

# Similarities and Differences between the Impact of Traits and Expectancies: What Matters Is Whether the Target Stimulus Is Ambiguous or Mixed

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Expectancies may lead to assimilation as well as contrast effects in subsequent person judgments, depending on whether the target description is ambiguous (i.e., one behavior simultaneously implies a positive and a negative trait) or mixed (i.e., some behaviors imply positive, others negative traits). When the target is ambiguous, an expectancy (e.g., "Michael is kind") results in assimilative interpretations, but when the target is mixed, an expectancy fosters attention to the unexpected behaviors and results in contrast effects. In contrast, the interpretation and selection processes instigated by trait activation (e.g., "kind") result in assimilation effects for ambiguous as well as mixed targets. Implications for models of knowledge accessibility and expectancy effects in person perception are discussed. © 1998 Academic Press

One of the truisms of modern social psychology holds that a primary determinant of how people understand and interpret new information, and form subse-

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quent judgments, is the accessibility of past knowledge (see Higgins, 1989; Sedikides & Skowronski, 1991; Wyer & Srull, 1989, for reviews). In the domain of person perception, the knowledge structures that received most attention are trait concepts and expectancies. Whereas trait concepts (e.g., "kind") are not specific to any target, expectancies involve an explicit target-trait link (e.g., "Michael is kind"). Empirically, an increased accessibility of trait concepts results in assimilation effects on subsequent judgments, as described below. However, an increased accessibility of expectancies may result in assimilation as well as contrast effects. In the present article, we address some crucial differences in the underlying processes and specify the conditions under which an expectancy results in assimilation or contrast effects.

### ACTIVATION OF TRAIT CONCEPTS

Numerous studies have shown that the activation of a trait concept elicits assimilation effects on subsequent trait related judgments. In these studies, the target person is either described as engaging in one ambiguous behavior (i.e., a behavior that may exemplify different traits) or as engaging in several different behaviors, each one of which exemplifies a different trait. We address both cases in turn.

#### *Ambiguous and Mixed Stimulus Information*

A behavioral description is defined as *ambiguous* when the behavior is associated to roughly the same degree with two or more trait constructs that imply discrepant evaluations (see Carlston, 1980; Higgins, 1989; Higgins & Brendl, 1995). For example, the behavior description "Michael helps a friend complete a take-home examination" is ambiguous because it implies both the positive trait "kind" and the negative trait "dishonest." Since Higgins, Rholes, and Jones' (1977) classic study, a plethora of knowledge accessibility experiments demonstrated that ambiguous behavioral descriptions are interpreted in terms of the applicable trait concept that is most accessible at the time of encoding (e.g., Higgins et al., 1977; Sedikides, 1990; Srull & Wyer, 1979; see Higgins, 1989; Wyer & Srull, 1989, for reviews).

A related line of research demonstrated that accessible trait concepts can also result in assimilation effects in judgments based on mixed behavioral information (e.g., Erber, 1991; Erdley & D'Agostino, 1988; Forgas & Bower, 1987; Sherman, Mackie, & Driscoll, 1990; Skowronski, Carlston, & Isham, 1993). A behavioral description is considered *mixed* when the target person is described as engaging in several behaviors that exemplify evaluatively incongruent traits. For example, the descriptions "When Michael learned that John had failed his exam, he sought John out to console him" and "Michael copied an article from the *Journal of Experimental Social Psychology* and submitted it as his final research project in his psychology class" together make Michael a "mixed" target because they imply kindness (positive) and dishonesty (negative), respectively.

The crucial difference between ambiguous and mixed target descriptions is the

source of evaluative uncertainty: In the case of ambiguous descriptions, the target lacks evaluative clarity because the meaning of the behavior itself is ambiguous (“Does this behavior imply kindness or dishonesty?”). In the case of mixed target descriptions, the uncertainty derives from the contradictory implications of several behaviors (“Behavior A implies kindness. Behavior B implies dishonesty. What should I conclude?”). Accordingly, trait priming effects are typically traced to differential interpretations of the target behavior in the case of ambiguous descriptions, but to attention and selection processes in the case of mixed descriptions. Indeed, research by Sherman et al. (1990) suggests that when a target is mixed, the ready accessibility of positive (negative) trait concepts will cause positive (negative) target information to differentially draw attention: the prime-congruent features “jump out” of the stimulus array and consequently are perceived and processed preferentially, resulting in assimilation effects (e.g., Erber, 1991; Sherman et al., 1990; Skowronski et al., 1993).

In sum then, trait concept priming may not only play an *interpretative* role in the disambiguation of a single piece of *ambiguous* target information, but may also elicit the *selective* use of some, rather than other, features of *mixed* target information. For both types of targets, trait concept priming is, *ceteris paribus*, likely to result in assimilative target judgments.

