uncued participants for moderately funny cartoons. Although the effect appeared modest, the magnitude of mean mirth enhancement for cued participants represented approximately 40% of the range over which cartoons were evaluated when expectancies were not enhanced. The meaning of this result is ambiguous. Higher mirth ratings provided by cued participants for the less funny cartoons might mean that the manipulations designed to overcome mirth expectancies were ineffective. However, it is also possible that these manipulations were effective, but that the decrease in mirth at viewing the less funny cartoons could not be demonstrated. The primary comparison group for cued participants undergoing manipulations of cognition to overcome expectancies were cued participants who did not complete these procedures. As mentioned previously, that group of participants may have had expectancies disconfirmed by viewing the first block of cartoons, and may not have reported as much mirth for the less funny cartoons as they would have if expectancies were not disconfirmed.

**Evaluation times.** It had been thought if an attempt was made to overcome expectancies, cued participants would take longer to rate the second set of cartoons because the task would prompt them to notice that the cartoons did not meet their expectations. Noticing this disparity was thought to be a time-consuming process. However, cued and uncued participants who performed the same cognitive task were not found to differ in
evaluation times. The meaning of this result is ambiguous. It might mean that the cognitive manipulations did not cause cued participants to notice a discrepancy between their expectations and the cartoons. The increase in mirth reported by cued participants for the moderately funny cartoons supports this view.

An unexpected result occurred in an area where no basis had existed for making predictions. It was found that for all of the manipulations except the Guided Cognition condition, both cued and uncued participants took longer to rate the second set of cartoons than the first. For participants in the Guided Cognition condition, who rated the cartoons on numerous dimensions, both cued and uncued participants took longer to rate the first set of cartoons. The shorter times for the second block of cartoons may have represented a practice effect. Participants in the Guided Cognition condition evaluated the cartoons on several dimensions before rating mirth (e.g., "degree to which family and friends would be amused"). Since the dimensions were the same for each cartoon, as participants rated cartoon after cartoon they would have become more familiar with the rating dimensions and would not have to spend as much time reading and interpreting the questions.

**Spontaneous thoughts.** It was thought if an attempt was made to overcome expectancies, cued participants would report more thoughts at the time of evaluating the cartoons than their uncued counterparts. The rationale for this was that they would notice the disparity between their expectations and the cartoons, which would have entailed more cognition. This prediction was not confirmed.

No firm conclusions are possible regarding the lack of differences in numbers of spontaneous thoughts. The most likely explanation may be that the cognitive manipulations themselves caused participants to perform the amount of cognition which would result from noticing a disparity. Alternatively, the amount of additional cognition entailed by noticing a
disparity might be fairly small. This limited additional cognition might induce so few thoughts that it would not add significantly to the number of thoughts induced by the cognitive manipulation.

**Improving the paradigm**

Both the basic design of this paradigm and the way it was operationalized complicated interpretation of the mirth study results. Some of the difficulties apparent in the mirth study suggested ways to improve this paradigm.

**Order effects.** The design of the study involved presenting the blocks of funny and unfunny cartoon sets in invariant order. This limited conclusions which could be drawn because it afforded no experimental control for effects which could be related to the order of cartoon presentation.

The rationale for this procedure appeared sound. This paradigm was created primarily to demonstrate the existence of Case 3 of the research heuristic, in which persons did not notice disparities between expectations and target objects. It was thought that this would require strong expectancies, which this paradigm provides by giving participants who have received the affective biasing cue an opportunity to confirm those expectations by first viewing three funny cartoons. The first three cartoons therefore represented a treatment as well as a trial condition.

When one assesses results from the first block of cartoons, differences in results can be attributed to the presence or absence of expectancies created by the affective biasing cue, because this is presumably the only difference between cued and uncued participants. However, when one assesses the results from the second block of cartoons interpretation becomes more difficult because even though both groups of participants view the same first
block of cartoons, it may affect their expectations in different ways.

As an example, results suggested that when no attempt was made to overcome expectations, viewing the first block of cartoons did not confirm previous expectancies, but altered them in an indeterminate way. Without a comparison group of cued participants who did not receive the "treatment" of viewing the first three cartoons, one can neither confirm nor rule out exposure to the first block of cartoons as a cause of results for the second cartoon block.

To correct this problem one might eliminate the first "treatment" block of cartoons, counterbalance conditions for order, or include a condition in which participants rate the second block of cartoons without first rating a block of funny cartoons. Counterbalancing would be the best of these options because it would retain a condition in which strong expectations are likely to exist and still afford an experimental control for the treatment effects of viewing the first block of cartoons. However, this would double the number of participants required. Alternatively, it might be possible to survey levels of expectancies prior to each cartoon block. Asking a probe question would appear to be the least preferable option because asking persons to consciously assess expectations might cause them to alter their expectations.

Reported thoughts. One might attribute the lack of replication of findings for numbers of spontaneous thoughts to a different procedure than that used by Wilson et al. (1989). In the Wilson study, participants had been asked to describe their thoughts or feelings when rating cartoons using a questionnaire. In this study, participants were interviewed by the person administering the study and probed for their thoughts when viewing each cartoon. This may have created additional demand to provide more rationales for cartoons which were rated with less conscious deliberation. One option for improving this paradigm would be to
use a paper and pencil questionnaire, which could reduce potential demand characteristics incurred by an interview.

**Cartoon booklets.** Another instance in which differences in operationalizing variables may have impaired ability to elucidate results was that in this study cartoons were presented in booklets rather than using the Wilson *et al.* (1989) method of a slide projector. The use of booklets to present cartoons meant that facial mirth could not be coded, because participants turned their faces away from the camera when they looked down to view the cartoon booklet on the table. Facial mirth results provided evidence for convergent validation in the Wilson *et al.* (1989) study, and may have helped to elucidate results here.
CHAPTER 5

ATTRACTION STUDY

INTRODUCTION

**Purpose.** The mirth study demonstrated that affective expectancies could enhance mirth at viewing moderately funny cartoons even when participants performed cognitive manipulations which were designed to make them notice that the cartoons which they saw did not confirm their expectations. The principle aim of the attraction study was to demonstrate that expectancies would operate in the domain of attraction. Additionally, an attempt was made to overcome expectancy effects using a manipulation based on the Wilson *et al.* (1989) model.

It was thought that overcoming expectancy effects might depend on demonstrating stronger expectancy effects than those seen in the mirth study. In the mirth study, demonstrating that expectancies had been overcome depended on comparisons between groups of participants who initially had high mirth expectancies. The groups differed in whether or not they performed one of the cognitive manipulations designed to overcome expectancies. As related in the previous section, results on evaluation times and numbers of reported thoughts from the group which did not perform these manipulations were markedly different than expected based on Wilson’s results. It seemed likely that their expectancies might have
been weakened by the first set of funny cartoons, and that they may not have been performing
the predicted theory-driven processing when they evaluated the second group of cartoons. If
this were the case, the levels of mirth which they reported may have been reduced from what
they would have been if expectancies had not been altered. Therefore, this study sought to
produce a strong expectancy effect which would include not only highly enhanced reports of
affect, but also the faster evaluation times and reduced numbers of spontaneous thoughts
reported by Wilson et al. (1989).

Manipulating expectancies. If high expectancies of mirth were altered simply by
viewing the first set of funny cartoons in the mirth study, it seemed likely that those cartoons
simply were not funny enough confirm expectations. The probability of this happening in the
attraction study might be decreased by enhancing the quality of the stimuli or by reducing the
level of attraction expectations. For the attraction study, this motivated a decision to use
photographs which were both current and the most attractive available. It was thought that
weakening or lowering attraction expectations would make it less likely that cued participants
would demonstrate a strong expectancy effect.

Overcoming expectancy effects. With no indisputable reason for preferring one
condition of cognitive manipulation over another, the Guided Cognition condition was retained
in the study. An impressionistic review of mirth study data suggested that it might be more
effective in overcoming expectancy effects than other manipulations which had been created.
The Guided Cognition task appeared to provide the greatest control over cognition, and this
might increase the likelihood of participants noticing discrepancies between attraction
expectations and the target persons they viewed.

Sample size. It was also felt that the sample size should be increased for the attraction
study because the mirth study appeared to have had inadequate statistical power. A
hypothetical sample size determination, based on the effect size of the marginally significant interaction for the conditions which replicated Wilson et al.'s (1989) study, suggested that with a sample of 20 participants per condition power would have been approximately .75, which would be within the range recommended by Cohen and Cohen (1983). Increasing the sample size to this level with 80 participants available required that two of the conditions of cognitive manipulation be dropped from the study.

**Spontaneous thoughts.** Finally, the probe procedure for spontaneous thoughts was altered from a verbal, experimenter-delivered procedure to a free-form written report (see Appendix B). Having the experimenter ask participants for thoughts about target persons when rating each photograph might create a demand to report thoughts which had not occurred when rating the photographs. It was thought that a written response format might lessen possible demand for generating reports of thoughts. The Wilson et al., (1989) procedure of probing for all thoughts participants might have during the rating session was not adopted because it was thought that with people as targets rather than cartoons it would be difficult to discriminate thoughts about target persons from thoughts not about target persons.

**The Design of the Attraction Study**

**Overview.** The attraction study closely paralleled the design of the mirth study, the only difference being the reduced number of conditions for manipulations to overcome expectancy effects. It was a $2 \times 2 \times 2$ factorial design.

The independent variables were:

1) Expectancy (Cued vs. Uncued), a between-subjects variable;
2) Photograph Set (Attractive, Moderately Attractive), a within-subjects variable; and
3) Manipulations of Cognition (Control, Guided Cognition), a between-subjects variable. This variable denoted manipulations to overcome the effects of expectancies.

