Chronic and Temporary Distinct Expectancies as Comparison Standards: Automatic Contrast in Dispositional Judgments

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In 4 studies, the authors examined whether making outcome expectancies distinct resulted in their use as comparison standards and, consequently, in contrastive dispositional inferences for a target's behaviors. The expectancies examined were based on either chronic future-event expectancies (Study 1) or temporary, manipulated expectancy standards (Studies 2–4). Analyses revealed that when contextual expectancies were distinct or separable from target information, participants' dispositional judgments were contrasted from them under cognitive load and overcorrected (assimilated to them) under no load. These effects were mediated by participants' behavior categorizations. Evidence suggestive of a proceduralized form of correction for task difficulty and an effortful awareness-based correction for the effects of expectancies also were found. Results are examined in light of recent models of the dispositional inference process.

Over the past 40 years, social psychologists have learned a great deal about how ordinary perceivers give meaning to the observed actions of another person. Early treatments focused on the contents of perceivers' intuitive theories of action. Heider (1958), for example, proposed that perceivers believe successful enactment of purposive behavior by another is dependent, in large part, on the person's ability and the difficulty of environmental factors. Put more formally, he argued that if a person succeeds at some task, then perceivers' naive theories of action hold that that person's ability must be greater than the environmental difficulty. If the person fails (and if he or she was trying to perform the task), then his or her ability must be less than the environmental difficulty. Accordingly, when attempting to understand the performance outcomes of others, perceivers search for and use information about the other's relevant dispositions as well as information about potentially facilitative and inhibitory environmental factors.

To Heider's (1958) depiction of the contents of perceivers' intuitive theories of action, more recent treatments have added the notion that the default inferential goal often but not always is a dispositional one (cf. Krull, 1993). Theorists also have suggested that the dispositional inference process consists of stages that differ in terms of their resource requirements. For example, Gilbert's (1989) model proposes that when the goal is a dispositional one, perceivers first categorize a behavioral event or outcome (e.g., a successful test performance) and then characterize the target in dispositional terms (e.g., an intelligent person). Trope's (1986) model is similar in that it proposes that perceivers first identify or categorize a behavioral event in terms of attributionally relevant categories (e.g., the target performed intelligently). However, it also suggests, unlike Gilbert's model, that situational or other contextual factors may bias the product of this early stage of processing. Despite this difference, both models assume that initial categorizations and dispositional inferences require relatively few cognitive resources and are followed by a more resource-demanding attributional evaluation or correction stage wherein situational and other contextual information may be considered as alternative causes of the behavior.

A considerable body of research has supported these more recent process models of dispositional inferences. Several studies (Gilbert, Pelham, & Krull, 1988; Reich & Weary, 1998; Trope & Alfieri, 1997; Yost & Weary, 1996) have found that the earlier, more automatic stages of processing are relatively immune but the final correction or evaluation stage is susceptible to disruption by

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Partial reports of the data for Studies 1 and 2 were presented at the 106th Annual Convention of the American Psychological Association, San Fransisco, August 1998, as part of Gifford Weary's Division 8 Presidential Address; at the meeting of the American Psychological Association, May 1999, Chicago; and at the meeting of the American Psychological Society, June 1999, Denver, Colorado. The first two studies reported herein were completed in partial fulfillment of the Stephanie J. Tobin's master's thesis under the direction of Gifford Weary. This research was supported in part by National Science Foundation Research Grant SBR-9631858 and also by National Institute of Mental Health Training Grant T32-MH19728.

We thank the other members of the master's committee, Richard E. Petty and Robert M. Arkin. We also thank John A. Edwards, John Skowronski, Bill von Hippel, Leigh Ann Vaughn, and Aaron Wichman for their helpful comments on a draft of this article. Finally, we gratefully acknowledge the help of David J. Angelo throughout the conduct of the research reported in this article.

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Journal of Personality and Social Psychology, 2001, Vol. 80, No. 3, 365–380

0022-3514/01/$5.00 DOI: 10.1037//0022-3514.80.3.365

distraction or other manipulations designed to deplete attentional resources (Gilbert et al., 1988; Reeder, 1997). The earlier stages have been found, however, to be susceptible to influence by salient situational information (Trope & Gaunt, 1999) and by other contextually activated or chronically accessible knowledge structures (e.g., Reich & Weary, 1998; Weary & Reich, in press). That is, such contextual information has been shown to bias behavior categorizations and initial dispositional inferences without perceivers devoting much attention to or even being aware of the process.

But what, exactly, is the direction of this influence of stored and activated contextual information on the early stages of the dispositional inference process? Almost without exception, attribution theorists and researchers have focused on the assimilative effects of contextual information on behavior categorization and characterization processes (Gilbert et al., 1988; Krull & Erickson, 1995; Reich & Weary, 1998; Trope, 1986; Trope & Alfieri, 1997; cf. Weary & Reich, in press). Might there be conditions under which another's initial behavior categorizations and dispositional characterizations are automatically contrasted from (i.e., inconsistent with) the implications of contextual information? If so, what might be the implications of such contrastive target judgments for the inference process? Might perceivers correct for contrastive biases? Do such corrections require cognitive resources?

These and related questions constitute the major foci of the current research. They suggest additional complexities to the dispositional inference process, complexities not addressed by the current models. To answer them, however, requires a brief consideration of research that has examined the processes underlying general judgmental assimilation and contrast effects.

Assimilation Versus Contrast of Social Judgments

Although generally neglected by attribution researchers, certainly the topic of when and how contextual information results in assimilative or contrastive effects on various social judgments has a long history in psychology in general and in social psychology in particular (for reviews, see Eiser, 1990; Schwarz & Bless, 1992). Although numerous models have been offered to explain the processes underlying such effects (Helson, 1964; Manis & Paskewitz, 1984; Ostrom & Upshaw, 1968; Sherif & Hovland, 1961), the more recent and integrative social–cognitive models (e.g., Herr, 1986; Schwarz & Bless, 1992) have focused on categorization processes as critical determinants of the direction of influence of contextual information.

According to these models, assimilation is the default direction of influence and results when target and context are assigned to the same category; contrast emerges when, as a result of various characteristics of the contextual information, target and context are assigned to different categories. When, for example, accessible and applicable contextual information is subliminally primed or is otherwise made indistinct from the target information, inclusive categorization and, hence, assimilation are more likely to occur (Martin & Seta, 1983; Stapel & Spears, 1996; Stapel & Winkielman, 1998). When the contextual information is made distinct from the target information, when it clearly constitutes a separate entity with object boundaries, then it likely will be excluded (i.e., subtracted) from the target representation. This excluded information, if applicable to the focal judgments, then may serve as an anchor or standard of comparison in evaluations of ambiguous or vague target information (Schwarz & Bless, 1992). The result is likely to be a contrast of target judgments from contextual information.

It is important to note that in the social–cognitive literature, the process of exclusion of contextual information from target representations generally has been thought to require more steps and more cognitive effort than does the default assimilative process. However, some investigators recently have questioned whether this really is the case for comparison-based contrast. That is, some have suggested that when contextual information is excluded from target representations, comparison contrast, not assimilation, might be the default direction of contextual effects and that it might require relatively few cognitive resources (Stapel, Koomen, & van der Pligt, 1996; Stapel & Winkielman, 1998; Wegener & Petty, 1997). In fact, it has been argued that even some instances of apparent judgmental assimilation actually reflect initial contrastive influences of the context for which perceivers intentionally have (over)corrected their focal judgments (Newman & Uleman, 1990; Wilson & Brekke, 1994).

In the current research, we seek to examine whether comparison-based contrast processes might, under some conditions, result in automatic contrastive behavior categorizations and corresponding characterizations of another's dispositions. We also seek to examine whether correction for such contrastive influences might occur when perceivers have the requisite cognitive resources. Finally, an additional but secondary purpose of this research is to shed light on the possible efficiency of comparison contrast (cf. Moskowitz & Skurnik, 1999). Such efficiency would, of course, be necessary for it to influence the early, automatic stages of the inference process.

The Current Research

One of the most frequently rendered and consequential judgments people make about others concerns their levels of ability. It is not surprising that a large literature has focused on the role of various contextual factors in perceivers' attributions of ability (for a review, see Weiner, 1986). We focus here on the role of their chronic and temporary expectations for future-event outcomes in the attribution process. Although the concept of temporary outcome expectancies probably needs little explanation, that may not be true of the notion of chronic future-event expectancies.

In brief, Andersen and her colleagues have suggested that people vary in their tendencies to think about the future. Some expect primarily positive things to happen; others, most notably moderately and severely depressed individuals, expect negative things to occur (Andersen, 1990). Moreover, those with particularly pessimistic expectancies develop through experience and rehearsal a highly efficient knowledge structure, or schema, for predicting future events. This schema operates relatively effortlessly in that few cognitive resources are required, and its contents are applicable to the outcomes of both the self and others (Andersen, Spielman, & Bargh, 1992). Andersen further argued that those who have generally positive expectancies think less frequently about the future; as a consequence, they develop no elaborate, efficient schemata that enable the automatic prediction of future events. With sufficient cognitive resources, however, they do tend to render more positive predictions for their own and others' outcomes.

In a recent study, Reich and Weary (1998) provided evidence regarding the impact of perceivers' chronically accessible, negative future-event expectancies on dispositional inferences about a target. They found that following observation of the target's performance on a test of cognitive ability, perceivers who possessed negative future-event expectancies, as compared with those who possessed more positive expectancies, made more negative characterizations of a target's ability. Reich and Weary argued that such assimilative effects probably were implicit and unconscious—that is, that they resulted from use of the chronic expectancies as interpretive frames in the early stages of the dispositional inference process.