#### *Awareness of the Influence*

Importantly, the typically observed assimilation effect is not obtained in trait priming studies when subjects are aware that the priming manipulation may influence their judgment. When the priming manipulation is blatant rather than subtle (e.g., Martin, Seta, & Crelia, 1990), when subjects can consciously recall the primed concepts (e.g., Lombardi, Higgins, & Bargh, 1987), when they are reminded of the priming episode prior to making a judgment (Strack, Schwarz, Bless, Kübler, & Wänke, 1993), or when they are motivated to form an accurate impression (Thompson, Roman, Moskowitz, Chaiken, & Bargh, 1994), they do not use the activated trait concept but attempt to correct for its likely influence. In this case, contrast rather than assimilation effects are obtained on subsequent judgments and several related models have been presented to account for these correction effects (see Higgins, 1989; Martin et al., 1990; Wegener & Petty, 1995; Strack, 1992).<sup>1</sup>

<sup>1</sup> It is important to note that we do not argue that correction processes will *always* lead to *contrast* effects. Although most researchers have found that awareness of priming stimuli and subsequent correction attempts leads to contrast away from the priming stimuli (e.g., Lombardi et al., 1987; Martin et al., 1990; Strack et al., 1993), Wegener and Petty (1995) have recently demonstrated that where contrast is the more natural default condition, effortful or conscious correction processes can move judgments more towards the valence of the priming stimuli. These differences between results reported by Wegener and Petty (1995) and other research on priming and correction processes can easily be reconciled with reference to the differences between trait and exemplar priming effects (see Stapel, Koomen, & Van der Pligt, 1996, 1997). In studies in which *trait concepts* (e.g., “adventurous,” or “friendly”) were primed, judgments were *contrasted* with the activated concepts when participants tried to correct for the contaminating influence of these primes (e.g., Strack et al., 1993). Wegener and

## ACTIVATION OF EXPECTANCIES

Whereas *trait activation* refers to the elicitation of an abstract trait concept that is not linked to any specific target, *expectancy activation* refers to the elicitation of a specific trait–target link. The activation of expectancies has been found to elicit assimilation as well as contrast effects on subsequent judgments and different underlying mechanisms have been proposed.

Since Bruner's (1957) seminal paper on perceptual readiness, most researchers have approached the impact of expectancies on subsequent judgments as a subtype of knowledge accessibility effects. When a target is given a particular label ("Michael is kind"), this is thought to activate the construct designated by the label ("kind"). This activation, in turn, will result in construct-congruent judgments for the reasons discussed above. Consistent with this approach, most theoretical models of expectancy (or "label" or "stereotype") effects tacitly assume that *when* expectancies affect judgments, the direction of their influence is likely to be assimilative. For example, in Fiske and Neuberg's (1990) continuum model of person perception, it is assumed that when expectancies are used, target judgments converge with people's expectations. Thus, similar to the ways in which perceivers' target impressions may be colored by their attitudes (see Fazio, 1986), moods (see Schwarz, 1990), and emotions (see Niedenthal, 1990), an expectancy may tinge social judgment when it cognitively activates relevant information (see also Brewer, 1988; Ford, Stangor, & Duan, 1994; Herr, 1986; Higgins et al., 1977; Krueger & Rothbart, 1988; Manis, Biernat, & Nelson, 1991; for reviews, see Hamilton & Sherman, 1994; Kunda & Thagard, 1996; Trope & Liberman, 1993).

Some studies, however, show that target judgments may also diverge from accessible expectancies. For example, Manis and his colleagues (e.g., Manis & Paskewitz, 1984; Manis et al., 1991; see also Hilton & von Hippel, 1990) repeatedly observed that expectancy inductions can result in subsequent contrast effects. In one such study, subjects evaluated the degree of psychopathology reflected in word definitions allegedly provided by a psychiatric patient. Subjects who were initially exposed to word definitions exemplifying a high degree of psychopathology (thus activating a trait–target link "mentally ill–patient") subsequently evaluated a moderately confused word definition as reflecting a lower degree of psychopathology than subjects who were initially exposed to word definitions reflecting a low degree of psychopathology (Manis & Paskewitz, 1984). Similar contrast effects have been found in other social cognition and judgment studies that examined the impact of expectancies on memory and judgment (see Hamilton & Sherman, 1994; Skowronski et al., 1993; Stangor & McMillan, 1992; Trope & Liberman, 1993).

How can we explain that, *ceteris paribus*, the activation of trait concepts

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Petty exposed their participants to a number *exemplars* (i.e., popular or unpopular vacation spots) and found that conscious attempts to correct for biasing influences of the primed exemplars lead to *assimilation* in subsequent judgments (see further Stapel et al., 1997; Wegener & Petty, 1995).

consistently results in assimilation effects, whereas the activation of expectancies may elicit assimilation as well as contrast effects? What determines the direction of expectancy effects?

### *Awareness of the Influence*

Some researchers suggested that when expectancy activation results in contrast, this reflects that subjects may have been aware of the possible influence of their expectancies and may hence try to correct for them (e.g., Bargh, 1994; Lombardi et al., 1987). Indeed, one may conjecture that people are more likely to be aware that their expectancies about a specific target may influence their judgments of this target than that they are aware that their exposure to abstract trait concepts may influence their judgment. Hence, correction attempts may be more likely in the former than in the latter case. In fact, Skowronski et al. (1993) obtained assimilation effects on judgments of a mixed target (John K, who behaved in both intelligent and unintelligent ways) when they primed subjects with adjectives like retarded, stupid, witless, slow, and dull. However, they obtained contrast effects when they presented subjects with an explicit expectancy ("John K. is a mentally retarded person") just before and during the presentation of the target description.

Unfortunately, this correction explanation of contrast effects in expectancy activation studies does not provide a coherent account for the conditions under which contrast (see Manis & Paskewitz, 1984; Skowronski et al., 1993) and assimilation (see Fiske & Neuberg, 1990) has been observed in the extant expectancy literature. When expectancy activation is thought to instigate correction processes because it activates awareness of the contaminating, assimilative influence of the activated trait concepts, it should lead to correction away from assimilation (towards contrast) in *all* rather than in some conditions. Below, we offer an alternative conceptualization by tracing the emergence of assimilation and contrast effects to the differential processes assumed to underlie the evaluation of ambiguous and mixed targets.