The dependent variables were:
1) Self-reported attraction at viewing each photograph;
2) Evaluation Times for each photograph; and
3) Spontaneous Thoughts reported by participants while rating attraction.

**Hypotheses of the Attraction Study**

These hypotheses were based on Wilson et al.'s (1989) model and findings.

I. Attraction Ratings

A. In general, the affective biasing cue will produce a greater increase in attraction for the less attractive target persons than for the more attractive target persons.

B. Among participants who receive an affective biasing cue, those who are induced to exert greater cognitive effort in their analysis of the photographs will exhibit a smaller increase in attraction for the less attractive target persons than participants who are not induced to exert this effort. This differential increase in attraction will be greater for the less attractive target persons than for the more attractive target persons.

II. Evaluation Times
A. In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less attractive target persons than the more attractive target persons.

B. Among participants who receive the affective biasing cue, participants who are induced to exert greater cognitive effort in their analysis of the target persons will exhibit longer evaluation times for the less attractive target persons than participants who are not induced to exert this effort. This differential increase in evaluation times will be greater for the less attractive target persons than for the more attractive target persons.

III. Spontaneous Thoughts

A. In general, participants who are given an affective biasing cue will report fewer thoughts while rating target persons.

B. For participants who are induced to exert greater cognitive effort in their analysis of the target persons, the affective biasing cue will cause participants to report more thoughts while rating target persons.

IV. Manipulations of Cognition to Overcome Expectancies

A. No hypotheses are made regarding differences in mirth ratings, evaluation times, or numbers of reported thoughts between the various cognitive manipulations designed to heighten cognitive effort in the analysis of target persons because no basis for prediction is apparent.
CHAPTER 6

ATTRACTION STUDY

METHOD

Photograph Selection

For the attraction study, both male and female sets of photographs were developed so that participants could rate attraction for persons of the opposite sex. For each gender, it was necessary to select photographs of three persons who would be consensually regarded as highly attractive and three who were moderately attractive.

Photographs were selected from a series of photographs which were calibrated at Ohio State University in 1993. For the first step in the selection process, 256 photographs were taken from the recent yearbook of a university of moderate size. They were high quality, 3" by 5" monochrome photographs which depicted college-age males and females, most of whom wore casual clothing. Fourteen introductory psychology students who received partial course credit for their participation rated the attractiveness of persons in these photographs using a 7-point scale. The scale was anchored at the low and high ends with the captions "Extremely Unattractive" and "Extremely Attractive." The midpoint of the scale was labeled "Average in Attractiveness." From ratings provided by these 14 initial raters, photographs of 16 males and 16 females were selected which had ratings with relatively low dispersions and which
provided a wide range of attractiveness values.

For the second step of the selection process, the attractiveness of the persons featured in these 32 photographs were rated by an additional 38 introductory psychology students, who participated in the selection process in exchange for partial course credit. The photographs were placed in two different random orders and presented to participants individually in booklets. Participants rated these persons using an attractiveness scale identical to that used in the first step of the selection process. The 32 photographs received mean attractiveness ratings ranging from $M = 2.18$ to $M = 5.37$.

In the final step of the selection procedure, separate sets of male and female photographs were selected from these 32 photographs by the experimenter and a research assistant. For each gender, six photographs were selected which featured three highly attractive and three moderately attractive persons.

Regarding selection criteria, photographs were chosen for the attractive sets which had the highest possible ratings and which did not match previously-determined exclusion criteria. The persons involved with the study were familiar with this set of photographs from using them in a previous study and established exclusion criteria to eliminate photographs which might distract participants or cause them to base their ratings on something other than the attractiveness of the person. Photographs were excluded if they had distracting backgrounds, featured unusual facial expressions, featured persons who were highly obese, or contained printed words such as the university name.

The most attractive target persons available were chosen so that the initial sets of photographs which participants viewed would not disconfirm high initial expectancies of attraction. For the sets of photographs featuring moderately attractive people, photographs were chosen with the lowest ratings whose eligibility was not precluded by the exclusion
criteria. Photographs were selected from the bottom of the range in order to maximize the range of differences between attractive and moderately attractive stimuli. It was thought that increasing the likely range over which participants would rate attractiveness would increase the likelihood that differences resulting from affective expectancies would achieve statistical significance. For the set of 32 cartoons this range had amounted to little more than 3 points on a 7-point scale.

Based on ratings from the 38 participants who completed the second step of the selection process, the attractive and moderately attractive sets of male target photographs had mean attractiveness ratings of $M = 3.11$ and $M = 4.65$, respectively. The attractive and moderately attractive female target photographs had mean attraction ratings of $M = 2.78$ and $M = 5.27$, respectively. For both males and females, these sets of photographs varied reliably in attractiveness ($t_{m} = 9.38$, $p = .000$ two-tailed; and $t_{m} = 15.78$, $p = .000$ two-tailed, respectively). The range of differences in ratings between the funny and moderately funny cartoons in the mirth study had been smaller than the range of differences seen in the male and female target person sets (approximately 1 point vs. approximately 1.5 and 2.5 points, respectively).

**Attraction study**

**Participants.** Participants were 40 male and 40 female introductory psychology students who volunteered to complete the study in exchange for course credit. No selection criteria were placed on participants. The study announcement sheet which participants presumably read indicated that this would be a study of "social perceptions" in which participants would rate the attractiveness of persons in photographs. Participants were randomly assigned to levels of Expectancy and Cognitive Manipulation, with gender balanced across conditions.
Initial procedures. The attraction study was conducted in the same setting as the mirth study, using identical initial procedures. Participants waited in a clearly marked area well away from rooms where the study was administered until summoned by the experimenter or the research assistant. They were greeted in a friendly manner and brought to a small private classroom where the study was conducted. The video camera which would tape the session was located in front of the table where the participant sat. Participants were assured that they would receive course credit, that their responses were confidential, and that they were free to leave at any time. They signed a consent form for videotaping the session.

Manipulating expectancies. Participants then underwent a bogus stimulus booklet selection procedure which paralleled that in the mirth study. As far as possible, the wording of instructions to participants for this and other procedures duplicated what was said to participants in the mirth study (see Appendix B for study materials). Booklets with female target persons were presented to male participants, and booklets featuring males persons were presented to female participants. Participants were told:

In the first part of this study, we will be looking at these photographs. In order to keep participants from getting tired, we have divided the cartoons into these flip books so that each person in the study will only rate a few photographs. You get to choose whichever color book you want."

After choosing a booklet, participants in the expect-to-be-attracted condition heard the experimenter say "Oh, the (color) book. Almost everyone thought these persons were really attractive." Participants in the uncued condition heard the experimenter remark "Ok, here’s the (color) book."

Manipulation of Cognition. Each participant was furnished with a separate booklet of rating scales. In order to overcome the effects of expectancies, participants in the Guided
Cognition condition were asked to use different attraction rating scales than participants in the Control condition of the Manipulation of Cognition variable (see Appendix B). Participants in the Control condition were asked simply to "Please indicate how attractive this person is to you" by circling a number on a 7-point scale anchored each end by the captions "Not at all Attractive" and "Extremely Attractive." Participants in the Guided Cognition condition also used this scale to rate attraction, but first used 7-point scales to rate the person in the photograph on several dimensions.

It was unknown what types of questions might be most likely to induce persons to notice discrepancies between their expectancies and the attraction value of the persons they viewed. However, since photographs display physical attributes, it seemed that encouraging an appraisal of those attributes might produce more uniform evaluations of attractiveness than encouraging participants to form impressions of personality. Therefore, dimensions were selected to encourage participants to focus on physical features of attractiveness and their own notions of what would be attractive to most persons in the population. These dimensions included how often one encountered more attractive persons in the population, the attractiveness of the target persons hairstyle and eyes, and the degree to which family or friends would find this person attractive.

Rating session procedures. As in the mirth study, participants were told that the experimenter would leave the room while they rated attraction and asked to come to a different room when they completed the ratings. The camcorder was turned on, the participant number was recorded on the videotape, and the experimenter left the room. Male participants all rated the same series of six female photographs, and females rated the same series of six male photographs. Raters were allowed to take as long as they liked for the rating procedure.
Questionnaire session procedures. After the participants had completed the attraction ratings and summoned the experimenter from the next room, they completed a manipulation check form which asked them to rate their expectations of seeing attractive persons just before looking at the photographs. This form also asked what they heard about the experiment prior to participation (see Appendix B for sample materials).

After this form was completed, participants were given the form on which they would indicate thoughts they had about the persons in the photographs. They were told:

"Please take a few minutes and go back through the booklet using this form. We’d like you to write down any thoughts you can remember having about these persons when you were rating your attraction for these persons."

After this, participants were escorted to a separate private room where they completed the three questionnaires which measured possible covariates in the study: the Positive and Negative Affect Scale (Watson, Clark, and Tellegen, 1988); the 18-item Need for Cognition Scale (Cacioppo and Petty, 1982); and the 38-item Self-Doubt Scale (Mirels and Greblo, 1994, unpublished manuscript).

Debriefing. The debriefing procedure was similar to that in the mirth study. Participants were allowed to read a debriefing form which was kept in a separate booklet (see Appendix B). As in the previous study, the attraction study was presented as an "investigation of the ways in which our expectations influence our emotions." Participants heard a brief description of how expectancies might influence emotions. They were informed that everyone in the study saw the same set of photographs, and learned of the procedure used to manipulate expectancies. This meant that people might hear about the study’s purpose before participating in it, but no one indicated that they had on the manipulation check forms.

After being debriefed, participants were given back the cards verifying participation in the
study for course credit and they were thanked warmly for their participation in the study.