What might have happened, though, if participants in Reich and Weary's (1998) studies had consciously thought about their generalized expectancies before viewing the target's taped performance? Certainly, directing such conscious attention to base-rate expectancies would activate and make explicit (Olson, Roese, & Zanna, 1996) even the expectancies of individuals who possess positive but not chronically accessible expectancies. It also might well have instantiated them as distinct and separable from the target information. Such distinctness of future-event expectancies should result in their use as comparison standards and, hence, in contrastive rather than assimilative target judgments.[1] Study 1 examines this possibility.

Moreover, in three additional studies, we extend the above reasoning to an examination of the attributional effects of perceivers' distinct, temporary expectancies. In Study 2, prior to observing the target's taped task performance, participants were asked to think about what a very successful or unsuccessful performance might look like; activation of such performance categories should result in the generation of distinct performance expectancies. The last two studies use additional and different operations to manipulate directly the distinctness of perceivers' negative (Study 3) or positive and negative (Study 4) temporary expectancies for the target's performance. In all studies, we expected that distinct, temporary outcome expectancies would be used as comparison standards and would, as a result, produce automatic, contrastive effects on judgments of the target's performance and ability levels. Temporary expectancies that were nondistinct, however, were expected to be used as interpretation frames and to result in automatic, assimilative influences on the dispositional inference process. Correction for these initial contextual influences also was examined in all four studies.

Study 1

With the exception of the procedure designed to make participants' future-event expectancies explicit and distinct from the subsequently encountered target information, our procedures and target materials for Study 1 were similar to those used by Reich and Weary (1998, Study 2). Specifically, all participants were told that their task was to observe a child's (intentionally vague) performance on several tests of spatial ability and to judge the child's general level of intelligence. They then were asked to select one of four tapes to watch and were given information designed to focus attention on their expectancies about the child's performance. Additionally, half of the participants were asked to keep an eight-digit number in mind while they watched the tape and completed measures designed to assess their perceptions of the child's level of performance, his general level of intelligence, and the difficulty of the task. The other half of the participants received no such instructions about a concurrent memory load task; they simply watched the tape and completed the dependent measures.

Studies of contrastive social judgments have manipulated the distinctness of contextual information by having participants rate the information before rating the target (Stapel & Spears, 1996; Stapel & Winkielman, 1998). In Study 1, we certainly could have directed participants' conscious attention to their base-rate expectancies by having them complete, prior to observation of a specific target's performance, an assessment of either their target-based or their generalized expectancies. This should have permitted even individuals with primarily positive future-event expectancies (i.e., those not thought to possess efficient schemata that enable the automatic prediction of future events) to generate generalized, distinct expectancies. However, we suspected that it also would have introduced unwanted consistency motivation or experimental demand. Therefore, we sought a less demanding method of directing participants' conscious attention to their outcome expectancies.

In this study, immediately after participants had selected a tape to watch, we gave them information about the taped performance. This information was designed to focus their attention on their performance expectancies without revealing any actual trait- or performance-relevant information about the target. Specifically, we informed them that although there were time requirements associated with the test items that they were about to observe on the tape, information about whether this particular child met those requirements was not available. This information should serve to activate and focus the conscious attention of all participants on their expectancies for the videotaped performance. Because they had no information about the specific target or task on which to base such expectancies, all participants, even positive-expectancy participants, had to rely on their generalized expectations. Such a procedure should provide a distinct frame of reference for the participants' subsequent interpretations of the target.

Accordingly, we predicted that when under cognitive load, participants who possessed negative future-event expectancies would automatically (i.e., efficiently and uncontrollably) judge the behavior as more successful and the target as more intelligent, as compared with participants who possessed positive future-event expectancies. We further expected that all participants would engage in effortful correction processes when they had the requisite

[1] In a recent study, Stapel and Schwarz (1998) found that expectancies were more likely to serve as interpretive frames for ambiguous target information but were more likely to serve as selective filtering devices and comparison standards for mixed behaviors. The relevance of these findings to the current research is not at all clear. It is difficult to fit our videotaped stimulus materials into either an ambiguous or a mixed behavior category. Such distinctions are much easier to make with respect to prestructured, linguistic material of the sort used by Stapel and Schwarz. However, the most apt description of our tape is *vague*. Because Stapel and Schwarz argued that the effects of expectancies should be the same for both ambiguous and vague information, their analysis suggests that we should find assimilative effects of expectancies under all conditions, unless perceivers are aware of the biasing influence of their expectancies and have the requisite motivation and ability to correct for such influences.

cognitive resources. Although attribution researchers generally have argued, or at least implied, that recategorization of behavior often does not take place (Gilbert, 1989; Trope, 1986; Trope & Alfieri, 1997), several studies have shown that participants can recategorize their initial impressions of target behavior if the original behavioral information can be recalled and if there are sufficient cognitive and motivational resources (Thompson, Roman, Moskowitz, Chaiken, & Bargh, 1994). It seemed likely that our no-load participants would be aware of the potential influence of their conscious expectancies on their target judgments. Thus, we predicted that no-load participants would correct their categorizations of the target's performance for this influence. We expected these recategorizations, in turn, to mediate the effects of no-load participants' chronic expectancies on their final dispositional inferences.

Because all participants were given a dispositional inference goal, we also expected that their conscious, distinct expectancies would be most directly relevant to and only used as comparison standards for their behavior categorizations and dispositional inferences. Consequently, we did not expect participants' task difficulty inferences under cognitive load to be contrasted from their chronic expectancies. Indeed, because these were unintended by-products of the intentional pursuit of a dispositional, observational goal, it was unclear what processes would affect them (Reich & Weary, 1998). What was clear, however, was that participants, at least under no-load conditions, should augment their dispositional inferences to the degree that they perceive the task as difficult.

Method

Participants

Participants were 87 male and female university students enrolled in introductory psychology classes. They received partial course credit for their participation. Experimental sessions consisted of groups of 2–6 participants; each group was randomly assigned to either the cognitive load or the no-load condition (*n*s per condition = 19–21).

Materials

The stimulus information used in this experiment was conveyed through a 5-min videotape of an 11-year-old boy performing four test items (as used in Reich & Weary, 1998). It showed four 30- to 78-s clips of the boy performing four moderately difficult spatial ability tasks taken from the block design subset of the Stanford–Binet Intelligence Scale (Thorndike, Hagen, & Sattler, 1985). Because the view of the child's work occasionally was obstructed either by the answer key or by the examiner's head and because the audio portion was omitted from the tape, it was somewhat difficult to tell how well the child was doing and whether the task had been completed successfully.[2]

Procedure

The experimenter greeted the participants and explained that they would be asked to watch a video of a child performing a spatial ability task, to complete a questionnaire about their impressions of the performance, and also to fill out several scales for the psychology department. Participants then read specific instructions about the experimental task. They were informed that they would watch one of four 5-min videotapes of a child performing different spatial ability tasks. They were told that the children varied in their levels of intelligence and that the tasks, which measured an important component of intelligence, varied in their levels of difficulty. The instructions further stated that although some children performed their tasks quite successfully, others were less successful. The instructions included a reminder that very intelligent people sometimes appear less intelligent because they are performing a difficult task and less intelligent people sometimes appear very intelligent because they are performing a simple task. The participants' task was to figure out how generally intelligent the child was.

Four videotapes with different labels were positioned above the television screen. The four tapes actually were identical. The instructions indicating that the tapes depicted different children and different tasks were intended to lead participants to think that the performance they were to watch was randomly rather than specifically selected for particular performance characteristics.

Expectancy focus paragraph. Next, 1 participant in each group drew a slip of paper from a box to determine which of the four videotapes the group would watch. The experimenter announced the chosen video (i.e., "Child 1, Task S") and removed some index cards from the jacket of the chosen videotape. The experimenter distributed a card to each participant and announced that it contained additional information about this particular video. Participants were told to read the card carefully and then give it back to the experimenter.[3] The card read as follows:

> Child 1, Task S
>
> All of the individual test items you will see on this video were *timed.* In order to move on to the next set of test items, the child needed to complete all items in the current set within a certain time frame. This child managed to complete the set of test items you will be viewing. However, information on whether or not he met the time requirements is not available.

After participants read the paragraph, the experimenter briefly reminded participants that their goal was to figure out the child's intelligence level and, for the cognitive-load participants only, also to remember the number that would appear on the screen.

Cognitive load. To manipulate the attentional resources available for making behavior categorization and attributional inferences, we instructed half of the participants to engage in a second task while viewing the videotape. For these participants, an eight-digit number was presented for 20 s at the beginning of the videotape. The participants were asked to cognitively rehearse the number as they watched the tape.

Dependent measures. After viewing the tape, all participants completed a questionnaire packet. Two questions assessed dispositional judgments; participants rated on 9-point scales the intelligence of the child in the videotape (1 = *very low*, 9 = *very high*) and how they thought the child would perform on similar other tasks (1 = *very poorly*, 9 = *very well*). Two questions assessed participants' categorization of performance; one asked participants to rate how well the child performed on the spatial ability task (1 = *very poorly*, 9 = *very well*), and the other asked them to

[2] To check on the insufficiency of the information provided by the tape for confident behavior categorization, participants in Reich and Weary's (1998) studies were asked to indicate on a 9-point rating scale the degree to which it was difficult to tell how well the child had performed. In both studies, all participants indicated that it was moderately difficult (Study 1: $M = 6.05$, $SD = 1.90$; Study 2: $M = 5.71$, $SD = 1.88$).