### *The Moderating Role of Target Descriptions*

Specifically, we propose that expectancy activation will result in assimilation effects when the target description is *ambiguous*. As discussed above, ambiguous descriptions require interpretation and people arrive at an interpretation by relying on the most accessible applicable trait concept. This interpretation process results in assimilation effects, independent of whether the trait concept is rendered accessible through trait or through expectancy activation. To illustrate this with an example from the relevant expectancy literature, specific ambiguous acts are interpreted as more aggressive when performed by a Black target than when performed by a White target (e.g., Sagar & Schofield, 1980; see further Devine, 1989; Griffin & Ross, 1991; Kunda & Thagard, 1996).

In contrast to ambiguous target descriptions, *mixed* targets do not require the resolution of descriptive ambiguity but the integration of inconsistent informa-

tion. As noted above, the priming of an abstract trait concept facilitates attention to and the use of trait consistent information. Not so, however, when an expectancy is activated. In this case, behavior that is *inconsistent* with the expectancy is likely to draw more attention, in line with the observation that behaviors that deviate from expectations are likely to be better remembered (e.g., Hastie & Kumar, 1979; see Wyer & Srull, 1989, for a review). As Hamilton & Sherman (1994, p. 35) noted, inconsistent information “violates an expectancy, it is surprising, draws people’s attention, and initiates attempts to explain the inconsistency.” This may favor the preferential attention to and weighing of inconsistent behaviors when constructing target judgments (Hastie, 1984; Srull, Lichtenstein, & Rothbart, 1985; Skowronski et al., 1993). Accordingly, similar to trait concept activation, expectancy activation will cause certain features of a mixed target to receive more attention. In contrast to trait concept priming, however, the activation of expectancies will cause *prime-inconsistent* features to “jump out” of the stimulus array and be perceived and processed preferentially. As a result, the judgment may be more likely to be based on information that “contradicts” (Skowronski et al., 1993) or “violates” (Jussim, Coleman, & Lerch, 1987) the expectancy, resulting in the pattern of a contrast effect (see Hamilton & Sherman, 1994).

Further facilitating the emergence of contrast effects, the expectancy itself, and the associations evoked by it, may serve as a standard of comparison (e.g., Hilton & von Hippel, 1990; Manis & Paskewitz, 1984; Manis et al., 1991). Note, however, that a comparison of the target’s behaviors to a standard evoked by the expectancy is more likely when the evaluative implications of the behaviors are clear rather than ambiguous (e.g., Herr, 1986; Herr, Sherman, & Fazio, 1983; Philippot, Schwarz, Carrera, De Vries, & Van Yperen, 1991; Stapel, Koomen, & Van der Pligt, 1996, 1997). As discussed above, this prerequisite is more likely to be satisfied by mixed than by ambiguous targets. In the case of mixed targets, the individual behaviors themselves are not ambiguous. Hence, the assumed preferential processing of the expectancy incongruent behaviors would result in a relatively clear-cut representation of the target, which would lend itself to a comparison to the standard suggested by the expectancy. In contrast, ambiguous behaviors require interpretation, rendering it likely that the expectancy serves as an interpretative framework rather than a standard of comparison. As a result, we predict that the activation of an expectancy results in assimilation effects on judgments of ambiguous targets, but in contrast effects on judgments of mixed targets.<sup>2</sup>

<sup>2</sup> It is important to note that our distinction between “mixed” and “ambiguous” target descriptions is an extension of a classification of target descriptions recently proposed by Higgins (1989; Higgins & Brendl, 1995), who defined “ambiguous” and “vague,” but not “mixed,” target descriptions. Similar to the present article, Higgins (1989) defined a behavioral description as “ambiguous” when a behavior has features associated to the same degree with two or more constructs that are descriptively similar but imply evaluatively discrepant evaluations. Higgins (1989) defines a target description as “vague” when it possesses enough features associated with a particular trait construct (e.g., “hostile”)

The findings of previous studies are compatible with this prediction. Expectancies have been found to result in assimilation effects when the behavior is ambiguous (e.g., Sagar & Schofield, 1980) or when ambiguous traits need to be interpreted (e.g., Kunda, Sinclair, & Griffin, 1997). Conversely, expectancies have been found to result in contrast effects when clear, diagnostic behaviors (e.g., Linville & Jones, 1980) or moderate, midscale stimuli (e.g., Manis & Paskewitz, 1984) are evaluated.

## OVERVIEW OF STUDY AND HYPOTHESES

The present experiment provides a test of the above hypotheses by investigating the impact of activated traits and activated expectancies on evaluations of ambiguous and mixed targets. Under the disguise of a "Language Comprehension Task," we asked participants to unscramble sentences that contained either positive or negative trait concepts applicable to a subsequent ambiguous or mixed target description. In the *trait activation* condition, all sentences were said to pertain to different actors, for whom initials were included in the sentence (e.g., "R. kind be is"). In the *expectancy activation* condition, all sentences were said to pertain to one actor (e.g., "Michael kind be is"), thus allowing participants to form an expectation about Michael over the various sentences presented to them.<sup>3</sup> Subsequently, all participants received either an ambiguous or a mixed description of Michael and were asked to provide several trait judgments.