**Measuring evaluation times.** Evaluation time was defined as the interval between the page strike which resulted when the participant turned the stimulus book pages and the circling of the response in the rating booklet. Evaluation times were measured from videotapes in a manner analogous to the mirth study. Seventy-seven participants produced usable evaluation times. Times from one case were unavailable due to the participant moving just out of camera range, and times from two cases were discarded because participants exhibited extraneous behavior while rating photographs. The experimenter used a stopwatch to measure and check evaluation times ($r = .99$), and an independent coder timed 10 randomly selected from participants in each cognitive condition ($r = .99$).
CHAPTER 7

ATTRACTION STUDY

RESULTS

Responses provided by attraction study participants were processed in a similar fashion to the mirth study responses in order to permit comparison across the two studies.

Manipulation Check

Participants rated prior expectations of attraction on a 7-point scale with a range of 1 to 7 (see Table 7.1). Self-reported expectations varied reliably in the expected direction, with cued participants providing reports of significantly higher attraction expectations than uncued participants ($M = 5.00$ vs. $M = 4.38$; $t(78) = 2.09$, $p = .040$). There was no indication that participation in the different levels of cognition affected ratings of prior expectations of attraction. A 2 (Expectancy: Cued vs. Uncued) $\times$ 2 (Manipulation of Cognition: Control vs. Guided Cognition) between subjects ANOVA did not yield a significant interaction or main effects for cognition ($F_{(1,76)} = .173$, $p = .679$; and $F_{(1,76)} = .836$, $p = .364$ respectively).

Attraction Ratings

Attraction ratings were averaged over the sets of attractive and unattractive stimuli which
<table>
<thead>
<tr>
<th>Condition</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Population</td>
<td>4.69</td>
<td>1.37</td>
<td>80</td>
</tr>
<tr>
<td>All Cued Participants</td>
<td>5.00</td>
<td>1.19</td>
<td>40</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>4.80</td>
<td>1.28</td>
<td>20</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>5.20</td>
<td>1.11</td>
<td>20</td>
</tr>
<tr>
<td>All Uncued Participants</td>
<td>4.38</td>
<td>1.46</td>
<td>40</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>4.30</td>
<td>1.34</td>
<td>20</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>4.45</td>
<td>1.61</td>
<td>20</td>
</tr>
</tbody>
</table>

**Note.** Ratings of attraction expectations at the point when participants began rating cartoons were made after the rating session. Ratings were made on a 7-point scale.

Table 7.1: Mean Prior Expectations of Attraction
participants viewed to produce mean attraction ratings with a potential range of 1 to 7.

Descriptive statistics for attraction ratings are presented in Table 7.2. Attraction ratings for the conditions in the study are shown in Figures 7.1 and 7.2.

**Attraction-provoking potential of photographs.** The two sets of stimulus persons clearly differed in their ability to evoke feelings of attraction. Participants who received neither an affective biasing cue nor a cognitive manipulation to overcome expectancies reported higher feelings of attraction for the first set of target persons than the second set ($M = 4.28$ vs. $M = 2.27$; $t(19) = 9.02$, $p = .000$). This finding held when averaged across levels of cue and cognition for the entire sample ($M = 4.35$ vs. $M = 2.32$; $t(79) = 16.06$, $p = .000$). The average difference between rated feeling intensity for the two sets of photographs was approximately twice as great in the mirth study (2.02 vs. 0.94 points).

**Effects of affective expectancies on attraction.** It had been hypothesized that: "In general, the affective biasing cue will produce a greater increase in attraction for the less attractive target persons than for the more attractive target persons." This prediction was not confirmed. Although cued participants reported higher levels of attraction expectancies, those higher expectations did not enhance attraction for the moderately attractive target persons. Cued and uncued participants in the control level of the Manipulation of Cognition variable provided similar ratings of attraction at viewing less attractive target persons ($M = 2.55$ vs. $M = 2.27$, respectively, $t(38) = 1.06$, $p = .297$). They also showed little difference in their ratings of attractive stimulus persons ($M = 4.62$ vs. $M = 4.28$; $t(38) = 1.22$, $p = .232$).

**Replication of Wilson et al.'s (1989) expectancy results.** As with the mirth study, the hypothesis which pertained to replicating the Wilson et al. (1989) pattern of expectancy results was: "In general, the affective biasing cue will produce a greater increase in attraction for the
<table>
<thead>
<tr>
<th>Condition</th>
<th>Attractive Stimuli</th>
<th>Moderately Attractive Stimuli</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Entire Population</td>
<td>4.35</td>
<td>.94</td>
</tr>
<tr>
<td>All Cued Participants</td>
<td>4.49</td>
<td>1.00</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>4.62</td>
<td>.71</td>
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<tr>
<td>Guided Cognition</td>
<td>4.37</td>
<td>1.23</td>
</tr>
<tr>
<td>All Uncued Participants</td>
<td>4.21</td>
<td>.88</td>
</tr>
<tr>
<td>Cognitive Control</td>
<td>4.28</td>
<td>1.00</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>4.13</td>
<td>.75</td>
</tr>
</tbody>
</table>

**Note.** Attraction was rated for each target person using a 7-point scale. Ratings were averaged over the Attractive and Moderately Attractive photograph sets.

Table 7.2: Mean Attraction Ratings
less attractive target persons than for the more more attractive target persons." This implied an interaction between the Expectancy and Photograph Set variables. This interaction was not significant (see Table 7.2 and Figure 7.1).

A 2 (Expectancy: Cued vs. Uncued) x 2 (Photograph Set: Attractive, Moderately Attractive) between-within ANOVA was conducted on attraction ratings for conditions where no attempt was made to overcome expectancies. Significant main effects were found for the Photograph Set variable, which simply reflected the higher levels of attraction elicited by the more attractive target persons ($F_{(1,30)} = 151.60, p = .000$). However, neither main effects for Expectancy nor the interaction between Expectancy and Photograph Set achieved significance in this analysis ($F_{(1,30)} = 2.07, p = .159$; and $F_{(1,30)} = 0.02, p = .881$, respectively).

**Overcoming attraction expectancies.** Two of the study hypotheses pertained to overcoming mirth expectations: 1) "In general, the affective biasing cue will produce a greater increase in attraction for the less attractive target persons than for the more attractive target persons;" and 2) "Among participants who receive an affective biasing cue, those who are induced to exert greater cognitive effort in their analysis of the photographs will exhibit a smaller increase in attraction for the less attractive target persons than participants who are not induced to exert this effort. This differential increase in attraction will be greater for the less attractive target persons than for the more attractive target persons." The combination of these statements implied that there would be an interaction between the variables of Expectancy, Photograph Set, and Manipulation of Cognition to overcome the effects of expectancies. This prediction was not confirmed.

A 2 (Manipulation of Cognition: Control vs. Guided Cognition) x 2 (Expectancy: Cued vs. Uncued) x 2 (Photograph Set: Attractive vs. Moderately Attractive) mixed model ANOVA
was conducted on all conditions in the study. Neither main effects for the Manipulation of Cognition variable, nor the Cognition by Expectancy interaction, nor the Cognition by Photograph Set interaction, nor the Cognition by Expectancy by Photograph Set interaction were significant in this analysis ($F(1,76) = 1.13, p = .292; F(1,76) = 0.38, p = .539; F(1,76) = 0.38, p = .537; and F(1,76) = 0.18, p = .673$, respectively). The addition of covariates to this analysis did not elucidate significant effects involving cue (see Appendix A for analyses).

**Evaluation times**

Seventy-seven participants produced usable evaluation times. Evaluation times were averaged across the sets of attractive and unattractive stimulus persons. They are presented in Table 7.3 and Figures 7.3 and 7.4.

**Replication of Wilson et al.'s (1989) evaluation time results.** The hypothesis which pertained to conditions where no attempt was made to overcome expectancies was: "In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less attractive target persons than the more attractive target persons." This hypothesis implied an interaction between the Expectancy and Photograph Set variables. This prediction was not confirmed.

A 2 (Expectancy: Cued vs. Uncued) x 2 (Photograph Set: Attractive vs. Moderately Attractive) mixed model ANOVA was performed on evaluation times for conditions in which no attempt was made to overcome expectancies. This analysis yielded neither significant main effects for Expectancy nor Photograph Set ($F(1,36) = 1.29, p = .263; and F(1,36) = 0.36, p = .554$, respectively). The predicted interaction between Expectancy and Photograph Set did not achieve significance ($F(1,36) = 0.99, p = .326$).

**Effects of Manipulation of Cognition on evaluation times.** As in the mirth study.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Attractive Stimuli</th>
<th>Moderately Attractive Stimuli</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Population</td>
<td>28.31</td>
<td>19.52</td>
<td>23.83</td>
<td>14.79</td>
<td>77</td>
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<tr>
<td>All Cued Participants</td>
<td>26.96</td>
<td>18.46</td>
<td>22.79</td>
<td>14.09</td>
<td>38</td>
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<tr>
<td>Cognitive Control</td>
<td>12.46</td>
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<td>11.90</td>
<td>3.92</td>
<td>19</td>
<td></td>
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<tr>
<td>Guided Cognition</td>
<td>41.46</td>
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<td>33.68</td>
<td>11.94</td>
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<td></td>
<td></td>
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<tr>
<td>All Uncued Participants</td>
<td>29.62</td>
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<td>24.85</td>
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<tr>
<td>Cognitive Control</td>
<td>14.17</td>
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<tr>
<td>Guided Cognition</td>
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<td>17.17</td>
<td>32.85</td>
<td>11.47</td>
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</table>

*Note.* Evaluation times in seconds were measured for each photograph. Evaluation times were averaged over the Attractive and Moderately Attractive photograph sets.