[3] Expectancy measures are notoriously reactive measures, and for this reason assessments of participants' prevideo expectancies were not obtained in Study 1. However, pilot testing of this general, prevideo procedure, including the load instructions, has shown that prior to observation of the target's behavior, participants' expectancies are in line with their chronic FES levels, $F(1, 46) = 6.71$, $p < .02$ (*M*s = 5.33 and 6.15 for negative and positive FES groups, respectively).

rate the level of performance that was depicted in the tape they had watched (1 = *very unsuccessful*, 9 = *very successful*). Participants also rated how difficult the spatial ability task was (1 = *not at all difficult*, 9 = *very difficult*) and how easy they thought the task would be for most children this age (1 = *not at all easy*, 9 = *very easy*). Eight different orders of these questions were used; however, a dispositional or a categorization question always came first. Participants who were required to remember the eight-digit number recorded the number after they had completed these measures. All participants next rated the child's likability, social skills, nervousness, attention to the task, and activity level. Following these questions, participants answered four multiple-choice questions designed to assess their recall of details of the video.

Scales. Lastly, all participants completed in counterbalanced order the Beck Depression Inventory (BDI; Beck, 1967) and the Future-Event Expectancy Scale (FES) developed by Andersen (1990). These scales ostensibly were part of a separate study being conducted by the psychology department. The FES contains 26 items that describe both positive and negative events. Participants in the current study judged on an 11-point scale (−5 = *extremely unlikely*, 5 = *extremely likely*) the likelihood of each event happening to them at some point in their lives. After completing these two scales, participants were fully debriefed, with one exception. In accord with local institutional review board requirements, they were not told that the BDI is a measure of depressive symptoms.

Results[4]

Descriptive Statistics for the FES

The sum of participants' likelihood ratings for the negative events was subtracted from the sum of their likelihood ratings for the positive events. Total scores on the FES ranged from −57 to 108, with a mean of 46.36 and a median of 45. A median split was used to divide participants into positive and negative FES groups. The negative FES group included the 2 participants whose scores fell at the median.

Preliminary Analyses

The FES and BDI were assessed at the end of the experimental session to avoid priming negative affect and depression-related thoughts (Reich & Weary, 1998; Weary & Reich, in press). Hence, it was necessary to show that our experimental manipulation did not affect scores on these measures. One-way analyses of variance (ANOVAs) revealed no effect of load on FES or BDI scores. Additional analyses revealed that the order of the two scales at the end of the experimental session also had no effect on either FES or BDI scores.

Initial analyses on all attributionally relevant measures included as covariates participants' BDI scores and the BDI × Load interaction. We performed these analyses to ensure that any obtained effects of the FES were due to chronic expectancies for the future rather than to chronic negative affect. Because they revealed no significant effects for either of the covariate terms, we do not present them here.

Recall

Digits. The number of digits correctly recalled and positioned by participants in the cognitive-load condition should show a small number of errors. That is, a small number of mistakes indicates both that participants are engaging in the memory task and that the task is difficult enough to represent a cognitive demand for them (Gilbert & Hixon, 1991). Participants in the cognitive-load condition showed an average recall rate of 86%. Several researchers have suggested that participants who recall correctly only half or fewer than half of the digits should be excluded from analyses; that is, a large number of errors may suggest that participants were not engaged in the cognitive-load task and, therefore, were not under any cognitive load (e.g., Gilbert & Hixon, 1991). Four participants in Study 1 recalled three or fewer of the eight digits. In accord with the above recommendation, we excluded their data from further analyses. For the remaining participants, there were no effects of FES on the number of digits correctly recalled.

Surprise video recall. Because the load manipulation was introduced prior to observation of the tape, we wanted to assess whether differences in judgments between participants under cognitive load and under no load might have been due to differences in their encoding of the details of the video. Participants responded to four multiple-choice questions about various details of the video: how many test items the child performed, what the color of the child's shirt was, what was in the background, and what the color of the test administrator's hair was. A 2 (FES group: positive, negative) × 2 (cognitive load: load, no load) ANOVA revealed no significant main or interaction effects on the average number of questions answered correctly ($M = 3.16$).

Dispositional Inferences

Because the two dispositional items were highly correlated ($r = .67$, $p < .01$), we averaged them to create a dispositional inference index. A 2 (FES group) × 2 (cognitive load) ANOVA conducted on this index yielded only the predicted Cognitive Load × FES interaction, $F(1, 79) = 11.07$, $p <. 01$. The results of a priori comparisons[5] of the means involved in this interaction effect (see Table 1) revealed, as predicted, that the relatively automatic dispositional inferences made under conditions of cognitive load were contrasted from, whereas those made under no load were assimilated to, participants' chronic expectancies.[6]

Mediational Analyses

Behavior categorizations. Theoretically, we would expect the effects of participants' chronic expectancies on their dispositional inferences to be mediated by their categorizations of the child's

[4] For all studies, initial analyses on all dependent variables included the participants' gender as a variable. Overall, very few effects associated with gender emerged, and none were obtained on any of the primary analyses involving the dispositional index measure. Indeed, the only effect of gender that qualified any predicted finding was an FES × Load × Gender interaction on the categorization index for Study 1. This interaction qualified a significant FES × Load interaction and merely reflected the fact that under load conditions, categorization judgments showed less differentiation as a function of participants' chronic expectancies for female than for male participants. Because gender effects were not predicted and because so few gender effects were found for all studies, we report analyses that collapsed across this variable.

[5] All a priori comparisons of means used one-tailed tests of significance.

[6] Although our use of a median split approach to categorize participants as possessing positive or negative future-event expectancies is consistent with past research (Reich & Weary, 1998; Weary & Reich, in press; Weary, Reich, & Tobin, in press), it also may have resulted in the

Table 1
Study 1: Mean Target and Task Ratings as a Function of Cognitive Load and FES

Dependent measure	Cognitive load: Load	Cognitive load: No load
Behavior categorization		
Negative FES	7.67_a	6.76_b
Positive FES	7.13_b	7.89_a
Dispositional inferences		
Negative FES	7.48_a	6.62_b
Positive FES	6.63_b	7.36_a
Task difficulty		
Negative FES	6.14_a	5.10_b
Positive FES	5.58_a	6.00_a

Note. Ratings were made on a 9-point scale (lower numbers indicate less successful performance, lower level of ability, and lower level of task difficulty). Higher numbers indicate greater mean ratings on all indices. On the behavior categorization index, the difference between means for the load conditions is a trend ($p < .09$). For all other comparisons on each measure, means with different subscripts differ at $p < .05$. FES = Future-Event Expectancy Scale (Anderson, 1990).

performance (Trope, 1986). Because the effects of participants' chronic expectancies on dispositional inferences varied systematically as a function of the cognitive-load manipulation, an examination of this notion required a test of moderated mediation. We followed the procedures outlined by Baron and Kenny (1986) for such tests.

Because the two behavior categorization items were highly correlated ($r = .62$, $p < .01$), we averaged them to create a categorization index. First, we regressed dispositional inferences on FES group, load, and the FES × Load interaction. The FES × Load interaction significantly predicted dispositional inferences ($\beta = -.35, p < .01$). Second, we regressed categorizations on FES group, load, and FES × Load. The FES × Load interaction significantly predicted the mediator, behavior categorizations ($\beta = -.33$, $p < .01$). The nature of this interaction effect is depicted in Table 1. Third, we regressed dispositional inferences on FES group, load, FES × Load, and categorization index scores (see Figure 1). Behavior categorizations were a significant predictor of dispositional inferences ($\beta = .74$, $p < .01$), whereas the FES × Load interaction no longer was ($\beta = -.11$, $p > .16$). We also performed a Sobel test (Baron & Kenny, 1986) to confirm that the reduction in the path from the FES × Load interaction to dispositional inferences was significant when behavior categorizations were included in the regression equation, ($z = -2.98$, $p < .01$). The results of the above analyses, then, provide support for the mediation of dispositional inferences by behavior categorizations.[7]

Situational inferences. The two situational questions were not as highly correlated as the other measures were ($r = -.28$);

misclassification of some participants whose scores on the FES fell close to the median. Consequently, for all analyses involving the dispositional inference index (including the mediational analyses), we conducted regressions using continuous and centered FES scores. In all instances, the significant effects were identical to those obtained in the analyses using the categorical independent FES variable.

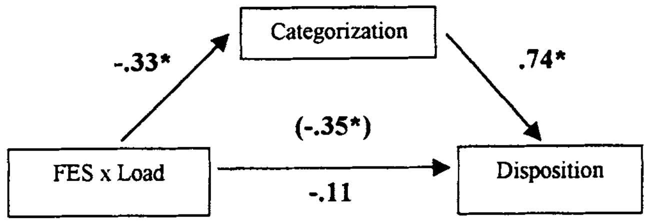

Figure 1. Categorization as a mediator of dispositional inferences in Study 1. The number in parentheses indicates the direct effect of the predictor on the criterion prior to inclusion of the mediator in the regression equation. FES = Future-Event Expectancy Scale (Anderson, 1990). * $p < .05$.

consequently, we conducted analyses of the effects of situational inferences separately for each of the measures of situational inferences. Because the analyses involving the task ease measure revealed no significant effects, we report only the analyses for the task difficulty item.