Based on the above rationale, we predicted that the *ambiguous* description would be interpreted in line with the primed trait concepts, resulting in assimilation effects under trait activation as well as expectancy activation conditions, i.e., we predicted more positive evaluations under positive rather than negative trait or expectancy activation conditions. In contrast, we predicted that trait activation and expectancy activation would result in differential effects on the evaluation of a *mixed* target. Specifically, trait priming should elicit preferential processing of trait consistent features of the mixed target, resulting in assimilation effects (i.e., more positive judgments under positive rather than negative expectations). The

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that the construct is applicable to it, but not enough features that it requires characterization in terms of the construct (e.g., Banaji, Hardin, & Rothman, 1993; Srull & Wyer, 1979). Because both ambiguous and vague targets require the resolution of descriptive ambiguity (instead of the integration of inconsistent information, as in the case for mixed targets), we expect that the impact of trait and expectancy activation on vague target descriptions will be similar to the effects on ambiguous target descriptions, although the present study does not include "vague" descriptions.

<sup>3</sup> Note that this operationalization of expectancy activation is considerably less "blatant" than the manipulation employed by Skowronski et al. (1993). These authors explicitly labeled the target ("John K. is a mentally retarded person") just before subjects were exposed to the target description and this label was repeated several times as part of the target description. Because of the explicit nature of this manipulation, it is difficult to decide whether the contrast effects Skowronski et al. found should be labeled "correction" or "expectancy" effects. In fact, Skowronski et al. treat contrast due to prime-awareness and correction and contrast due to expectancy-induced selection and comparison as similar "explicit" processes that will lead to similar judgmental outcomes (Skowronski et al., 1993, p. 19). The present study provides an orthogonal manipulation of correction and expectancy.

activation of an expectancy, however, should elicit preferential processing of expectancy inconsistent features of the mixed target. Moreover, the expectancy may be used as a standard of comparison. Hence, expectancy activation should result in contrast effects on evaluations of a mixed target (i.e., more negative evaluations under positive rather than negative expectations).<sup>4</sup>

Note that these predictions differ from the predictions offered by a correction account of contrast effects under expectancy activation conditions (see Bargh, 1994; Skowronski et al., 1993). According to the correction assumption, participants may be more likely to recognize, and correct for, a possible influence of an accessible expectancy rather than an accessible trait concept. If so, expectancy activation should result in contrast effects on judgments of the mixed *as well as* the ambiguous target, in line with the correction findings observed for ambiguous targets under prime awareness conditions (Lombardi et al., 1987; Martin et al., 1990; Strack et al., 1993). Of course, the two target descriptions will necessarily differ in some respects, rendering it desirable to ensure that correction attempts would indeed result in contrast effects for both targets. To address this concern, we included an explicit *forewarning* condition (see also footnote 3). Prior to reading the respective target description, participants assigned to this condition were asked to make sure that their impression of Michael was not influenced by thoughts elicited during the Language Comprehension Task (cf. Wegener & Petty, 1995). We predicted that this instruction would result in contrast effects on participants' judgments in all conditions, independent of whether the target description was ambiguous or mixed and independent of whether a trait concept or an expectancy was activated.

## Method

### *Participants and Design*

Two hundred and fifty (157 female and 93 male) University of Michigan undergraduates (mean age 19 years) participated for partial course credit. Participants were randomly assigned to the conditions of a 2 (Valence of activated information: positive, negative)  $\times$  2 (Type of activated information: trait concept, expectancy)  $\times$  2 (Forewarning: no, yes)  $\times$  2 (Target description: ambiguous, mixed)-factorial between subjects design. The experiment was conducted in groups of 2 to 11 persons.

### *Information Activation Task*

The experiment was part of a general testing session in which participants received several questionnaires. The task was designed to activate either a trait concept or an expectancy and was entitled "Language Comprehension." Specifically, participants unscrambled sentences that were

<sup>4</sup> Note that this prediction is dependent on our "implicit" and "subtle" expectancy manipulation. As several authors have noted (see Hilton & von Hippel, 1996; Manis et al., 1991; Trope & Liberman, 1993), one important variable that determines the impact of an expectancy will be its strength or reliability. Expectancies that are based on lifelong experiences with the target stimulus may not easily be adjusted in the light of one behavioral observation. In contrast, the present study uses a relatively pallid and short expectancy induction (unscrambling sentences), whereas the target is described with more vivid behaviors that are relevant to the respective trait judgments. Whereas these procedures are consistent with the procedures typically used in priming experiments, we acknowledge that the extent to which the conclusions hold for stronger expectancies requires further research.

applicable to the (ambiguous or mixed) target stimulus (see below). This task consisted of a page of 13 scrambled four- or five-word groups. Participants' task was to reorganize the word groups into meaningful sentences (see Banaji et al., 1993; Srull & Wyer, 1979; Thompson et al., 1994).

In the *trait concept* conditions, participants were told, "The word-groups all describe a particular personality trait. Furthermore, each sentence is preceded by an initial. This initial represents the name of the actor who showed the respective behavior." Thus, participants had to unscramble word-groups, such as "B. kind be is" and "R. pleasant character has am a." In the *expectancy* conditions, participants were told, "The word-groups all describe a particular person, namely Michael. Later you will be given more detailed information about Michael and you will be asked to form an impression of the kind of person Michael is." Thus, participants had to unscramble word-groups such as "Michael kind be is" and "Michael pleasant character has am a."