Table 7.3: Mean Evaluation Times
participants in the Guided Cognition condition exhibited longer evaluation times than participants who did not have to answer a series of questions about each stimulus. A 2 (Expectancy: Cued vs. Uncued) x 2 (Manipulation of Cognition: Control vs. Guided Cognition) x 2 (Photograph Set: Attractive vs. Moderately Attractive) mixed model ANOVA performed on evaluation times yielded highly significant main effects for the cognition variable ($F_{(\text{C},7\text{n})} = 92.78$, $p = .000$).

Two hypotheses pertained to the effects which the attempt to overcome expectancies would have on evaluation times: 1) "In general, participants who receive the affective biasing cue will exhibit a greater decrease in evaluation times for the less attractive target persons than the more attractive target persons:" and 2) "Among participants who receive the affective biasing cue, participants who are induced to exert greater cognitive effort in their analysis of the target persons will exhibit longer evaluation times for the less attractive target persons than participants who are not induced to exert this effort. This differential increase in evaluation times will be greater for the less attractive target persons than for the more attractive target persons." The combination of these hypotheses implied that there would be three-way interaction between the variables of Manipulation of Cognition, Expectancy, and Photograph Set. This prediction was not confirmed.

In the 2 (Expectancy: Cued vs. Uncued) x 2 (Manipulation of Cognition: Control vs. Guided Cognition) x 2 (Photograph Set: Attractive vs. Moderately Attractive) mixed model ANOVA performed on evaluation times mentioned previously, significant main effects were found for Manipulation of Cognition and Photograph Set, but not for Expectancy ($F_{(\text{C},7\text{n})} = 92.78$, $p = .000$; $F_{(\text{C},7\text{n})} = 15.50$, $p = .000$; and $F_{(\text{C},7\text{n})} = 0.67$, $p = .416$, respectively). The predicted three-way interaction did not achieve significance ($F_{(\text{C},7\text{n})} = 2.14$, $p = .148$). Neither did the interaction between Expectancy and Manipulation of Cognition
However, Manipulation of Cognition interacted with the Photograph Set variable to affect evaluation time ($E_{(1.20)} = 22.10, p = .000$). Participants who did not receive a manipulation to overcome expectancies did not differ in evaluation times for attractive and moderately attractive photograph sets, whereas participants in the Guided Cognition condition took longer to evaluate the attractive than the moderately attractive target persons.

**Spontaneous thoughts**

The written thoughts participants reported when rating attraction were tallied by the experimenter and an independent coder. The following rules were used to tally thoughts: evaluations tied to features counted as however many features were listed ("pretty eyes" was one thought; "pretty eyes and hair" was two thoughts); separate adjectives counted as separate thoughts; and redundant ideas were not counted as separate thoughts. To establish inter-rater reliability, a research assistant also tallied reported thoughts using these rules ($r = .88$).

The number of reported thoughts were summed for all six target persons and for the attractive and unattractive target persons separately (see Table 7.4). Thoughts summed across all six target persons ranged from 3 to 26 thoughts. For the separate sets of photographs they ranged from 2 to 14 thoughts for the attractive target persons and from 0 to 14 thoughts for the unattractive target persons.

**Replication of Wilson et al.'s (1989) reported thoughts results.** It had been predicted that: "In general, participants who are given an affective biasing cue will report fewer thoughts while rating target persons." This prediction was not confirmed.

The delivery of the affective biasing cue had little effect on the number of spontaneous thoughts reported by participants in the cognitive control condition. Summed over both sets
<table>
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<tr>
<th>Condition</th>
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<th>Moderately Attractive Stimuli</th>
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<td>SD</td>
<td>M</td>
</tr>
<tr>
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<td>Cognitive Control</td>
<td>11.95</td>
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<td>5.59</td>
<td>6.20</td>
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<tr>
<td>All Uncued Participants</td>
<td>12.83</td>
<td>5.05</td>
<td>6.90</td>
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<tr>
<td>Cognitive Control</td>
<td>11.95</td>
<td>4.12</td>
<td>6.40</td>
</tr>
<tr>
<td>Guided Cognition</td>
<td>13.70</td>
<td>5.80</td>
<td>7.40</td>
</tr>
</tbody>
</table>

**Note.** Spontaneous thoughts were tallied for each photograph. The numbers of reported thoughts were summed across each block of cartoons and for both blocks of cartoons.

Table 7.4: Mean Spontaneous Thoughts When Viewing Stimulus Persons
of target persons, the groups of cued and uncued participants each provided a mean of 11.95 total thoughts. When the number of thoughts reported for attractive and moderately attractive target persons were analyzed separately, the differences did not achieve statistical significance. For attractive target persons cued participants provided a mean of $M = 7.05$ thoughts and uncued participants provided a mean of $M = 6.40$ thoughts ($t(38) = 0.71, p = .483$). For unattractive target persons cued participants reported an average of $M = 4.90$ thoughts and uncued participants reported an average of $M = 5.55$ thoughts ($t(38) = -0.83, p = .414$).

**Effects of Manipulation of Cognition on spontaneous thoughts.** As in the mirth study, the two predictions which pertained overcoming expectancies were: 1) "In general, participants who are given an affective biasing cue will report fewer thoughts while rating target persons;" and 2) "For participants who are induced to exert greater cognitive effort in their analysis of the target persons, the affective biasing cue will cause participants to report more thoughts while rating target persons." These predictions implied an interaction between the Manipulation of Cognition and Expectancy variables. This prediction was not confirmed.

A $2 \times 2 \times 4$ (Manipulation of Cognition: Control vs. Guided Cognition) mixed model ANOVA was performed on mean spontaneous thoughts. As in the mirth study, this analysis did not yield significant main effects for Expectancy, or Manipulation of Cognition ($F_{(1,76)} = 1.46, p = .230$; and $F_{(1,76)} = 1.13, p = .292$, respectively. Significant main effects for Photograph Set were found in this analysis ($F_{(1,76)} = 250.03, p = .000$). Across conditions of Expectancy and Photograph Set, more thoughts were reported for attractive than moderately attractive target persons ($M = 6.76$ vs. $M = 5.54$ thoughts, respectively). However, neither the predicted Manipulation of Cognition by Expectancy interaction, nor Manipulation of Cognition by Photograph Set interaction, nor the Expectancy by Cognition by Photograph Set interaction.
interaction were significant in this analysis ($F(1,76) = 0.38, p = .539$; $F(1,76) = 0.03, p = .871$; and $F(1,76) = 0.18, p = .673$, respectively).

**Summary of Attraction Study Results**

Although cued participants reported higher levels of expectancies prior to rating target persons, no evidence was found that the delivery of the affective biasing cue influenced attraction, evaluation times, or numbers of thoughts reported during the rating process. Further, no evidence was found to confirm predictions involving attempts to overcome effects of expectancies, probably because expectancy effects were not demonstrated in this study.

Although not predicted, it was found that for the study as a whole participants provided slightly more thoughts for attractive target persons than less attractive target persons. Additionally, it was found that participants in the Guided Cognition condition took longer to rate attractive target persons than unattractive target persons, whereas when no attempt was made to overcome expectancies, no difference was seen in evaluation times for attractive and unattractive target persons.
Note. Attraction at viewing each target person was reported on a 7 point scale. These ratings were averaged over the three photographs in both the Attractive and Moderately Attractive photograph sets.

Figure 7.1: Interpersonal Attraction When No Attempt was Made to Overcome Expectancies
Note. Attraction at viewing each target person was reported on a 7 point scale. These ratings were averaged over the three photographs in both the Attractive and Moderately Attractive photograph sets.

Figure 7.2: Interpersonal Attraction When Participants First Rated Target Persons on Several Dimensions
Note. Mean evaluation times for each target person were averaged over the three photographs in both the Attractive and Moderately Attractive photograph sets.

Figure 7.3: Evaluation Times When No Attempt Was Made to Overcome Expectancies
Note. Mean evaluation times for each target person were averaged over the three photographs in both the Attractive and Moderately Attractive photograph sets.

Figure 7.4: Evaluation Times When Participants First Rated Target Persons on Several Dimensions
Unconfirmed predictions. Findings were inconclusive in the attraction study. After completing ratings of attraction felt toward target persons, participants who received the affective biasing cue clearly reported higher expectancies of attraction at the point when they began the rating process than did uncued participants. However, no evidence was found that expectations of attraction influenced feelings of attraction, evaluation times, or the number of thoughts reported during evaluation.

The mirth study had demonstrated that affective expectancies increased the intensity of mirth experienced by participants when viewing the moderately funny cartoons despite attempts to overcome those expectancies. No similar effect was found in the attraction study.

It had been thought that if no attempt were made to overcome expectancies, that expectations would interact with the attractive value of the target persons. For attractive target persons all participants were predicted to experience similar attraction, but for moderately attractive targets, cued participants were predicted to experience more attraction than uncued participants. In the mirth study, this interaction became marginally significant (although expectancies appeared to decrease mirth for funny cartoons as well as increase mirth
for
moderately funny ones). This interaction was not significant in the attraction study, despite
an increase in sample size intended to boost experimental power.

Predictions regarding how expectancies would influence evaluation times and numbers
of thoughts were similarly unconfirmed. Given that expectancies did not demonstrate effects,
it is unsurprising that manipulations to overcome them also did not confirm predictions.

Although the study was not without weaknesses, it was arguably a fair test of whether
manipulated expectancies as operationalized in the mirth study would influence interpersonal
attraction. Several different explanations might explain the lack of findings in the attraction
study.

Expectancies may not have been enhanced. The lack of predicted results might mean
that the affective biasing cue did not enhance expectancies. This is the simplest explanation
and it would be supported by the similarity of results between cued and uncued participants
for attraction ratings, evaluation times, and numbers of reported thoughts.