An initial 2 (FES) × 2 (load) ANOVA conducted on the measure of task difficulty revealed a significant interaction effect, $F(1, 79) = 4.52, p < .04$. The means involved in this effect and the results of pairwise comparisons are presented in Table 1.

Could these task difficulty judgments affect, beyond any influence of behavior categorizations, dispositional inferences? If so, adding the centered task difficulty ratings to the final regression equation for testing the mediation of behavior categorizations on dispositional inferences should show both to be significant predictors. As in the Step 3 equation reported above, the FES × Load interaction effect no longer predicted dispositional inferences ($\beta = -.09$, $p > .22$), whereas behavior categorizations ($\beta = .69$, $p < .01$) and task difficulty inferences did ($\beta = .15$, $p < .07$). These results, then, suggest that the apparent assimilation of dispositional inferences to participants' chronic expectancies under no-load conditions resulted, in part, from inferential corrections for situational factors. The fact that this influence of situational on dispositional judgments occurred even under load (separate regressions verified that the relationships between task difficulty and dispositional inferences were very similar for the load and no-load conditions; βs = .15 and .14, respectively) further suggests that the use of task difficulty in drawing inferences about intelligence may be somewhat proceduralized in college students. That is, students may be able to incorporate situational considerations into their dispositional inferences about another person's intelligence with few cognitive resources.

Ancillary Measures

If the behavior categorization and dispositional inference results reflect comparison-based processes, we should find no differences

[7] We have chosen to conduct our path analyses in accord with past theory and research that suggests that when perceivers have a dispositional inference goal, they make behavior categorizations first and then form and evaluate dispositional inferences (Gilbert et al., 1988; Trope, 1986; Krull & Erickson, 1996). It is important to note, however, that the opposite direction of causality (i.e., that dispositional inferences are made first and cause behavior categorizations) cannot be ruled out in any of the current studies. For all four studies, the mediational analyses work as well for one as for the other possibility.

in participants' standard-irrelevant evaluations of the target's behavior and characteristics (Schwarz & Bless, 1992). To examine the possible generalization of contrast effects on standard-irrelevant judgments, we included several ancillary measures examining participants' general reactions to the child. We conducted separate two-way ANOVAs on ratings of the child's likability, sociability, nervousness, attention to the task, and activity level. On likability ratings, a main effect of FES was obtained, $F(1, 79) = 4.09$, $p < .05$; negative, as compared with positive, FES participants thought the child was less likable (*M*s = 6.64 vs. 7.22). No significant main or interaction effects were obtained on the other measures.

Discussion

In Study 1, we investigated the possibility that making perceivers' immediate performance expectancies, which were based on their implicit chronic future-event expectancies, explicit and distinct would result in their subsequent use as comparison standards in evaluating a target's outcome (Skowronski, Carlston, & Isham, 1993; Stapel & Spears, 1996; Stapel & Winkielman, 1998). Such a process should result in relatively automatic contrastive behavior categorizations. However, awareness-based and effortful correction for the automatic contrastive behavior categorizations should result in correction and possibly even assimilation (i.e., overcorrection) to explicit expectancies about the performance when perceivers have the requisite cognitive resources (Wegener & Petty, 1997; see also Wilson & Brekke, 1994).

The results offer support for these arguments. Participants' inferences about the target's level of performance were contrasted from the implications of their explicit, chronic expectancies under conditions of cognitive load; under no-load conditions, participants' inferences about the target's performance outcome were assimilated to their chronic event expectancies. Moreover, these behavior categorizations were shown to mediate the effects of participants' chronic expectancies and cognitive load on their dispositional inferences of the target's ability.

That participants' nonfocal (nongoal-relevant) and standard-irrelevant inferences about the target showed no contrast from their chronic expectancies indirectly offers additional support for the notion that the effects found on our focal attributional inferences under cognitive-load conditions were due to the construction of comparison standards rather than to the simple subtraction of general positive and negative material from representations of the target (Schwarz & Bless, 1992). More specifically, participants' conscious expectancies were directed by their observational goal toward a consideration of the target's attributionally relevant behavior and disposition. As a result, they apparently did not think about the target's ancillary, task-related behaviors or general characteristics in terms of the expectancy-based comparison standard.

Although we did not predict it, we obtained evidence that participants' task difficulty inferences were weakly assimilated to the implications of their chronic expectancies (i.e., that negative expectancy participants saw the task as an obstacle to successful performance) but contrasted from them under no-load conditions. Why might this have been?

In this study, we activated through our instructions a compensatory schema (with graded causes and effects) for the effects of ability and task difficulty on the target's performance. It is important to note that such a schema permits a calibration of one cause against another (i.e., the effect—successful performance—could have occurred either because the child was very intelligent or because the task was very easy). One implication of use of this kind of schema in the current context is that the most confident inference about ability could be made if the same level of success were achieved on a difficult task (Kelley, 1972). Our participants apparently arrived at initial characterizations of the task that would have permitted the most confident goal-relevant inferences to be made. That is, negative (positive) FES participants formed an initial hypothesis that the relatively successful (less successful) performance they had observed occurred on a relatively difficult (less difficult) task (Krull & Erickson, 1995; Trope, 1986). When they had the requisite resources available, they recategorized the observed behavior and formed a new hypothesis that, again, would allow for the most confident goal-relevant inferences.

It is interesting to note that having formed such characterizations of the task, participants then appeared to use them to adjust their dispositional inferences. That is, we found a tendency for inferences of higher task difficulty to be associated with inferences of higher target intelligence, even after the effects of behavior categorizations were taken into account. Moreover, this association of task difficulty and ability ratings held regardless of whether participants had the cognitive resources thought to be necessary by some current attribution theorists for attributional correction. These latter results, then, suggest that the apparent assimilation of dispositional inferences to participants' chronic expectancies resulted, in part, from the proceduralized discounting (augmentation) of ability inferences for facilitative (inhibitory) situational factors.

This result was not entirely unexpected. Our participants, after all, were college students who undoubtedly routinely engaged in causal analyses of their own and others' performances on cognitive ability tests. It would not be surprising, therefore, if they had developed well-rehearsed attributional templates or schemata in this domain, ones that permit "proceduralized correction" of dispositional inferences for situational factors. Moreover, such findings of proceduralized adjustment of dispositional for task difficulty inferences are consistent with Trope's model of the dispositional inference process (Trope & Gaunt, 1999). Specifically, that model suggests that although cognitive load may impair perceivers' ability to integrate dispositional and situational information, the perceivers still may be able to do so when the situational information is very prominent.

Study 2

On the basis of past research (Reich & Weary, 1998), we assumed in Study 1 that participants' initial expectancies would be consistent with their future-event expectancies and that they would be used as comparison standards in evaluating the quality of the target's performance. However, to test further the idea that performance expectancies could serve as comparison standards and lead to automatic contrast in target judgments, we conducted a second study in which we directed participants' conscious attention to particular categories of performance. Such highly accessible performance categories should, in turn, create strong and distinct expectations for the target's performance outcome that should be available for use as reference standards.

In Study 2, we used the same procedure as in Study 1, with one major difference: In this study, we instructed the participants to think about what a highly successful or unsuccessful performance on a test of intelligence typically looks like. On the basis of conversational norms (Grice, 1975), we anticipated that participants would interpret these instructions as relevant to the task of judging the child's intelligence and thus would form corresponding, temporary expectancies about the videotaped performance.

We expected that these temporary expectancies would serve as comparison standards for target judgments and, consequently, would result in automatic contrast of behavior categorizations and characterizations; under no-load conditions, we expected effortful correction of target judgments. We again predicted that participants' behavior categorizations would mediate the effects of temporary expectancies and cognitive load on dispositional inferences. In accord with the results of Study 1, we also expected attributional correction of participants' dispositional inferences both under load and under no load.

Method

Participants

Participants were 103 male and female university students enrolled in introductory psychology classes who received partial course credit for their participation. We ran the experiment in groups of 2–6 participants; these groups were randomly assigned to the load conditions. Assignment to expectancy conditions was random (*n*s per condition = 24–26).

Procedure

The procedure, cognitive-load manipulation, instructions, and materials were identical to Study 1, with several exceptions. First, instead of receiving the expectancy focus card, participants received instructions to take a minute to think about what a highly unsuccessful or a highly successful performance on an intelligence test might look like. Specifically, after the participants read the instructions for the experimental task and chose a videotape, the experimenter announced that there were some additional instructions. Each participant received the following paragraph with the word *successful* or *unsuccessful* inserted:

> The audio portion of the tape you are about to observe has been omitted. To help you to diagnose the child's ability level, it might be helpful for you to take a minute to think about what a highly successful (unsuccessful) performance on tests of intelligence might look like. After 1 min, the experimenter collected the instructions, reminded participants of their goals (as in Study 1), and started the videotape.[8]

Second, there were several changes in the main dependent measures. One of the dispositional inference items was changed: Instead of rating how the child would perform on similar other tasks, participants in Study 2 rated the spatial ability of the child in the video. The two categorization items were the same, but one of the situational items was changed slightly: Instead of rating how easy the task would be for other children this age, participants simply rated how easy the task was. The order of the dispositional and categorization questions was counterbalanced, and the situational items always followed.

As in Study 1, participants completed the ratings of the nonfocal characteristics of the child and the four multiple-choice questions about details of the video. In Study 2, an affect scale (Cacioppo, Martzke, Petty, & Tassinary, 1988) was included to assess current positive and negative affect. Participants rated 8 three-word adjective clusters on 7-point scales (1 = *not at all*, 7 = *very strongly*), indicating how they currently felt.