In the *positive valence* conditions, six word groups contained one of the following trait terms: good, warm, honorable, truthful, faithful, kind. In the *negative valence* conditions six word groups contained one of the following trait terms: bad, cold, dishonorable, untruthful, treacherous, unkind. The remaining word groups contained constructs not applicable to the target stimulus (e.g., "her vacation knew she") and were interspersed among the other word groups.

### *Target Descriptions and Forewarning Instructions*

After participants had finished the Language Comprehension Task, they were instructed to put the booklet in a folder on their desks. Next, they were given the impression formation booklets, entitled "Impression Formation." These booklets began by informing participants that they would be participating in an experiment about impression formation. They were instructed to read the target paragraph and to try to form an impression of Michael: "As you read the descriptions of Michael's behavior, we would like you to think about the kind of person Michael is. We would like you to form an impression of Michael and then answer the questions that follow the behavior descriptions."

Participants assigned to the *no-forewarning* conditions then went on to read the target description on the next page. Participants assigned to the *forewarning* conditions first read the following warning: "Please try to make sure that your impression of Michael is not influenced by your performance in the Language Comprehension task you have just completed. We don't want the meaning of the sentences you "unscrambled" to affect your impression of Michael's behavior. Your impression of Michael should reflect your true response" (adapted from Wegener & Petty, 1995, p. 42).

The *target descriptions* consisted of adaptations of behavior descriptions ("episodes") pretested and used by Carlston (1980). Participants read seven episodes in which Michael was described. Each episode was four to five sentences long and contained some detail, such as proper names, locations, and quotations. In all conditions, the seven episodes described the same events. Subtle changes in the text allowed us to construct ambiguous and mixed stimulus targets (see Carlston, 1980). Of the seven episodes participants were exposed to, three presented them with "filler" information that was relatively irrelevant to forming an impression of the target person (e.g., "Michael was born on March 10, 1974, in Princeton, Illinois, to Alice and Henry Kunreuther").

In the *ambiguous target description* conditions, each of the other four episodes implied both a positive trait (kindness) and a negative trait (dishonesty). For example, the following episode may be interpreted as reflecting kindness as well as dishonesty:

"Michael was talking with a group of classmates, including his friend Donal. The conversation turned to girls, and various members of the group told of their more exciting dates. Donal listed for a while and then chimed in with a made-up story about his own "fantastic evening." When Donal was finished one fellow turned to Michael and challenged, "Did this really happen, or is your friend dreaming?" Michael knew the story was phony, but he covered for his friend: "Yes, it's true; I remember that night well . . ." Donal clearly appreciated Michael's lying to save him from embarrassment."

In the *mixed* target description conditions, two of the four episodes implied kindness, whereas the other two implied dishonesty. For example:

*Kind episode.* Several girls Michael knew rented an apartment together and redecorated it. One of the girls, Carla, invited Michael over and showed him around. Michael was very polite, amicable and complementary. Carla beamed with pride.

*Dishonest episode.* Michael was talking with a group of classmates. The conversation turned to girls, and various members of the group told of their more exciting dates. Michael listened for a while and then chimed in with a made-up story about his own "fantastic evening." He described the beautiful girl, and the blissful evening all as though it had really happened.

Carlston (1980) reported that pretests ( $n = 96$ ) had revealed that the ambiguous episodes received extreme ratings on both "kindness" and "dishonesty." In contrast, the episodes that were used in the mixed target received extreme ratings on either kindness or dishonesty and neutral ratings on the respective other trait. A pretest with 15 Michigan undergraduates corroborated these earlier findings.

To test whether the ambiguous and mixed target received similar evaluations in the absence of activated information, we conducted an additional pilot study. Specifically, 12 participants read and rated the ambiguous target description on the relevant dimensions (as described below) and 13 participants did the same for the mixed target description. No significant differences were found on any of the dependent measures ( $F_s < 1$ ), reflecting that the ambiguous and mixed descriptions did not differ in overall valence.

### *Dependent Measures*

*Trait ratings.* On the next page of the booklet, participants were asked to indicate their impressions of Michael on five 9-point rating scales. Two of these ratings pertained to the trait dimensions reflected in the target descriptions (dishonest–friendly;<sup>5</sup> dislikeable–likeable) and three were unrelated to the target behaviors (stubborn–persistent; stupid–intelligent; crude–polite). The order in which the labels of the rating scales were presented was counterbalanced. For half of the participants, the order was dishonest–friendly, stubborn–persistent, crude–polite, dislikeable–likeable, stupid–intelligent. For the other half, the order was reversed. Presentation order did not influence the results and all scales were coded such that 1 indicates a negative and 9 a positive evaluation.

*Recall.* After participants finished the impression formation task, a prime recall task was administered. Participants were given a blank sheet of paper and were asked to remember as many of the words from the scrambled-sentence word groups as they could. Participants were given 3 min to complete this task (see Banaji et al., 1993).

After the general testing session, which included additional tasks, was completed, participants were debriefed and thanked for their participation.