Expectancies may have been disconfirmed. Another possibility is that after
expectancies had been enhanced, they might have been disconfirmed. This may have
happened if the second set of target persons were so unattractive to participants that they
could not evaluate the photographs based on their expectancies. According to the Wilson et
al. (1989) model, if cued participants noticed that the moderately attractive target persons did
not match their high attraction expectations, they would have conducted data-driven rather
than theory-driven evaluations. Since they would use a similar style of cognitive processing,
cued participants might arrive at a similar evaluation of the target persons and experience a
similar level of affect as uncued participants. According to the model, if cued participants
performed data-driven processing they might report a similar number of spontaneous thoughts
as persons who did not receive the affective biasing cue. If expectancies were disconfirmed, it might also strengthen participants memories of initial expectancies so that cued participants would provide retrospective reports of higher initial expectancies than uncued participants.

Two considerations argue against the idea that expectancies were disconfirmed. First, the similarity in evaluation times between cued and uncued participants viewing each set of target persons suggests that a disparity was not noticed. For persons with high expectations, noticing disparities had been thought to be a time-consuming process which would be added to times needed for the data-driven evaluation which they would then have to perform. As a result, their evaluation times would be longer than those of uncued participants. If cued participants in this study did, in fact, notice the disparity and engage data-driven processing, so little time was needed to recognize the disparity that evaluation times were not substantially lengthened. Secondly, it could be argued that the moderately attractive targets were not too unattractive to allow expectancies to operate because the range of differences between the two photograph sets was limited, amounting to only approximately one quarter of the possible 7-point rating range. If the moderately attractive targets were too unattractive for expectancies to operate, it would mean that expectancies could operate only when the discrepancies between expectancies and target persons are of limited size.

Expectancies may not apply. Another possible explanation for the lack of findings in the attraction study would be that affective expectancies may not operate in the domain of attraction. This could explain the general lack of findings in the attraction study. Persons might always perform data-driven evaluations of people due to interest in the other person or because of the need to thoroughly assess persons with whom one might form a relationship. Alternatively, persons might be so practiced and adept at assessing attractiveness that cursory checks performed to validate expectancies would efficiently detect disparities between
expectancies and the person one meets.

**Conclusions.** Firm conclusions are not possible from the attraction study because the meaning of results was ambiguous.
CHAPTER 9

GENERAL DISCUSSION

Overall, the results of mirth and attraction studies did not support the Wilson et al. (1989) model for the way in which affective expectancies influence emotional experience. Most predictions were unconfirmed and results were inconclusive. Regarding the mirth study, it was found that expectancies of mirth modestly enhance mirth at viewing moderately funny cartoons despite attempts to overcome those expectancies. This suggests that expectancies may exert an enduring effect which is difficult to entirely overcome. However, the full expectancy effect reported by the original researchers which included changes in evaluation times and numbers of reported thoughts was not demonstrated in the mirth study. Regarding the attraction study, no predictions were confirmed.

Strengths of the Investigation

In the interest of replicating the expectancy effect and then being able to overcome it, the mirth and attraction studies were designed to parallel the work of the original researchers. The paradigm of presenting three strong followed by three weaker target objects had the potential of generating very strong expectancies in cued participants because they would have an opportunity to confirm expectations created by the affective biasing cue by seeing objects which matched their expectations. The paradigm had yielded highly significant effects with a
limited number of participants previously, and it had produced a consistent pattern of effects for affect, reported thoughts, and evaluation times.

The cartoons chosen for the mirth study came from the same source as those in the Wilson et al. (1989) study, but different cartoons were used to avoid differences in thematic content across cartoon sets which might have influenced results. For the attraction study, photographs of target persons were selected using exclusion criteria which would eliminate overtly distracting elements from photographs. For both types of target objects, selection procedures provided clear notions of affect-provoking potential prior to administering the study.

The manipulations designed to overcome expectancy effects appeared likely to succeed if the conception of confirmation checks in the Wilson et al. (1989) model were true. These manipulations provided opportunities or incentives to notice discrepancies between expectations and the actual value of the objects which participants observed.

The administration of the study appeared well-standardized. Persons administering the study were trained with explicit, written instructions. The experimental sessions were brief and appeared to engage participants’ interest, which may have reduced careless responding.

However, several aspects of the study are open to challenge.

Challenges to the study

The overall expectancy effect reported by Wilson et al. (1989, 1992) was not demonstrated in these studies. Regarding the mirth study, expectancies of mirth enhanced
mirth at viewing less funny cartoons, but it was a different type of expectancy effect than Wilson et al. (1989) demonstrated due to the subjectively low magnitude of emotional enhancement and the lack of findings for associated effects such as evaluation times or numbers of reported thoughts. Regarding the attraction study, no evidence was found that expectancies affected attraction.

The affective biasing cue. If the basic effect reported by Wilson et al. (1989) were not engaged, one possibility would be that the affective biasing cue used in the present studies was ineffective. The lack of a strong expectancy effect in the mirth study and the lack of findings in the attraction study, support this view. The affective biasing cues in both studies clearly informed participants that others had found the specific cartoons which they would see funny, but the cue used in the present studies differed slightly in semantic content from that of the original researchers. For example, in the present mirth study participants were told "Oh, the (color) book. Almost everyone thought these were really funny." In contrast, in the Wilson study participants heard the experimenter remark "Oh, you're lucky. Almost all of our previous subjects thought these ones were really funny" (Wilson et al., 1989, p. 522. emphasis added). Unlike participants in the present study, participants in the Wilson study were told that they were lucky. The notion of good fortune was eliminated from the cue in the present investigations because it may have confounded the manipulation of affective expectancies with extraneous effects. In the Wilson study, in addition to manipulating expectancies, the cue might have given participants a sense of being special, distracted them from the cue information, or imbued them with a nonspecific positive affect which uncued
participants would not receive.

It was believed that the cue in the present studies represented a more pure manipulation which would contribute to the internal validity of the present study. However, in retrospect the Wilson cue may have been more effective. In the Wilson study, being told that they were lucky may have caused participants to pay more attention to the upcoming information in the cue or may have given participants a bias to believe in the cue which was not present in the current study. Participants in the Wilson study also heard the experimenter identify other participants as the source of opinions about the cartoons. For participants, this may have validated the cue information more than hearing that "everyone" thought they the cartoons were funny.

The affective biasing cue in this study also may have differed from that in Wilson et al.'s (1989) study because of unintentional differences in the non-verbal content of the cue. The cue was a verbal statement delivered by the experimenter or an assistant. Although wording was standardized, no attempt was made to standardize posture, facial expressions, or vocal inflections when delivering the cue. Inconsistencies in non-verbal behavior may have made the affective biasing cue less convincing, and in that case expectancies may not have been heightened by the cue.

Self-focused attention. If the overall expectancy reported by Wilson et al. (1989) was not engaged, another possible explanation is that participants may have become self-conscious during rating procedures and that this overcame expectancy effects. In the Wilson et al. (1989) study participants were videotaped secretly and asked for permission afterwards. In
this study, the camcorder with its blinking red light sat squarely before participants and may have encouraged them to focus on themselves. The presence of a videocamera is known to enhance self-focused attention, a construct which refers to a focus of awareness on one's own consciousness, personal history, or one's body (Wicklund and Duval, 1971). The effects of self-focused attention on the type of expectancy-driven affect predicted to occur in this study are unknown. Conceivably, it could have prompted participants to consciously deliberate about the target objects, thereby overriding theory-driven processing.

**Dependent measures.** Another challenge to the present study is that the way in which dependent variables were operationalized may have rendered them insensitive to the independent variables in the study. Some of these were changes from the way in which constructs were measured in the Wilson et al. (1989) study. Although these changes may have contributed to the lack of findings, they may also be considered strengths because the changes were designed to eliminate other possible influences on responses and focus more directly on constructs which were relevant to the research issues of this study.

For example, in the mirth study, participants were asked to "Please indicate how much this cartoon amuses you" on a 7-point scale anchored at the extremes by the phrases "not at all amused" and "extremely amused." In contrast, in the Wilson et al. (1989) study participants rated the cartoons themselves rather than the mirth they experienced, on a 9-point scale anchored with the phrases "not at all funny" to "extremely funny." This shift in wording had been designed to elicit a report of emotional experience rather than an assessment of target quality. The rationale for this change was to encourage participants to
focus on what they felt, which was the object of the study. For example, it was thought that if participants in the mirth study were asked how funny the cartoons were, their answers might reflect their perceptions of how funny others might find the cartoons. For example, a person who was not amused by a mother-in-law cartoon might indicate that it was funny if she thought that most people found mother-in-law cartoons funny. Since cued participants had already been told that "Almost everyone thought these were really funny," it seemed reasonable that their ratings might be influenced by notions of how others would react. The changed wording in the present investigation would be considered a strength if it reduced irrelevant considerations of what others would feel. Yet, since the affective biasing cue had already primed participants to think of others' reactions, the wording chosen for the probe questions may have unintentionally introduced error by encouraging participants to consider how others would feel and then distinguish themselves from others by saying "how much this cartoon amused them."

The procedures for reporting numbers of thoughts may also have been insensitive to differences in participant behavior. In the mirth study, the procedure of interviewing participants for thoughts which they had while rating each cartoon may have created a demand for participants to generate and report additional thoughts during the questioning procedure. For the attraction study, the response format was changed to a written questionnaire in order to reduce this type of demand. However, the form still probed for thoughts about each photograph, which by itself could create a demand to generate additional thoughts. Wilson et al.'s (1989) procedure of asking for any thoughts participants had during the cartoon rating
Suggestions for Future Research

Although results from these studies did not support the Wilson et al. (1989) model, the effects of affective expectancies warrant further investigation. Overall, findings in this study were inconclusive. That participants with high expectancies of mirth reported more intense mirth for moderately funny cartoons even when attempts were made to overcome expectancies suggests that under some conditions expectancies may be highly resistant to being disconfirmed. That participants who may have had expectancies of mirth disconfirmed continued to report higher levels of mirth for the moderately funny cartoons suggests that even if expectancies are disconfirmed they may continue to exert effects on emotions which we experience. Findings from this study also suggest that expectancy effects may be difficult to demonstrate or may not operate for some emotions.