Results

For Studies 2–4, preliminary analyses on all attributionally relevant measures used as covariates an overall index of negative affect (calculated by reverse scoring the sum of the two positive affect items and adding this sum to the sum of the six negative affect items) and the interaction of this with cognitive load (and, in Study 4, the other independent variables). We perfomed these analyses to ensure that any obtained effects of the expectancy and outcome manipulations were not due to positive or negative affect. In Studies 2 and 3, there were no significant effects of the covariate terms; only analyses conducted on unadjusted ratings are reported for those studies. For Study 4, however, at least one of the covariates proved to be significant on the focal, attributional indices; in that study, we report the results on all dependent measures adjusted for the covariates.

Recall

Digits. The average number of digits correctly recalled and positioned by participants was comparable to the number found for Study 1 (M = 89%). In accord with past research (Gilbert & Hixon, 1991) and with Study 1, we excluded the 2 participants who recalled fewer than half of the digits. For the remaining participants, there was no effect of the temporary expectancy manipulation on digit recall, $F(1, 46) = 1.08$, $p = .30$.

Video. As in Study 1, a 2 (temporary expectancy standard) × 2 (cognitive load) ANOVA revealed no significant effects on video recall. The average recall was 3.32 out of 4 items.

Dispositional Inferences

Because the two dispositional items were highly correlated ($r = .53$, $p < .01$), we averaged them to create a dispositional index. A two-way ANOVA conducted on this index revealed only the predicted Cognitive Load × Temporary Expectancy interaction, $F(1, 97) = 7.34$, $p < .01$. Examination and planned t-test comparisons revealed the same pattern of means as that found for Study 1 (see Table 2); dispositional inferences made under cognitive load were contrasted from, whereas those made under no load were assimilated to, temporary expectancies.

Mediational Analyses

Categorization. Because the two behavior categorization items were highly correlated ($r = .75$, $p < .01$), we averaged them to create a categorization index. An initial two-way ANOVA conducted on the behavior categorization index revealed a signif-

[8] Because of the well-known reactivity of expectancy measures, assessments of participants' prevideo expectancies for the child's performance were not obtained in Study 2. However, a pilot study that used the experimental procedures up to the point at which participants were to be shown the video was conducted. The analysis of the expectancy measure revealed the predicted main effect of expectancy standard, $t(86) = 1.74$, $p < .04$ (Ms = 5.44 and 5.87 for negative and positive expectancy conditions, respectively).

Table 2
Study 2: Mean Target and Task Ratings as a Function of Cognitive Load and Temporary Expectancy

Dependent measures	Cognitive load: Load	Cognitive load: No load
Behavior categorization		
Unsuccessful expectancy	7.81_{ac}	7.44_{ab}
Successful expectancy	7.25_{b}	8.04_{c}
Dispositional inferences		
Unsuccessful expectancy	7.35_{a}	6.92_{b}
Successful expectancy	6.77_{b}	7.37_{a}

Note. Ratings were made on a 9-point scale (lower numbers indicate less successful performance, lower level of ability, and lower level of task difficulty). Higher numbers indicate greater mean ratings on all indices. On the dispositional inference index, the difference between means for the unsuccessful expectancy conditions is $p < .06$. For all other comparisons on each of the measures, means with different subscripts differ at $p < .05$.

icant interaction effect, $F(1, 97) = 7.78, p < .01$ (see Table 2). As in Study 1, we conducted a series of regressions to examine the possible mediation by behavior categorization of the Temporary Expectancy × Load interaction on dispositional inferences. The results of the regression analyses are presented in Figure 2. As one can see, they provided support for our mediational arguments. Additionally, the results of the Sobel test (Baron & Kenny, 1986) indicated that the reduction in the path from the Temporary Expectancy × Load interaction to dispositional inferences was significant when categorizations were included in the regression equation ($z = -2.55, p = .01$).

Situational inferences. Because the two situation questions were highly correlated ($r = -.73, p < .01$), the task ease item was reverse scored and averaged with the task difficulty item to create an index of task difficulty. An initial two-way ANOVA conducted on the index revealed no significant main or interaction effects ($ps > .73$).

Although they were not affected by the independent variables, it still was possible that situational inferences were used in inferential correction. If this were the case, then task difficulty ratings should significantly predict dispositional inferences in the final equation used in testing the mediation of behavior categorizations on dispositional inferences. To analyze this, we regressed dispositional inferences on temporary expectancy, load, the Temporary Expectancy × Load interaction, centered categorizations, and centered task difficulty inferences. As in the mediational analysis for the categorization index, the Temporary Expectancy × Load interaction was not a significant predictor when categorizations were included in the equation ($\beta = -.12, p > .16$); however, categorizations were ($\beta = .56, p < .01$). Moreover, taking these other variables into account, task difficulty still tended to predict dispositional inferences ($\beta = .15, p < .07$).

Ancillary Measures

As in Study 1, we examined participants' general evaluative ratings of the child to rule out a potential alternative interpretation of our attribution results. Separate two-way ANOVAs conducted on ratings of the child's likability, sociability, nervousness, attention to the task, and activity level revealed no significant main or interaction effects on any of these evaluative ratings of the child. These results, then, additionally support the notion that our behavior categorization and dispositional inference results reflected comparison-based processes.

Discussion

The results of Study 2 provide additional evidence that distinct outcome expectancies can serve as comparison standards for target judgments. As we expected, participants' dispositional inferences were automatically contrasted from and effortfully assimilated (i.e., overcorrected) to manipulated temporary expectancy standards in the load and no-load conditions, respectively. Moreover, analyses showed that for all participants, the effects of temporary expectancies and cognitive load on their dispositional judgments were mediated by their categorizations of the target's performance. Specifically, when under cognitive load, participants who thought about an unsuccessful performance prior to viewing the performance rated it as more successful and the child as more intelligent compared with participants who initially thought about a successful performance. However, when participants were not under cognitive load, those who initially thought about an unsuccessful outcome, compared with those who thought about a successful one, rated the target as less successful and the child as less intelligent.

In addition to this likely awareness-based correction of dispositional inferences for explicit expectancies under no-load conditions, further analyses also were suggestive of relatively effortless attributional adjustment of dispositional inferences for situational factors. As in Study 1, higher task difficulty ratings were associated with higher intelligence ratings, and this relationship held regardless of participants' levels of cognitive load. Moreover, analyses revealed that situational inferences accounted for a significant amount of variance in dispositional inferences, even when the effects of the Temporary Expectancy × Load interaction and behavior categorizations were controlled. Unlike Study 1, however, the interaction of temporary expectancies and load did not predict participants' inferences of task difficulty. It seems likely that our instructions to think about a performance on an intelligence test served to evoke a representation of a difficult test and, thus, probably limited the variability in participants' task difficulty inferences that was accounted for by our manipulated variables. Still, there apparently was enough variation in participants' intu-

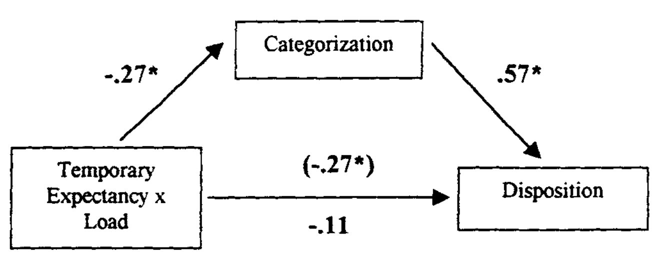

Figure 2. Categorization as a mediator of dispositional inferences in Study 2. The number in parentheses indicates the direct effect of the predictor on the criterion prior to inclusion of the mediator in the regression equation. * $p < .05$.

itive notions about the difficulty of intelligence tests to find evidence of attributional adjustment of dispositional inferences.

Study 3

The results for Studies 1 and 2 were consistent with the notion that the distinctness of the perceivers' expectancies resulted in their use as comparison standards in the relatively automatic evaluations of the target's performance outcome and that such performance categorizations determined, in part, perceivers' initial dispositional inferences. A study that included a direct manipulation of the distinctness of perceivers' expectancies, however, would provide a stronger test of this notion. This was the major purpose of Study 3.

The same general procedure as was used in Studies 1 and 2 also was used in Study 3. In Study 3, however, only the effects of negative outcome expectancies were examined. To vary the distinctness of participants' expectancies, we gave half of the participants in this study the negative expectancy standard instructions used in Study 2. Specifically, prior to their observation of the videotape, we told them to think about what a highly unsuccessful performance on a test of intelligence typically looks like. The other participants were given instructions designed to suggest that the level of the target's general performance had been unsuccessful. This procedure has been used in two other studies (Weary, Reich, & Tobin, in press) to create negative expectancies that are, by definition, not separable from the actual performance information. The theoretical rationale underlying the predictions for the current Studies 1 and 2 suggests that such nondistinct expectancies would be used as interpretation frames and would result in assimilation of perceivers' relatively automatic behavior categorizations and target characterizations to them. That was, in fact, what was found in this earlier research; participants under cognitive load who received the negative performance level information rendered more negative evaluations of the target's performance and intellectual levels, compared with participants who had received positive performance level information. Moreover, inferential correction for the assimilative effects of the nondistinct expectancies was observed in that earlier work. When participants had sufficient cognitive resources, they questioned the diagnosticity or sufficiency of the performance level information for their behavior categorizations and dispositional inferences.