<sup>5</sup> Similar to previous studies investigating knowledge accessibility effects on judgments of ambiguous target descriptions (e.g., Higgins et al., 1977; Martin, Seta, & Crelia, 1990), we used *one* bipolar rating dimension (dishonest–friendly) instead of *two* unipolar rating dimensions (e.g., one scale labeled "dishonest," another labeled "adventurous") to measure respondents' judgments of Michael's dishonest/friendly behavior. As in related studies, this bipolar rating dimension was anchored by trait descriptions that define the positive and the negative interpretation of the ambiguous behavior (i.e., dishonest–friendly; cf. "adventurous–reckless" in Higgins et al., 1977). Because of this, respondents were forced to make a choice: A more "dishonest" target is automatically less "friendly." The use of two unipolar rating dimensions ("dishonest" and "friendly") would have allowed respondents to describe Michael's dishonest/friendly behavior in both positive and negative terms. This would presumably have attenuated the trait priming and expectancy activation effects because Michael's behavior fits both types of evaluations.

TABLE 1  
 MEAN RATINGS (SD) OF TARGET PERSON AS A FUNCTION OF  
 VALENCE OF ACTIVATED INFORMATION  $\times$  TYPE OF ACTIVATED INFORMATION  $\times$  FOREWARNING  $\times$  TARGET TYPE

Forewarning Valence of activated information	No		Yes	
	Positive	Negative	Positive	Negative
	Type of activated information: Trait concept			
Target type				
Ambiguous	6.94 <sub>a</sub> (1.44)	5.69 <sub>b</sub> (1.92)	5.72 <sub>b</sub> (1.75)	6.82 <sub>a</sub> (1.39)
Mixed	7.00 <sub>a</sub> (1.05)	5.73 <sub>b</sub> (1.13)	5.70 <sub>b</sub> (1.77)	6.77 <sub>a</sub> (1.00)
	Type of activated information: Expectancy			
Target type				
Ambiguous	7.06 <sub>a</sub> (1.38)	5.43 <sub>b</sub> (1.69)	5.00 <sub>b</sub> (1.48)	6.59 <sub>a</sub> (1.20)
Mixed	5.38 <sub>b</sub> (1.54)	6.83 <sub>a</sub> (1.53)	5.22 <sub>b</sub> (1.77)	6.63 <sub>a</sub> (1.53)

*Note.* Means are computed over the related rating scales (dishonest–friendly, dislikeable–likeable). Scale range is from 1 to 9. Higher scores indicate more positive ratings. Means that do not share subscripts differ significantly at  $p < .05$ .

## Results

Theoretically, the information elicited by the Language Comprehension Task should only influence ratings along the relevant dimensions (dishonest–friendly; dislikeable–likeable), but not ratings along the irrelevant ones (stubborn–persistent; stupid–intelligent; crude–polite). Empirically, this was the case. Whereas the relevant ratings showed the effects to be discussed below, no significant main or interaction effects were obtained on the irrelevant ratings. This indicates that participants were not merely responding to the evaluative connotations of the activated concepts per se (see Higgins et al., 1977; Martin et al., 1990; Stapel et al., 1996).

The mean score of the two relevant trait judgments serves as the key dependent variable (Cronbach's  $\alpha = .66$ ), with values ranging from 1 (negative) to 9 (positive). Table 1 shows the results as a function of experimental conditions.

Our hypotheses predict a four-way interaction of Valence (positive, negative), Type (trait concept, expectancy), Forewarning (no, yes), and Target Description (ambiguous, mixed). An ANOVA including these factors revealed this interaction,  $F(1, 234) = 4.58, p < .05$ .<sup>6</sup> To diagnose this interaction and to test the specific

<sup>6</sup> The following interaction and main effects were also obtained in these analyses of the results on the related ratings index: valence  $\times$  type  $\times$  target type interaction,  $F(1, 234) = 3.78, p < .05$ ; valence  $\times$  forewarning  $\times$  target type interaction,  $F(1, 234) = 4.71, p < .05$ ; valence  $\times$  forewarning interaction,  $F(1, 234) = 26.78, p < .01$ . These effects need to be interpreted in light of the higher order interactions and result from the individual predictions discussed above. Analyses for the single related ratings scales (dishonest–friendly; dislikeable–likeable) show a pattern that is weaker but similar to the analyses reported here.

hypotheses, we conducted simple effect analyses for the trait concept priming and expectancy activation conditions (see Winer, 1971, pp. 385–386).

### *Trait Concept Activation Conditions*

Under trait activation conditions, we predicted assimilation effects on judgments of the ambiguous as well as mixed target. However, these assimilation effects should not be obtained under forewarning conditions, where participants are asked to avoid any possible influence of the Language Comprehension Task. The results confirmed these predictions. Under no-forewarning conditions, participants rated the ambiguous as well as the mixed target more positively when positive ( $M = 6.97$ ) rather than negative ( $M = 5.71$ ) trait concepts were activated,  $F(1, 116) = 11.73, p < .01$ , for the simple main effect. With forewarning instructions, participants rated both targets less positively when positive ( $M = 5.71$ ) rather than negative ( $M = 6.80$ ) trait concepts were activated,  $F(1, 116) = 8.14, p < .01$ , for the simple main effect. Thus, assimilation effects were obtained without, and contrast effects with, forewarning instructions, resulting in a significant simple interaction of valence and forewarning instructions,  $F(1, 116) = 19.52, p < .01$ . No other simple main or interaction effects reached significance, all  $F_s < 1$ .