This study does not indicate a clear direction for future research on this issue. The Wilson et al. (1989) model posited that expectancies were associated with theory-driven processing. However, findings in this study suggest that affective expectancies they operate resist extinction and may operate when more thorough, data-driven evaluations are conducted. Future research might focus on elucidating the effects which expectancies may continue to exert when different modes of processing are engaged or when expectations are disconfirmed.
REFERENCES


APPENDIX A

SUPPLEMENTARY ANALYSES
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Table A.1: ANOVA Summary Table - Prior Expectations of Mirth by Expectancy and Manipulation of Cognition
Table A.2: ANOVA Summary Table - Mirth at Moderately Funny Cartoons by Expectancy and Manipulation of Cognition

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Table A.3: ANOVA Summary Table - Mirth by Expectancy and Cartoon Funniness

When No Attempt Was Made to Overcome Expectancies

123
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Table A.4: ANOVA Summary Table - Mirth by Expectancy, Manipulation of Cognition, and Cartoon Funniness
### Table A.5: ANOVA Summary Table - Mirth by Expectancy, Manipulation of Cognition, and Cartoon Funniness with Positive and Negative Affect as Covariates in the Analysis

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### Table A.6: ANOVA Summary Table - Spontaneous Thoughts When Viewing Cartoons by Expectancy, Manipulation of Cognition, and Cartoon Funniness

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Table A.6: ANOVA Summary Table - Spontaneous Thoughts When Viewing Cartoons by Expectancy, Manipulation of Cognition, and Cartoon Funniness
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Table A.7: ANOVA Summary Table - Evaluation Times by Expectancy and Cartoon Funniness When No Attempt Was Made to Overcome Expectancies
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Table A.8: ANOVA Summary Table - Evaluation Times by Expectancy, Manipulation of Cognition, and Cartoon Funniness
### Table A.9: ANOVA Summary Table - Evaluation Times by Expectancy and Cartoon Set for the Enhanced Cognition Condition

<table>
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Table A.10: ANOVA Summary Table - Evaluation Times by Expectancy and Cartoon Funniness for the Guided Interaction Condition
### Table A.11: ANOVA Summary Table - Evaluation Times by Expectancy and Cartoon Funniness for the Anticipated Interaction Condition

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<td>.08</td>
<td>.82**</td>
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Note. MI = Mirth, ST = Spontaneous Thoughts, ET = Evaluation Times.

Abbreviation Suffixes '1' and '2' Indicate Funny and Moderately Funny Sets of Cartoons, Respectively.

*p < .01; **p < .001, two-tailed; n = 70.

Table A.12: Correlations Between Variables in the Mirth Study
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Table A.13: ANOVA Summary Table - Prior Expectations of Attraction by Expectancy and Manipulation of Cognition
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Table A.14: ANOVA Summary Table - Attraction by Expectancy and Photograph

Attractiveness When No Attempt Was Made to Overcome Expectancies
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Table A.15: ANOVA Summary Table - Attraction by Expectancy, Manipulation of Cognition, and Photograph Attractiveness
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</table>

Table A.16: ANOVA Summary Table - Attraction by Expectancy, Manipulation of Cognition, and Photograph Attractiveness with Need for Cognition as a Covariate
<table>
<thead>
<tr>
<th>Source of Variation</th>
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<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Expectancy</td>
<td>1.78</td>
<td>1</td>
<td>1.78</td>
<td>1.52</td>
<td>.222</td>
</tr>
<tr>
<td>Manipulation of Cognition</td>
<td>1.56</td>
<td>1</td>
<td>1.56</td>
<td>1.33</td>
<td>.253</td>
</tr>
<tr>
<td>Expectancy by Cognition</td>
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<td>.60</td>
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<td>Within Cells</td>
<td>85.86</td>
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</tr>
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<td>2</td>
<td>.04</td>
<td>.04</td>
<td>.965</td>
</tr>
<tr>
<td>Constant</td>
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<td>37.08</td>
<td>31.53</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Within Subjects Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set (Attractiveness)</td>
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<td>1</td>
<td>159.97</td>
<td>242.56</td>
<td>.000</td>
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<tr>
<td>Expectancy by Set</td>
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<td>1</td>
<td>.20</td>
<td>.30</td>
<td>.583</td>
</tr>
<tr>
<td>Cognition by Set</td>
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<td>1</td>
<td>.01</td>
<td>.01</td>
<td>.921</td>
</tr>
<tr>
<td>Expectancy/Cognition/Set</td>
<td>.15</td>
<td>1</td>
<td>.15</td>
<td>.23</td>
<td>.632</td>
</tr>
<tr>
<td>Within Cells</td>
<td>49.46</td>
<td>75</td>
<td>.66</td>
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<td></td>
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</table>

Table A.17: ANOVA Summary Table - Attraction by Expectancy, Manipulation of Cognition, and Photograph Attractiveness with Positive and Negative Affect as Covariates
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
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<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Expectancy</td>
<td>1.71</td>
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<td>1.71</td>
<td>1.49</td>
<td>.226</td>
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<td>Manipulation of Cognition</td>
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<td>1</td>
<td>1.32</td>
<td>1.15</td>
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<td>1</td>
<td>.52</td>
<td>.45</td>
<td>.505</td>
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<td>Within Cells</td>
<td>86.20</td>
<td>75</td>
<td>1.15</td>
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<td>.47</td>
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<td>.526</td>
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<td>1</td>
<td>119.50</td>
<td>103.98</td>
<td>.000</td>
</tr>
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<td><strong>Within Subjects Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set (Attractiveness)</td>
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<td>1</td>
<td>163.35</td>
<td>250.03</td>
<td>.000</td>
</tr>
<tr>
<td>Expectancy by Set</td>
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<td>1</td>
<td>.25</td>
<td>.38</td>
<td>.537</td>
</tr>
<tr>
<td>Cognition by Set</td>
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<td>1</td>
<td>.02</td>
<td>.03</td>
<td>.871</td>
</tr>
<tr>
<td>Expectancy/Cognition/Set</td>
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<td>.12</td>
<td>.18</td>
<td>.673</td>
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<tr>
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<td>.65</td>
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Table A.18: ANOVA Summary Table - Attraction by Expectancy, Manipulation of Cognition, and Photograph Attractiveness with Self-Doubt as a Covariate
<table>
<thead>
<tr>
<th>Source of Variation</th>
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<tbody>
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<td><strong>Between Subjects Effects</strong></td>
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<td></td>
<td></td>
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<td>.43</td>
<td>.38</td>
<td>.539</td>
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<td>76</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Set (Attractiveness)</td>
<td>163.35</td>
<td>1</td>
<td>163.35</td>
<td>250.03</td>
<td>.000</td>
</tr>
<tr>
<td>Expectancy by Set</td>
<td>.25</td>
<td>1</td>
<td>.25</td>
<td>.38</td>
<td>.537</td>
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<tr>
<td>Cognition by Set</td>
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<td>1</td>
<td>.02</td>
<td>.03</td>
<td>.871</td>
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<td>Expectancy/Cognition/Set</td>
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<td>Within Cells</td>
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<td>76</td>
<td>.65</td>
<td></td>
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Table A.19: ANOVA Summary Table - Spontaneous Thoughts When Viewing Photographs by Expectancy, Manipulation of Cognition, and Photograph Attractiveness
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
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<th>MS</th>
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<tbody>
<tr>
<td>Between Subjects Effects</td>
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<tr>
<td>Expectancy</td>
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<td>1853906.6</td>
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<td>Constant</td>
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<td>.000</td>
</tr>
<tr>
<td>Within Subjects Effects</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Set</td>
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<td>1</td>
<td>137672.00</td>
<td>.36</td>
<td>.554</td>
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<td>Expectancy by Set</td>
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<td>382264.53</td>
<td>.99</td>
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<td>Within Cells</td>
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<td>36</td>
<td>384843.73</td>
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Table A.20: ANOVA Summary Table - Evaluation Times by Expectancy and Photograph Attractiveness When No Attempt Was Made to Overcome Expectancies
<table>
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<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects Effects</td>
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<td></td>
<td></td>
<td></td>
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<td>73</td>
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<td>1.033E+09</td>
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<tr>
<td>Within Subjects Effects</td>
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<td>Set (Attractiveness)</td>
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<td>7398475.0</td>
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<td>.000</td>
</tr>
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<td>Expectancy by Set</td>
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<td>17033.99</td>
<td>.04</td>
<td>.851</td>
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<td>Cognition by Set</td>
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<td>.000</td>
</tr>
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<td>Expectancy by Cognition by Set</td>
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<td>1020917.2</td>
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<td>.148</td>
</tr>
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<td>Within Cells</td>
<td>34841424.70</td>
<td>73</td>
<td>477279.79</td>
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</table>

Table A.21: ANOVA Summary Table - Evaluation Times by Expectancy, Manipulation of Cognition, and Photograph Attractiveness
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects Effects</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectancy</td>
<td>199096.24</td>
<td>1</td>
<td>199096.24</td>
<td>.06</td>
<td>.811</td>
</tr>
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<td>Within Cells</td>
<td>127667530.7</td>
<td>37</td>
<td>3450473.8</td>
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<td>Constant</td>
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<td>1.130E+09</td>
<td>327.44</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Within Subjects Effects</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Set (Attractiveness)</td>
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<td>18037252</td>
<td>31.80</td>
<td>.000</td>
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<td>659192.06</td>
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<td>.288</td>
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<td>567217.57</td>
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</table>

Table A.22: ANOVA Summary Table - Evaluation Times by Expectancy and Photograph Attractiveness for the Guided Cognition Condition
### Table A.23: Correlations Between Variables in the Interpersonal Attraction Study

<table>
<thead>
<tr>
<th></th>
<th>Rated Mirth</th>
<th>Spontaneous Thoughts</th>
<th>Evaluation Times</th>
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<tbody>
<tr>
<td></td>
<td>MI1</td>
<td>MI2</td>
<td>ST1</td>
</tr>
<tr>
<td>MI1</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MI2</td>
<td>.29</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>TH1</td>
<td>.09</td>
<td>.07</td>
<td>--</td>
</tr>
<tr>
<td>TH2</td>
<td>-.09</td>
<td>-.18</td>
<td>.62**</td>
</tr>
<tr>
<td>ET1</td>
<td>-.04</td>
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<td>.10</td>
</tr>
<tr>
<td>ET2</td>
<td>-.12</td>
<td>-.09</td>
<td>.19</td>
</tr>
</tbody>
</table>

**Note.** AT = Attraction, ST = Spontaneous Thoughts, ET = Evaluation Times.

Abbreviation Suffixes '1' and '2' Indicate Attractive and Moderately Attractive Photograph Sets, Respectively.