In the current study, we expected that when under cognitive load, participants in the distinct expectancy condition would use their expectancies as standards of comparison and would evidence more favorable (contrastive) behavior categorizations and target characterizations than would participants in the nondistinct expectancy condition. When participants were not under cognitive load, we expected both distinct and nondistinct expectancy condition participants to engage in inferential correction for the effects of their expectancies.

Method

Participants

Participants were 65 male and female university students enrolled in introductory psychology classes. They received partial course credit for their participation. We ran the experiments in groups of 1–4 participants; these groups were randomly assigned to the load conditions. Assignment to expectancy conditions was random (*n*s per condition = 12–17).

Procedure

The general procedure, instructions, cognitive-load manipulation, and materials were identical to Study 2, with the exception of the distinctness-of-expectancy manipulation. Although half of the participants received the same negative expectancy standard instructions used in Study 2, the other half received instructions designed to create nondistinct expectancies. Specifically, after reading the instructions for the experimental task and choosing a videotape, the experimenter announced that there were some additional instructions. Nondistinct expectancy participants received the following paragraph.

> Additional Instructions
>
> The audio portion of the tape you are about to observe has been omitted. All of the test items you will see on this video were *timed*. In order to move on to the next set of test items, the child needed to complete all items in the current set within a certain time frame. Although this child managed to complete the set of test items you will be viewing, he was *not* successful in meeting the time requirements. Consequently, he was not successful enough to continue testing.

Pilot testing for an earlier study (Weary, Reich, & Tobin, in press) demonstrated that this manipulation results in negative expectancies (*M*s = 4.81 and 5.69 on 9-point scales of performance and intellectual expectancies, respectively, compared with 7.35 and 6.85 for a positive expectancy condition, $ps < .001$) comparable to those that result from the manipulation of distinct negative expectancies (see Footnote 8).

Immediately after viewing the tape, participants completed items designed to assess their behavior categorizations and dispositional and task difficulty inferences. These items were identical to the ones used in Studies 1 and 2. On 9-point scales, participants rated how well the child had done on the spatial ability task (behavior categorization measure) and how intelligent the child was in general (dispositional inference item). The order of these items was counterbalanced. Next, participants were asked to rate on the 9-point scale the difficulty of the spatial ability task in the video. Finally, they were asked for their general evaluative ratings of the child's likability and sociability, their memory for details for the tape (to the four multiple-choice memory items used in Studies 1 and 2 we added an item that asked participants to indicate the color of the blocks), and their current affect.

Results

Recall

Digits. The average number of digits correctly recalled and positioned by participants was comparable to those found for Studies 1 and 2 ($M = 83\%$). We excluded the 4 participants who recalled fewer than half of the digits. For the remaining participants, a one-way ANOVA revealed no effect of the distinctness of expectancy manipulation on digit recall.

Video. As in Studies 1 and 2, a 2 (distinctness of expectancy) × 2 (cognitive load) ANOVA revealed no significant effects on video recall. The average recall was 3.97 of 5 items.

Dispositional Inferences

A two-way ANOVA conducted on participants' ratings of the child's general intellectual level revealed a main effect of distinctness of expectancies, $F(1, 57) = 6.52$, $p = .01$. This main effect was qualified, however, by the predicted Distinctness of Expectancy × Cognitive Load interaction, $F(1, 57) = 5.86$, $p < .02$ (see Table 3). Planned t-test comparisons of means revealed that participants who thought about an unsuccessful performance rated the child as significantly more intelligent than did participants who were told that the child had not been successful enough to continue testing. There was no difference between mean ratings under no-load conditions.

Mediational Analyses

Categorization. An initial 2 (distinctness of expectancy) × 2 (load) ANOVA conducted on the behavior categorization measure revealed a significant interaction effect, $F(1, 57) = 3.96$, $p = .05$ (see Table 3). As in Studies 1 and 2, we conducted a series of regressions to examine the possible mediation by behavior categorization of the Distinctness of Expectancy × Load interaction on dispositional inferences. The results of the regression analyses are presented in Figure 3. As one can see, they offer support for our mediational arguments. Additionally, the results of the Sobel test (Baron & Kenny, 1986) reveal that the reduction in the path from the interaction term to dispositional inferences approached significance when categorizations were included in the regression equation ($z = 1.78$, $p = .07$).

Situational inferences. As in Studies 1 and 2, we conducted an initial two-way ANOVA on participants' ratings of task difficulty. This analysis revealed only a significant Distinctness of Expectancy × Load interaction, $F(1, 56) = 4.87$, $p = .03$ (see Table 3 for the means involved in this interaction effect). We then examined whether situational inferences were used in inferential correction. If this were the case, then task difficulty ratings should significantly predict dispositional inferences in the final equation used in testing the mediation of behavior categorizations on dispositional inferences. Accordingly, we regressed dispositional inferences on distinctness of expectancy, load, their interaction, centered categorizations, and centered task difficulty inferences. As in the mediational analysis for categorization, the Distinctness of Expectancy × Load interaction was not a significant predictor when

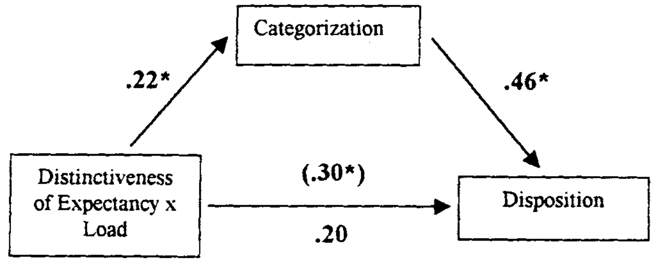

Figure 3. Categorization as a mediator of dispositional inferences in Study 3. The number in parentheses indicates the direct effect of the predictor on the criterion prior to inclusion of the mediator in the regression equation. * $p < .05$.

categorizations were included in the equation ($\beta = .12$, $p > .28$); however, behavior categorizations were ($\beta = .40$, $p < .01$). Moreover, controlling for these other variables, task difficulty inferences still predicted dispositional inferences ($\beta = .30$, $p = .01$).

Ancillary Measures

As in Study 1, we examined participants' general evaluative ratings of the child to rule out a potential alternative interpretation of our attribution results. Separate 2 (distinctness of expectancy) × 2 (cognitive load) ANOVAs conducted on ratings of the child's likability and sociability revealed no significant main or interaction effects.

Discussion

The results of Study 3 provide more direct evidence that distinct outcome expectancies can serve as comparison standards for target judgments. Under cognitive load, the dispositional inferences of distinct expectancy participants, as compared with nondistinct expectancy participants, showed contrast effects; under no load, both distinct and nondistinct expectancy participants showed evidence of effortful correction of their dispositional inferences for the effects of their expectancies and for task difficulty. Finally, analyses showed that the effects of distinctness of expectancies and cognitive load on participants' dispositional judgments were mediated by their categorizations of the target's performance.

It is important to note two limitations of this study. First, there is at least one alternative interpretation for the results that must be considered. The manipulation of the distinctness of expectations was confounded with the presence or absence of performance information about the specific target. Although pilot work demonstrated that perceiver expectancies for the target's performance were comparable and negative in both distinct and nondistinct expectancy conditions, it is conceivable that this information rather than the distinctness of perceiver expectancies might have resulted in the pattern of results obtained on the measures of target and task inferences. Second, because only negative expectancies were used in this study, it is impossible to tell whether the obtained contrast is relative only to the apparent assimilation effects. A final study, therefore, was conducted to address these issues.

Table 3
Study 3: Mean Target and Task Ratings as a Function of Cognitive Load and Distinctness

	Cognitive load	
Dependent measures	Load	No load
Behavior categorization		
Distinct expectancy	7.92_a	7.71_a
Nondistinct expectancy	6.07_b	7.00_d
Dispositional inferences		
Distinct expectancy	7.42_a	6.65_c
Nondistinct expectancy	6.07_b	6.61_c
Task difficulty		
Distinct expectancy	6.33_a	4.82_b
Nondistinct expectancy	5.50_a	6.00_a

Note. Ratings were made on a 9-point scale (lower numbers indicate less successful performance, lower level of ability, and lower level of task difficulty). Higher numbers indicate greater mean ratings on all measures. On the dispositional inference measure, the difference between nondistinct means is $p < .08$. For all other comparisons on each measure, means not sharing a common subscript differ at $p < .05$.

Study 4

We noted earlier in this article that a typical method used by researchers (Martin & Seta, 1983; Stapel & Spears, 1996; Stapel & Winkielman, 1998) for manipulating the distinctness of expectancies involves having perceivers explicitly evaluate contextual information either before (distinct condition) or after (nondistinct condition) evaluating the target information. In Study 4, we used such a procedure. We implemented the same general procedure as we used in Studies 1–3. However, prior to presentation of the videotape, all participants were given a scoring sheet that depicted the target's successful or unsuccessful performance on a similar test 3 years earlier. For half of the participants, this scoring sheet was followed by a request to make explicit ratings of the child's performance and intellectual level on the basis of the scoring report. Such explicit ratings should render the representation of the earlier performance and expectancies based on it distinct and separable from the videotaped performance. The remaining participants were not asked to make ratings of the prior performance until after they had evaluated the target as depicted on the videotape. For these participants, the contextual information should remain abstract and indistinct from the target information. For the former group of participants, then, the prior performance should be used as a comparison standard and result in contrastive target judgments; for the latter group, it should be used as an interpretation frame and result in assimilation.