### *Expectancy Activation Conditions*

Our predictions under expectancy activation conditions were more complex. First, we address the conditions without forewarning instructions. For these conditions, we predicted an assimilation effect when the target description is ambiguous, but a contrast effect when the target description is mixed. Again, results confirmed these predictions. Specifically, participants evaluated the ambiguous target more positively under positive ( $M = 7.06$ ) rather than negative ( $M = 5.43$ ) expectancy activation conditions,  $F(1, 118) = 9.03, p < .01$ , for the simple main effect. However, they evaluated the mixed target less positively under positive ( $M = 5.38$ ) rather than negative ( $M = 6.83$ ) expectancy activation conditions,  $F(1, 118) = 7.05, p < .01$ , for the simple main effect. This emergence of an assimilation effect for the ambiguous and a contrast effect for the mixed target is reflected in a significant simple interaction of valence and target description,  $F(1, 118) = 7.13, p < .01$ . Note that this pattern is inconsistent with the assumption that contrast effects under expectancy activation reflect an increased awareness of a possible influence of the information activated by the Language Comprehension Task. If so, a contrast effect should have emerged for the ambiguous as well as the mixed target, which was not the case.

Finally, we predicted that participants who were instructed to correct for any influence of the expectancy activation task would show contrast effects on the evaluation of the ambiguous as well as the mixed target. Again, this prediction was confirmed. These participants rated the ambiguous as well as the mixed target less positively under positive ( $M = 5.11$ ) rather than negative ( $M = 6.61$ ) expectancy activation conditions,  $F(1, 116) = 15.52, p < .01$ , for the simple main

effect. Note that this main effect pattern implies that the ambiguous stimulus materials did allow for the emergence of a contrast effect, as did the mixed materials. Hence, the above observation that expectancy activation resulted in assimilation effects on judgments of the ambiguous target in the absence of an explicit forewarning further argues against a correction account of contrast effects under expectancy activation conditions.

Overall, these findings are reflected in a significant simple interaction of valence, target description, and forewarning under expectancy activation conditions,  $F(1, 118) = 9.09, p < .01$ , consistent with our predictions.<sup>7</sup>

### *Recall of Activated Information*

Each participant's recall of the sentences in the Language Comprehension Task was coded by a coder who was blind to experimental conditions. For each of the sentences participants could recall the following 4-point scoring system was used (cf. Banaji et al., 1993): 3 (perfect recall), 2 (conceptually equivalent recall), 1 (incorrect recall of sentence), 0 (no recall). An ANOVA of this measure revealed no significant main or interaction effects,  $ps > .15$  (overall  $M = 18.03$ ). Accordingly, the above differences in judgment are unlikely to be determined by differences in participants' awareness of the information activated by the Language Comprehension Task.

## Discussion

In summary, the present study examined the impact of subtly activated trait concepts ("kind") and expectancies ("Michael, the target stimulus, is kind") on people's judgments of ambiguous and mixed target stimuli. As predicted, the obtained knowledge accessibility effects depended on (a) the *type of knowledge structure* that is rendered accessible (abstract trait concept versus target specific expectancy) and (b) the *type of target* that was to be evaluated (ambiguous versus mixed).

Replicating previous findings, trait concept priming resulted in assimilation effects, irrespective of whether the target stimulus was ambiguous or mixed. This reflects that accessible trait concepts can guide the interpretation of ambiguous targets (see Higgins et al., 1977; Srull & Wyer, 1979) as well as lead to preferential processing of prime-congruent features of mixed targets (see Sherman et al., 1990; Skowronski et al., 1993). In contrast, expectancy activation resulted in assimilation effects on evaluations of an ambiguous target, but in contrast effects on evaluations of a mixed target. The assimilation effect obtained under ambiguous target conditions supports the notion that, similar to trait concepts, expectancies can serve an interpretative function, resulting in expectancy-consistent interpretations of ambiguous behaviors (e.g., Kunda et al., 1997; Sagar

<sup>7</sup> In addition, the valence  $\times$  target type interaction,  $F(1, 118) = 7.13, p < .01$ , the valence  $\times$  forewarning interaction,  $F(1, 118) = 8.52, p < .01$ , and the valence main effect,  $F(1, 118) = 6.80, p < .01$ , reached significance. These effects need to be interpreted in light of the above higher order interactions and result from the individual predictions discussed above.

& Schofield, 1980). In the case of mixed targets, however, the individual behaviors do not need interpretation. Instead, the evaluative unclarity they present derives from the fact that the separate behaviors have different implications, requiring the resolution of inconsistencies. In this case, expectancy-inconsistent behaviors stand out and receive preferential processing (Hamilton & Sherman, 1994). Furthermore, contrastive comparison processes that may follow expectancy activation are more likely to exert their influence than are assimilative interpretation processes (see Linville & Jones, 1980; Manis et al., 1991). As a result, contrast rather than assimilation effects are obtained for mixed targets under expectancy activation conditions.

It is important to note that the present findings speak to previous research on the direct and indirect effects of expectancies (see Trope & Liberman, 1993). Expectancies may have *direct* (assimilative) effects in the encoding of behavior (the stronger the expectancy that a target person possesses a trait, the more likely this trait will be inferred), but also *indirect* effects in the judgment stage of the impression formation process, when new behavioral evidence is integrated with existent expectancies into trait judgments). Similar to the present findings, Trope and his colleagues (Trope, 1986; Trope, Cohen, & Alfieri, 1991; Trope & Liberman, 1993) found that the net effect of direct and indirect expectancy effects depends on the *type* of stimulus that is to be judged. When immediate behavior is ambiguous, the two effects are in the same (assimilative) direction (the expectancy guides interpretation and this interpretation thus fits with the existing expectancy), but when behavior is mixed or unambiguous the two effects may be in opposite directions (e.g., no effect or a contrast effect when encoding the behavior, but an assimilation effect when expectancy and behavior evidence are integrated into trait judgments). In other words, in Trope's model the sign of the observed effects of expectancies on judgment should depend on the direct and indirect effect of expectancies and one determinant of these effects is the type of target (ambiguous, mixed, unambiguous) that is to be judged. In future research, we hope to focus more specifically on the relation between the present perspective and Trope's model (cf. Trope, 1986; Trope et al., 1991; Trope & Liberman, 1993).