* p < .01; ** p < .001, two-tailed; n = 76
APPENDIX B

EXPERIMENTAL MATERIALS
MIRTH STUDY DIRECTIONS

Before the study begins:

DOUBLE CHECK MATERIALS:

Master box:
Subject Number Assignment sheet
Rating scales (all 4 conditions)
Manipulation Check forms
Questionnaire booklets
Debriefing booklet
Spare pencils
Blank tape

ARRIVE AT ROOM 10 MINUTES PRIOR TO FIRST SCHEDULED PARTICIPANT

POST THREE SIGNS (STAIRWELL, AND ON DOORS OF ROOMS 1 AND 5)

SET UP AND TEST CAMERA

Reminders:

PARTICIPANTS - NOT "Subjects"

V. Greet participant in stairwell in friendly manner, invite to room, seat at chair.

VI. TAPING SESSION DIRECTIONS

A. "As it said on the green sheet, in this experiment we will be rating the funniness of cartoons. You will receive one hour of course credit for participating in this experiment."
ENHANCED COGNITION CONDITION ONLY:

"Please note that before each cartoon, we would like you to stop and think carefully before rating what you feel."

ANTICIPATED INTERACTION CONDITION ONLY:

"After rating these cartoons, we will ask you for your thoughts while you were rating them.

"Any questions?"

ANSWER ANY QUESTIONS, GIVE BOOKLET (AGE & GENDER!) TURN ON CAMCORDER

"Ok, I'll be in the next room while you complete this. When you have finished, please come next door to room 5 to get me."

GO TO ROOM 5, CHECK ON ANY PREVIOUS SUBJECT, WAIT FOR RATER TO ARRIVE. RETURN WITH SUBJECT TO ROOM 1, TURN OFF CAMCORDER. TAKE PARTICIPANT'S RATING SCALES

VII. QUERY SESSION DIRECTIONS:

"Next I'd like to go through these cartoons one at a time and ask you what you were thinking when you saw each cartoon the first time.

"What were you thinking when you saw this cartoon?"

OPEN RATING SHEETS TO FIRST SHEET AND NOTE PARTICIPANT'S THOUGHTS ON RATING SHEET FOR EACH CARTOON IN SEQUENCE. USE PHRASES, NOT VERBATIM!
GIVE PARTICIPANT MANIPULATION CHECK FORM TO COMPLETE.

"That completes the first part of the study. All that is left is for you to complete three short questionnaires, which we can do in the next room."

VIII. QUESTIONNAIRE SESSION DIRECTIONS

TAKE PARTICIPANT TO ROOM 5, GIVE QUESTIONNAIRES TO COMPLETE.

KEEP LOOKING AT TIME: SIGN FIRST PARTICIPANT'S CARD: GET NEXT PARTICIPANT FROM STAIRWELL AND START ON TAPING SESSION.

WHEN PARTICIPANT HAS FINISHED, RETURN SIGNED CARD.

"Your participation in this study is complete, and I'd like to thank you for being a part of this. If you want, this booklet contains a debriefing sheet explaining this study, and it gives a person to contact if you have more questions about the study. Again, thanks."

GIVE PARTICIPANT DEBRIEFING BOOKLET TO READ. RETAIN BOOKLET!
MIRTH STUDY - INSTRUCTIONS FOR THE ELAPSED TIME CONTROL CONDITION

Before the study begins:

DOUBLE CHECK MATERIALS:

Master box:
    Timer
    Subject Number Assignment sheet
    Rating scales (SAME as cognitive control forms)
    Manipulation Check forms
    Questionnaire booklets
    Debriefing booklet
    Spare pencils
    Blank tape

ARRIVE AT ROOM 10 MINUTES PRIOR TO FIRST SCHEDULED PARTICIPANT

POST THREE SIGNS (STAIRWELL, AND ON DOORS OF ROOMS 1 AND 5)

SET UP AND TEST CAMERA

Reminders:

PARTICIPANTS - NOT "Subjects"

IX. Greet participant in stairwell in friendly manner, invite to room, seat at chair.

X. TAPING SESSION DIRECTIONS

    A. "As it said on the green sheet, in this experiment we will
be rating the funniness of cartoons. You will receive one hour of course credit for participating in this experiment. Before we go on, I need your signature on this release form so we can tape the session. You should know that you can revoke this consent at any time, that all of your responses will be anonymous, and that you are free to leave at any time."

GIVE PARTICIPANT FORM TO SIGN, WITNESS SIGNATURE

B. "Thanks.

"In the first part of this study, we will be looking at these cartoons. In order to keep participants from getting tired, we have divided the cartoons into these flip books so that each person in the study will only rate a few cartoons. You get to choose whichever color book you want."

GIVE CHOICE AND BOOKLET.

1. AFFECTIVE BIASING CONDITION:
   "Oh, the (color) book. Almost everyone thought these were really funny."

2. NON-AFFECTIVE BIASING CONDITION:
   "Ok, here's the (color) book."

SHOW PARTICIPANT RATING SCALES

"We'll use these scales to rate each cartoon. The numbers at the
tops of the pages match the numbers on the cartoons. Each scale asks you to say how much this cartoon amuses you. And on the outside we ask you to indicate your age and gender.

SHOW PARTICIPANT TIMER

"We will also be using this timer to rate the cartoons. As you can see, when you push this button, it times for 30 seconds and beeps when 40 seconds are up."

"What we'd like you to do each time you rate a cartoon is push the button on the timer, look at the cartoon, and then start counting backward by 3's from 100. We would like you to count out loud, as fast as you can. Then when the timer rings, turn off the beeper and rate how funny the cartoon is."

"This is a lot to do, so let me demonstrate how this will go..."

DEMONSTRATE PROCEDURE

"Any questions?"

ANSWER ANY QUESTIONS, GIVE BOOKLET (AGE & GENDER!) TURN ON CAMCORDER

"Ok, I'll be in the next room while you complete this. When you have finished, please come next door to room 5 to get me. If at any time you encounter a problem of any sort, with the timer or anything else, please come next door and get me."

GO TO ROOM 5, CHECK ON ANY PREVIOUS SUBJECT, WAIT FOR RATER TO
ARRIVE. RETURN WITH SUBJECT TO ROOM 1, TURN OFF CAMCORDER. TAKE PARTICIPANT’S RATING SCALES

XI. QUERY SESSION DIRECTIONS:

"Next I’d like to go through these cartoons one at a time and ask you what you were thinking when you saw each cartoon the first time.

"What were you thinking when you saw this cartoon?"

OPEN RATING SHEETS TO FIRST SHEET AND NOTE PARTICIPANT’S THOUGHTS ON RATING SHEET FOR EACH CARTOON IN SEQUENCE. USE PHRASES, NOT VERBATIM!

GIVE PARTICIPANT MANIPULATION CHECK FORM TO COMPLETE.

"That completes the first part of the study. All that is left is for you to complete three short questionnaires, which we can do in the next room."
XII. QUESTIONNAIRE SESSION DIRECTIONS

TAKE PARTICIPANT TO ROOM 5, GIVE QUESTIONNAIRES TO COMPLETE.

KEEP LOOKING AT TIME: SIGN FIRST PARTICIPANT'S CARD: GET NEXT PARTICIPANT FROM STAIRWELL AND START ON TAPING SESSION.

WHEN PARTICIPANT HAS FINISHED, RETURN SIGNED CARD.

"Your participation in this study is complete, and I'd like to thank you for being a part of this. If you want, this booklet contains a debriefing sheet explaining this study, and it gives a person to contact if you have more questions about the study. Again, thanks."

GIVE PARTICIPANT DEBRIEFING BOOKLET TO READ. RETAIN BOOKLET!
CONSENT FOR RECORDING

I understand that this session may be video-taped solely for purposes of data collection in experiment PH-2. I understand that only individuals immediately connected with this research project will be allowed to view this recording. I also understand that this recording will not be published or used for any other purpose without my written permission. I understand that I can revoke this release at any time and that the revocation must be signed and dated.