Method

Participants

Participants were 136 male and female university students enrolled in introductory psychology classes. They received partial course credit for their participation. Participants went through the experimental procedure individually and were assigned randomly to conditions ($ns = 14–18$).

Procedure

The procedure, cognitive-load manipulation, instructions, materials, and measures were identical to those used in Study 2, with the exception of two changes associated with the manipulation of participant expectancies. First, after receiving instructions that they would be asked to chose one of our tapes to watch, the participants were told that all of the children were being tracked over a number of years to see whether their scores change. Second, after they selected a tape to watch, participants were given a scoring sheet for the target's performance on similar test items 3 years earlier. This scoring sheet indicated that the target had missed 2 (successful context condition) or 9 (unsuccessful context condition) of 10 items.[9] Half of the participants (distinct expectancy condition) then were asked to rate on 9-point scales the child's general intellectual level and how well the child had performed on that earlier occasion. The order of these two questions was counterbalanced. The other participants were not asked to make any ratings of the child's earlier performance at that time (nondistinct expectancy condition). Following this manipulation of the distinctness of expectancies, the procedure followed that used in the previous studies. Participants were reminded of their goal and, in the load conditions, to remember the eight-digit number. They then watched the videotaped performance.

Following the tape, all participants completed the attribution-relevant, digit recall, and ancillary measures of target likability and sociability (the order of the dispositional and categorization questions was counterbalanced, and these items were always followed by the situational items). Next, they completed several measures designed to check on their perceptions that the scoring card had influenced their perceptions of the child's performance and the direction of this influence. Finally, they completed the video recall measure from Study 3 and the affect measures.

Results

Previous research (Manis & Paskewitz, 1984) has indicated that conditions typically conducive to direct contrastive effects on target judgments also may result in concurrent weaker, indirect assimilative effects associated with perceivers' evaluations of the contextual information. In Studies 1–3, to rule out potential alternative interpretations of our obtained findings, we chose not to ask participants to indicate their expectancies or to evaluate the context. However, in Study 4, the timing of just such a context evaluation constituted the manipulation of distinctness of expectancies. Consequently, we were able to examine judgmental contrast parsed of any indirect, assimilative effects of context evaluations. This was accomplished by averaging the two highly related ($r = .84$, $p < .001$) evaluations of the target's prior performance and intellectual level and using this context-evaluation index, in interaction with the load, the Load × Distinctiveness of Expectancy, and the Load × Distinctness × Context Valence terms as covariates in all analyses.

Recall

Digits. The average number of digits correctly recalled and positioned was comparable to those found for Studies 1–3 (M = 89%). We excluded the 6 participants who recalled fewer than half of the digits. For the remaining participants, a 2 (context valence) × 2 (distinctness of expectancy) ANCOVA revealed no significant effects for the number of digits correctly recalled.

Video. A 2 (context valence) × 2 (distinctness of expectancy) × 2 (cognitive load) ANCOVA revealed no significant effects on video recall. The average recall was 4.15 of 5 items.

Dispositional Inferences

Because the two dispositional items were highly correlated ($r = .78$, $p < .001$), we averaged them to form a dispositional index. A three-way ANCOVA conducted on this index revealed only the predicted three-way interaction, $F(1, 115) = 4.52$, $p < .04$. Planned t-test comparisons of means revealed that under cognitive-load conditions, distinct expectancy participants exposed to the target's unsuccessful prior performance rated him as more intelligent than did those who were exposed to his successful prior performance. Moreover, in nondistinct expectancy conditions, those exposed to the target's successful prior performance rated him as more intelligent compared with those in the distinct expectancy-success condition. Under no-load conditions, both distinct and nondistinct expectancy participants corrected their inferences. Participants with distinct expectancies made lower ratings of the target's intelligence when exposed to his prior unsuccessful

[9] The results of a pilot study indicate that participants' expectancies with respect to the child's videotaped performance outcome and likely intellectual level were consistent with the valence of the context manipulation, $F(1, 51) = 57.16$ and 35.59, respectively, $ps < .001$, and did not vary by cognitive load.

performance, as compared with his successful performance. The dispositional inferences of nondistinct expectancy participants did not differ as a function of context valence. (See Table 4 for results of all pairwise comparisons.)

Mediational Analyses

Categorization. Because the two behavior categorization items were highly correlated ($r = .78$, $p < .001$), we averaged them to create a categorization index. An initial three-way analysis of covariance (ANCOVA) conducted on this index revealed a marginally significant main effect indicative of assimilation to context valence, $F(1, 115) = 3.71$, $p = .06$. It also yielded a Context Valence × Load interaction, $F(1, 115) = 5.61$, $p = .02$, which was qualified by the predicted three-way Context Valence × Distinctness of Expectancy × Load interaction, $F(1, 115) = 5.79$, $p < .02$ (see Table 4). We again conducted a series of regressions to examine the possible mediation by behavior categorizations of the Context Valence × Distinctness of Expectancy × Load interaction on dispositional inferences. The results of the regression analyses are presented in Figure 4. As one can see, they offer support for our mediational arguments. Additionally, the results of the Sobel test (Baron & Kenny, 1986) revealed that the reduction in the path from the interaction to dispositional inferences was significant when categorizations were included in the regression equation ($z = -2.35$, $p < .02$).

Situational inferences. Because the two situation questions were moderately correlated ($r = -.47$, $p < .001$), the task ease item was reverse scored and averaged with the task difficulty item to create an index of task difficulty. As in the previous studies, we conducted an initial three-way ANOVA on this index. It revealed a main effect of distinctness of expectancy, $F(1, 115) = 4.49$, $p < .04$, that was qualified by a significant Distinctness × Load interaction, $F(1, 115) = 4.53$, $p < .04$, such that the task was perceived as least difficult by nondistinct expectancy participants ($M = 4.45$), particularly those under cognitive load ($M = 5.91$; *M*s for no-load distinct and nondistinct expectancy conditions were 5.42 and 5.80, respectively).

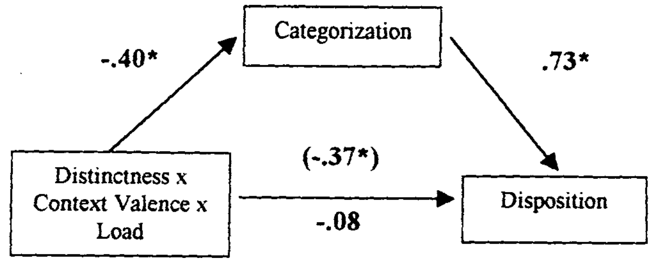

Figure 4. Categorization as a mediator of dispositional inferences in Study 4. The number in parentheses indicates the direct effect of the predictor on the criterion prior to inclusion of the mediator in the regression equation. * $p < .05$.

Table 4
Study 4: Adjusted Mean Target and Task Ratings as a Function of Cognitive Load and Distinctness

	Cognitive load		No cognitive load	
Dependent measure	Failure	Success	Failure	Success
Behavior categorization				
Distinct expectancy	7.79_a	6.06_b	5.84_b	8.00_a
Nondistinct expectancy	7.35_{cd}	7.97_a	6.83_d	7.42_c
Dispositional inferences				
Distinct expectancy	7.28_a	6.10_b	6.08_b	7.65_a
Nondistinct expectancy	6.86_{ac}	7.27_a	6.68_c	6.79_c

Note. Ratings were made on a 9-point scale (lower numbers indicate less successful performance, lower level of ability, and lower level of task difficulty). Higher numbers indicate greater mean ratings on all measures. On the categorization index, the nondistinct-success means differed at $p < .06$; within load conditions and the means for the distinct–nondistinct failure expectancy conditions differed at $p < .07$; within no-load conditions, the distinct–nondistinct success and the nondistinct success–failure comparisons differed at $p < .08$. On the dispositional index measure, the no-load-failure means differed at $p < .06$. For all other comparisons on each measure, means not sharing a common subscript differ at $p < .05$.

We then examined whether situational inferences were used in inferential correction. If this were the case, then task difficulty ratings should significantly predict dispositional inferences in the final equation used in testing the mediation of behavior categorizations on dispositional inferences. To analyze this, we regressed dispositional inferences on context valence, distinctness of expectancy, load, the two- and three-way interactions of these manipulated variables, centered categorizations, and centered task difficulty inferences. As in the mediational analysis for categorization, the three-way interaction was not a significant predictor when categorizations were included in the equation ($\beta = -.06$, $p > .62$); however, behavior categorizations were a significant predictor ($\beta = .72$, $p < .001$). Moreover, controlling for these other variables, there was a tendency for task difficulty to predict dispositional inferences ($\beta = .12$, $p = .07$).

Ancillary Measures

As in Study 1, we examined participants' general evaluative ratings of the child to rule out a potential alternative interpretation of our attribution results. Separate three-way ANCOVAs revealed no significant main or interaction effects on ratings of the child's likability and sociability.