### *Expectancy Activation and Correction*

As discussed earlier, Skowronski et al. (1993) suggested that the activation of an expectancy constitutes a more *blatant* and *explicit* manipulation than trait priming. Accordingly, people may be more likely to realize that an expectancy may influence their judgment than that an abstract trait concept may do so. Hence, expectancy activation should increase the likelihood of conscious correction. Although we generally agree with this reasoning, our results are difficult to reconcile with it.

At the outset, it is important to note that we obtained contrast effects on judgments of the ambiguous as well as the mixed target, and under trait activation as well as expectancy activation conditions, when participants were explicitly instructed to avoid possible contamination of their judgments. This establishes

that participants thought the likely influence of the Language Comprehension Task—the task designed to activate either a trait concept or an expectancy—would be assimilation, a prerequisite for correction contrast to occur (see Strack, 1992; Strack & Hannover, 1996; Strack et al., 1993; Wegener & Petty, 1995). Moreover, their attempts to correct for these assimilative influences resulted in overcorrection (i.e., contrast) as has been observed in previous studies. Thus, the materials used in the present experiment did provide a replication of the “typically” (see footnote 1) obtained findings under explicit correction instructions. Yet, the pattern of results obtained *without* explicit correction instructions was more complex.

If expectancy activation resulted in higher awareness of possible contamination and subsequent correction attempts, we should have obtained correction based contrast effects on evaluations of ambiguous *as well as* mixed targets, as we did under the forewarning conditions. This, however, was not the case. Instead, when subjects were not forewarned about the potential contamination of their judgments, expectancy activation resulted in assimilation effects on evaluations of *ambiguous* targets, but in contrast effects on evaluations of *mixed* targets. The discrepancy between this pattern and the explicit correction findings suggests that correction per se is not at the heart of the contrast effect that we observed for the mixed target. Obviously, this does not preclude that a more blatant expectancy manipulation, as used by Skowronski et al. (1993; see footnote 3), may have elicited correction attempts—yet in that case, we should have observed them on both targets. Hence, we conclude that the contrast effect obtained in the present study is mediated by *selection* and *comparison* processes rather than correction processes. As a result, it is limited to mixed targets and is not obtained for ambiguous targets, for the reasons discussed above.

The present research thus adds to recent investigations that have shown that “prime-awareness” is not the only condition that may elicit contrast rather than assimilation effects in knowledge accessibility experiments (see Banaji et al., 1993; Ford & Kruglanski, 1995; Ford et al., 1994; Manis et al., 1991; Phillipot et al., 1991; Schwarz & Bless, 1992; Stapel et al., 1996, 1997; Thompson et al., 1994; Wegener & Petty, 1995), in contrast to what some models of assimilation and contrast seem to assume (e.g., Bargh, 1994; Lombardi et al., 1987; Martin et al., 1990; Newman & Uleman, 1990).

### *Expectancy Activation and the Role of Target Descriptions*

Previous investigations of the impact of “labels,” “stereotypes,” and “expectations” on person perception have found seemingly contradictory effects. As noted earlier, some of these studies obtained assimilation effects, whereas others obtained contrast effects (see Fiske & Neuberg, 1990; Hamilton & Sherman, 1994; Kunda & Thagard, 1996; Manis et al., 1991; Skowronski et al., 1993; Stangor & McMillan, 1992). The present reasoning suggests a parsimonious and testable explanation for these divergent findings. Of course, we acknowledge that the differences between previous expectancy studies are multifaceted and that

some of their outcomes may be overdetermined. We suggest, however, that one important determinant of whether an expectancy results in assimilative or contrastive judgments is the kind of cognitive process the target stimulus instigates. Expectancies can be used as an interpretative frame or as a selective filtering device and comparison standard. Which of these possible roles an activated expectancy will play depends on what kind of process the target information "asks for" (cf. Higgins & Brendl, 1995). Ambiguous descriptions elicit the interpretation of the described behavior in terms of the expectancy, resulting in assimilation effects. Mixed target descriptions, on the other hand, include behaviors that are clearly inconsistent with the expectancy. As numerous person perception studies have shown (see Wyer & Srull, 1989, for a review), these inconsistent behaviors receive preferential processing. Moreover, the resulting representation can be contrasted to the implications of the expectancy and, in combination, these processes result in a contrast effect.

As Higgins and Brendl (1995) recently noted, research into knowledge activation effects has paid considerable attention to the impact of accessible knowledge structures, but relatively little attention to the contribution of the "data" to which the accessible knowledge is applied (see also Higgins, 1989). As the present findings indicate, however, both need to be considered in combination: Accessible trait concepts result in assimilation effects on judgments of ambiguous as well as mixed targets. Accessible target-specific expectancies, however, result in assimilation effects on judgments of ambiguous targets and contrast effects on judgments of mixed targets.

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