DATE: ___________________ PARTICIPANT SIGNATURE: ___________________

WITNESS: ___________________
Sample rating forms used for each of the conditions of Cognitive Manipulation to overcome expectancies in the mirth study follow this page. The forms are presented in this order: 1) Control; 2) Enhanced Cognition; 3) Guided Cognition; and 4) Anticipated Interaction. The Delayed Responding condition used rating forms which were identical to the Control condition. Separate sheets were provided to participants to rate each cartoon. Cartoons and rating sheets were clearly marked with the cartoon number. Sheets which followed the initial rating sheet in the booklet did not have blanks to enter age and gender.
CARTOON 1

Please indicate how much this cartoon amuses you

1 2 3 4 5 6 7
Not at all amused extremely amused
STOP AND THINK CAREFULLY BEFORE RATING YOUR RESPONSE

Please indicate how much this cartoon amuses you

1 2 3 4 5 6 7
Not at all amused extremely amused
Please complete the following ratings for this cartoon

**Degree of personal relevance**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all relevant</td>
<td></td>
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<tr>
<td>extremely relevant</td>
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**Degree to which the cartoon is true-to-life**

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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all true-to-life</td>
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<tr>
<td>extremely true-to-life</td>
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</table>

**Degree to which the cartoon expresses moral values**

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<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>expresses no moral values</td>
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<tr>
<td>expresses strong moral values</td>
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</table>

**Degree to which family and friends would be amused**

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<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all amused</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>extremely amused</td>
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</table>

Please indicate how much this cartoon amuses you

<table>
<thead>
<tr>
<th>1</th>
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<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all amused</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>extremely amused</td>
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</tbody>
</table>
Following the rating procedure, the experimenter will ask you for your thoughts about this cartoon.

Please indicate how much this cartoon amuses you

1  2  3  4  5  6  7
Not at all amused
            extremely amused
PRIOR EXPECTATIONS

1. When you first started looking at these cartoons, how funny did you expect them to be?

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<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all funny</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>very funny</td>
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2. What had you heard about this study prior to participating in it?
Debriefing Form: Mirth Study

Thank you for your participation in this study. The study which you have just completed is part of a larger investigation of the ways in which our expectations influence our emotions.

One popular cognitive theory of emotion says that when we are confronted by people, objects or events in the world, we feel the emotions we do because of the meanings which we attach to them. Recently, theorists have begun to incorporate expectations into these theories, claiming that the meaning we attach to object is determined partly by our expectations of what those objects will be. It follows that since expectations can influence the meanings we attach to objects, they also can influence the subsequent emotions which we experience. The study in which you have participated is a replication and extension of previous research which provided support for the hypothesis that expectations influence emotions. In this earlier study, it was shown that people experience mirth even when shown unfunny cartoons if they have reason to believe that the cartoons which they see will be funny.

The present study attempts to replicate this finding that expectations influence mirth. All participants in this study see the same set of cartoons, some of which are very funny and some of which are moderately funny. Some participants are told nothing about the cartoons, but some hear the experimenter remark "all these cartoons are really funny." The purpose of this is to let us see if expectations produce higher levels of mirth. The present study further explores ways in which the emotional effects of these expectations can be cancelled out.

If you have questions which remain unanswered or you would like to know more about this study, please feel free to call F. Stevens at 292-8009.
ATTRACTION STUDY DIRECTIONS

Before the study begins:

DOUBLE CHECK MATERIALS:
Master box:
Subject Number Assignment sheet
Rating scales (BOTH conditions)
Manipulation Check forms
Questionnaire booklets
Debriefing booklet
Spare pencils
Blank tape

ARRIVE AT ROOM 10 MINUTES PRIOR TO FIRST SCHEDULED PARTICIPANT

POST THREE SIGNS (STAIRWELL, AND ON DOORS OF ROOMS 1 AND 5)
(If at stadium, post signs at bottom door and top of stairwell)

SET UP AND TEST CAMERA

Reminders:

PARTICIPANTS - NOT "Subjects"

XIII. Greet participant in stairwell in friendly manner, invite to room, seat at chair.

XIV. TAPING SESSION DIRECTIONS

A.
"As it said on the green sheet, in this experiment we will be rating how attracted you are to particular individuals. You will receive one hour of course credit for participating in this experiment. Before we go on, I need your signature on this release form so we can tape the session. You should know that you can revoke this consent at any time, that all of your responses will be anonymous, and that you are free to leave at any time."

GIVE PARTICIPANT FORM TO SIGN, WITNESS SIGNATURE

B.
"Thanks.

"In the first part of this study, we will be looking at these photographs. In order to keep participants from getting tired, we have divided the cartoons into these flip books so that each person in the study will only rate a few photographs. You get to choose whichever color book you want."

GIVE CHOICE AND BOOKLET.

C.
AFFECTIVE BIASING CONDITION:
"Oh, the (color) book. Almost everyone thought these persons were really attractive."

D.
NON-AFFECTIVE BIASING CONDITION:

"Ok, here's the (color) book."
SHOW PARTICIPANT RATING SCALES

"We'll use these scales to rate each photograph. The numbers at the tops of the pages match the numbers on the photographs. Each scale asks you to say how much attraction you feel for this person. And on the outside we ask you to indicate your age and gender.

"Any questions?"

ANSWER ANY QUESTIONS, GIVE BOOKLET (AGE & GENDER!) TURN ON CAMCORDER

"Ok, I'll be in the next room while you complete this. When you have finished, please come next door to get me."

GO TO THE NEXT ROOM, CHECK ON ANY PREVIOUS SUBJECT, WAIT FOR RATER TO ARRIVE. RETURN WITH SUBJECT TO THE FIRST ROOM. TURN OFF CAMCORDER. TAKE PARTICIPANT'S RATING SCALES

XV. QUERY SESSION DIRECTIONS:

SHOW THE PARTICIPANT THE SPONTANEOUS THOUGHTS FORM.

"Please take a few minutes and go back through the booklet using this form. We'd like you to write down any thoughts you can remember having about these persons when you were rating your attraction for these persons."
GIVE PARTICIPANT MANIPULATION CHECK FORM TO COMPLETE.

'That completes the first part of the study. All that is left is for you to complete three short questionnaires, which we can do in the next room.'

XVI. QUESTIONNAIRE SESSION DIRECTIONS

TAKE PARTICIPANT TO THE OTHER ROOM, GIVE QUESTIONNAIRES TO COMPLETE.

KEEP LOOKING AT TIME: SIGN FIRST PARTICIPANT'S CARD: GET NEXT PARTICIPANT FROM THE WAITING AREA AND START ON TAPING SESSION.

WHEN THE PREVIOUS PARTICIPANT HAS FINISHED, RETURN SIGNED CARD.

"Your participation in this study is complete, and I'd like to thank you for being a part of this. If you want, this booklet contains a debriefing sheet explaining this study, and it gives a person to contact if you have more questions about the study. Again, thanks."

GIVE PARTICIPANT DEBRIEFING BOOKLET TO READ. RETAIN BOOKLET!
CONSENT FOR RECORDING

I understand that this session may be video-taped solely for purposes of data collection in experiment PH-2. I understand that only individuals immediately connected with this research project will be allowed to view this recording. I also understand that this recording will not be published or used for any other purpose without my written permission. I understand that I can revoke this release at any time and that the revocation must be signed and dated.

DATE: _________________ PARTICIPANT SIGNATURE: _________________

WITNESS: _________________
Copies of the male and female photograph sets used in the mirth study are not included for the purpose of protecting those persons' privacy. They may be viewed upon request by contacting the author.
SAMPLE FORMS FOR RATING ATTRACTION

Sample attraction rating forms used for the Control and Guided Cognition conditions follow this page. Separate sheets were provided to participants to rate each target person. Photographs and rating sheets were clearly marked with the cartoon number. Sheets which followed the initial rating sheet in the booklet did not have blanks to enter age and gender.
Photo 1

Please indicate how attractive this person is to you

1 2 3 4 5 6 7
Not at all extremely attractive
attractive
Please complete the following ratings for this photograph.

How often you meet more attractive people in the population:

1 very rarely
2
3
4
5
6
7 extremely often

How attractive is the person's hairstyle:

1 not at all attractive
2
3
4
5
6
7 extremely attractive

How attractive are the person's eyes:

1 not at all attractive
2
3
4
5
6
7 extremely attractive

Degree to which your friends would find this person attractive:

1 not at all attractive
2
3
4
5
6
7 extremely attractive

Please indicate how attractive this person is to you:

1 not at all attractive
2
3
4
5
6
7 extremely attractive
PRIOR EXPECTATIONS

Please indicate the extent to which you expected to see attractive persons just before you began looking at the photographs.

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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected to see persons who were not at all Attractive</td>
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<td></td>
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<tr>
<td>Expected to see persons who were very Attractive</td>
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What did you hear about this experiment prior to coming here, apart from reading the green sheet?
Debriefing Form: Attraction Study

Thank you for your participation in this study. The study which you have just completed is part of a larger investigation of the ways in which our expectations influence our emotions.

One popular cognitive theory of emotion says that when we are confronted by people, objects or events in the world, we feel the emotions we do because of the meanings which we attach to them. Recently, theorists have begun to incorporate expectations into these theories, claiming that the meaning we attach to object is determined partly by our expectations of what those objects will be. It follows that since expectations can influence the meanings we attach to objects, they also can influence the subsequent emotions which we experience. The study in which you have participated is a replication and extension of previous research which provided support for the hypothesis that expectations influence emotions. In this earlier study, it was shown that people experience mirth even when shown unfunny cartoons if they have reason to believe that the cartoons which they see will be funny.

The present study attempts to replicate this finding in the domain of attraction. All participants in this study see the same set of photographs, some of which feature very attractive and some of which feature moderately attractive individuals. Some participants are told nothing about these individuals, but some hear the experimenter remark "all these individuals are really attractive." The purpose of this is to let us see if expectations produce higher levels of attraction. The present study further explores ways in which the emotional effects of these expectations can be cancelled out.

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