Awareness of Bias

To ascertain whether participants were aware of the effects of any biases introduced by and inferential corrections in response to the contextual information, we asked them two additional questions. First, we asked whether the scoring sheet they had read before observation of the videotaped performance had made their initial impressions of the child more positive or more negative than they otherwise would have been (-4 = *more negative*; 4 = *more positive*). Next, we asked them whether, while watching the videotape, their impressions of the child's intelligence had become more positive or more negative (-4 = *more negative*; 4 = *more positive*). After adding a value of 5 to participants' ratings on these measures to avoid the use of zeroes, we correlated the ratings with each other. A positive correlation indicated that participants believed their final, target impressions were consistent with their perceptions of the influence of the initial contextual bias, whereas a negative correlation reflected a divergence of initial and final impressions. Such a divergence would be expected if participants had attempted to correct their final impressions for the perceived contextual bias. As expected, the relationship between initial and final impressions was significant and positive in the load conditions ($r = .31, p < .02$); in the no-load conditions, it was significant and negative ($r = -.34, p < .01$).

Finally, we correlated participants' perceptions of the change in their impressions of the target's ability with their categorizations of the child's performance and their dispositional inferences. As expected, these correlations were positive in both load (for categorizations and dispositional inferences, $r = .25, p < .05$, and $r = .23, p < .07$, respectively) and no-load conditions (for categorizations and dispositional inferences, $r = .25, p < .05$, and $r = .34, p < .005$, respectively). Together, then, these results suggest that participants were aware of the impact of the contextual bias on their judgments of the target's performance level and the direction of their inferential corrections.

Discussion

The results of Study 4 were consistent with those of Studies 1–3, even though the distinct contextual information concerned the target's own prior performance on a test of cognitive ability. As expected, when participants' cognitive resources were depleted, their behavior categorizations were automatically contrasted from the target's distinct but not nondistinct prior performance. Under no-load conditions, participants' behavior categorizations were corrected for the effects of distinct contextual information. Study 4 additionally provided evidence that participants' behavior categorizations mediated the effects of the independent variables on dispositional inferences and, furthermore, that correction of dispositional inferences for task difficulty occurred under load and no-load conditions. Finally, consistent with our arguments on the awareness-based nature of the corrections for contextual expectancies, Study 4 provided evidence suggesting that participants were aware of the contextually produced biases and of their inferential corrections.

General Discussion

In four studies, we examined whether making outcome expectancies distinct would result in their use as comparison standards or anchors and, consequently, in contrastive categorizations of a target's behaviors. The expectancies examined were based either on usually implicit, chronic future-event expectancies (Study 1) or on temporary, manipulated expectancy standards (Studies 2–4). In each study, by directing participants' conscious attention toward consideration of their generalized or temporary expectancies prior to observation of the target's videotaped performance, we were able to make the expectancies clearly separable from the target information. Such distinctness of expectancies, like distinctness of other types of contextual information (Stapel & Spears, 1996; Stapel & Winkielman, 1998), was expected to result in contrast of relevant social judgments.

Overall, the results of the current research provide evidence of such contrastive categorizations. It is important to note that they also shed light on the suggestion made by investigators in related areas of research that comparison contrast may occur relatively efficiently. In all four studies, some participants were asked to perform a concurrent, secondary task. Under such conditions, these participants were arguably less able to engage in effortful processing, and they made categorizations of the target's performance that were contrasted from the implications of their distinct expectancies. More specifically, under conditions of cognitive load, participants with negative (and distinct) expectancies, as compared with those with positive (or nondistinct) expectancies, evaluated the target's performance as more successful.

Furthermore, all four studies found evidence consistent with controlled, subtraction-based correction of categorizations for the likely (contrastive) biasing influence of expectancies when participants' cognitive resources were not depleted by concurrent task demands. More specifically, when cognitive resources were available, participants' effortful correction of their judgments resulted in assimilation to the evaluative implications of their distinct expectancies. Study 4 provided direct evidence of participants' awareness of the contextual bias and, by implication, of the awareness-based nature of the correction process.

The Dispositional Inference Process

Recent models (Gilbert, 1989; Trope, 1986) of the dispositional inference process have proposed that perceivers' initial, relatively automatic characterizations of another's dispositions ought to correspond with and, in fact, be mediated by their categorizations of the other's behavior. Because these models argue that recategorization of behavior generally does not occur, such correspondence is not necessarily expected when perceivers have the cognitive resources thought to be necessary for inferential correction. That is, if perceivers are able and motivated to take relevant contextual information into account, then the correspondence of their behavior categorizations and final dispositional inferences may well be attenuated or no longer evident. Indeed, past research has found perceivers' behavior categorizations to mediate their relatively automatic dispositional characterizations; however, when perceivers have the cognitive resources required for attributional correction of their characterizations, no such mediational relationship has been observed (e.g., Gilbert & Osborne, 1989; Trope & Alfieri, 1997).

In all four of the current studies, we found evidence consistent with the idea that the effects of contextual information on participants' dispositional inferences were mediated by their behavior categorizations, regardless of the level of cognitive load. At least part of the reason that this mediational relationship was found for both load and no-load condition participants was that participants appeared to engage in recategorization of the observed target behavior when they had the requisite resources.

Why did we find evidence of such recategorization under no-load conditions when several previous studies have not? We think it possible that the procedures used in these earlier studies may well have rendered categorizations rather inflexible to correction processes. That is, participants in those studies were provided with specific, unambiguous situational information that could be used to disambiguate target behaviors. Because the current studies provided participants with no such information, it seems reasonable to argue that the categorizations of participants in our research could remain more flexible. It also is important to note that our findings support other studies showing that perceivers can recategorize their initial impressions of target behavior if the original target information can be recalled and if there are sufficient cognitive and motivational resources (Thompson et al., 1994). At any rate, we, like other authors (Reeder, 1997), believe that future researchers will need to consider more fully than has heretofore been the case the conditions under which observed behaviors (and, as in Studies 1, 3, and 4, even situational categorizations) may be recategorized at the correction stage and the likely complex implications of such recategorizations for the dispositional inference process.

Process of Contrast

We have argued that because contrast to expectancies occurred only on the focal, attributionally relevant dimensions in all four studies (i.e., categorization of performance, intelligence of child), the contrast was due to the construction of a comparison standard and not to a subtraction of generally valenced material from the representation of the child (Schwarz & Bless, 1992). That is, we would have expected to find contrast on participants' ratings of general, evaluative characteristics of the target categorizations if the latter process had been responsible for the contrast effects we observed.

We also have argued that this comparison-based contrast occurred automatically (i.e., was efficient). The major reason for this interpetation of our findings is that the judgmental contrast effect occurred only under conditions where participants' cognitive resources were likely to have been depleted and, therefore, where effortful processing was less likely. Is it possible instead, though, that participants could have engaged in some kind of correction procedure prior to observation of the tape? That is, at the time participants were focusing on their expectancies for the upcoming performance, could those participants who had received instructions about the upcoming digit-memory task have been trying to disregard or correct in advance for the possible influence of their expectancies (cf. Stapel, Martin, & Schwarz, 1998; Wegener & Petty, 1995; Wilson & Brekke, 1994)? If this had been the case, then load participants might have tried to correct for the likely assimilative influence of their contextually based expectancies prior to watching the videotaped performance by resetting them.

We believe that this possibility is not particularly likely. Cognitive-load instructions are standard practice in this type of research (Gilbert & Osborne, 1989; Gilbert et al., 1988; Trope & Alfieri, 1997), and there currently are no data to indicate that participants are aware that having to remember a sequence of digits impairs their ability to make accurate inferences. Indeed, a number of past studies using similar load instructions have found assimilation to, not contrast from, various activated constructs on participants' social judgments when they have been made under conditions of cognitive load.

Implications and Conclusions

The current research adds to an evolving view of both the person perception process and the research on judgmental assimilation and contrast effects. Our findings suggest that some parts of the dispositional inference process are more flexible than perhaps they originally were thought to be. In both studies, we found evidence of behavior recategorization under no cognitive load and proceduralized consideration of situational factors under cognitive load conditions. We also obtained some evidence suggestive of recategorization of situational cues. Future research should explore the limits of recategorization and proceduralized correction processes. Is recategorization something that can only occur when the initial disambiguation and categorization of target information is difficult? Is consideration of situational inferences under cognitive load something that occurs only on tasks with which participants are intimately familiar? Answers to such questions likely will reveal an even more complex but more complete picture of the dispositional inference process.

In addition, this research provides evidence that certain types of contrast can occur with little expenditure of cognitive resources, an idea that slowly has been gathering theoretical momentum. Although the findings of the current research are consistent with the notion that this relatively automatic judgmental contrast effect resulted from comparison-based processes, future research should attempt to delineate further the process by which distinct expectancies have their effects. Specifically, future research should investigate whether the effects occur during the encoding of the performance (an on-line contrast effect) or at the judgment stage as a result of retrieval of contextual and target information. Moreover, it would be interesting to explore whether correction for contrastive influences is a process that can occur after a delay; such delayed correction has been shown to be possible in the case of attributional correction for assimilative influences (Gilbert & Osborne, 1989). Finally, the possibility that some outcomes or types of target judgments might be more or less amenable to contrast effects of the sort we have uncovered here warrants further conceptual and empirical work.

In conclusion, the findings of the current studies have implications for the judgments we make in everyday life. We often are under less than ideal conditions of cognitive resource deployment and, hence, are susceptible to many influences from our environment (including our cognitive environment). It is useful to know that under certain conditions, even the positive expectancies that we might have about an upcoming event can result in more negative evaluations of others than if we had held more negative expectancies. People, apparently, are quite aware of such biases and show the ability to correct for them when they are motivated and have the cognitive resources necessary to do so. However, as is often the case, attempts at correction may sometimes result in a bias in the other direction (i.e., overcorrection).

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Received December 23, 1998
Revision received April 19, 2000
Accepted June 15, 2000 ■