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When expectancies harm comprehension: Encoding flexibility in impression formation

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Abstract

We explored the possibility that the encoding flexibility processes postulated by Sherman and colleagues (1998) may also apply to intentional impression formation settings, even when cognitive resources are available to conceptually encode all of the behavioral information regardless of the relation of that information to the initial stereotypical expectancies. Three experiments offer evidence for the lower conceptual fluency for expectancy-incongruent behaviors, compared with congruent behaviors, as well as for the consequences of that difference for impression formation. Experiment 1 shows that incongruent behaviors are perceived as more difficult to understand in meaning. Experiment 2 links this lower conceptual fluency with a better discrimination of the specific trait implications of the behaviors. We further explore the role of conceptual encoding difficulty for developing personality impressions (Experiment 3). These studies reveal the implications of initial expectancies for the differential conceptual encoding of congruent and incongruent behaviors, even when the availability of cognitive resources is high, such as when forming an intentional impression about a person's personality. The link between this process and encoding the trait implications of behaviors may shed new light on impression formation processes and demand a revision of some of the assumptions that were made by the classical person memory model. We contend that behavior encoding in impression formation is likely to begin with default trait encoding but will be inhibited when the implications of the behavior conflict with previous trait expectancies (see also Wigboldus, Dijksterhuis, & van Knippenberg, 2003).

Keywords: encoding flexibility; impression formation; trait inferences; expectancies

Introduction

It is difficult not to wonder how important trait and person-descriptive words are to Westerners. According to the Sapir-Wholf hypothesis (now partially discredited), the Inuit people had more than 20 words for snow because snow was crucial to their lives. For trait words, this number appears to be even larger. Anderson (1966) published likableness ratings for 555 trait words and Dumas, Johnson and Linch (2002) recently published an even more exhaustive list that tested 844 person descriptive words. Personality traits were also important in early attempts to study person cognition and lists of traits were used to induce impression formation (e.g., Anderson, 1966; Asch, 1946), examine associations between personality attributes (Bruner, Shapiro & Tagiuri, 1958), and better understand the underlying semantic structure of impressions (by requiring participants to group large numbers of traits according to whether they described the same person; Rosenberg, Nelson & Vivekananthan, 1968). Soon after, researchers tried to pinpoint the differences between forming an impression of a target's personality and simply memorizing the trait-implying information. Traits were proposed to be encoding organizers (Hamilton, Katz & Leirer, 1980) or the basis for efficient retrieval strategies (Klein & Loftus, 1990) when the perceiver's goal was to form an impression but not when the goal was to memorize the same information.

Thus, traits appear to be trading tools for forming impressions of others, specifically when the social perceiver is presented with trait-implying information from a target, as it is the case in most impression formation studies. However, are traits always uniformly inferred when trait-implying information is available, or do previous expectancies moderate the likelihood of the occurrence of trait inferences? More importantly, what are the consequences of possible trait-encoding difficulties during impression formation? In this paper, we first discuss a model that is relevant to these questions, the encoding flexibility model (Allen, Sherman, Conrey, & Stroessner, 2009; Sherman & Frost, 2000; Sherman, Lee, Bessenoff & Frost, 1998), which explicitly addresses the role of expectancies on the differential encoding processes of expectancy-inconsistent and consistent information. Then, we propose an extension of the encoding flexibility model to include impression formation and test several theoretical predictions in three experiments.

The encoding flexibility model

Expectancy-inconsistent information is sometimes privileged in information search and memory (e.g., Graesser, Gordon & Sawyer, 1979; Hastie & Kumar, 1979; Srull, 1981). Other times, expectancy-consistent information appears to have the cognitive upper hand (e.g., Bodenhausen, 1988; Cohen, 1981; Crawford & Skowronski, 1998; Hamilton & Rose, 1980; Snyder & Swan, 1978; for a meta-analysis, see Fyock & Stangor, 1994). There have been several attempts to identify the exact conditions under which each type of information (expectancy-inconsistent versus consistent) prevails over the other (e.g., Bardach & Park, 1996; Fyock & Stangor, 1994; Higgins & Bargh, 1987; Stangor & McMillan, 1992; Wänke & Wyer, 1996). However, few studies have provided supportive evidence (but see Garcia-Marques & Hamilton, 1996; Garcia-Marques, Hamilton, & Maddox, 2002). Recently, the encoding flexibility model provided one interesting account for the problem.

The encoding flexibility model builds on the distinction between conceptual and data-driven encoding processes (cf. Johnston & Hawley, 1994). Conceptual encoding processes are top-down, meaning-based processes that are targeted at extracting the common gist of episodes or categories. In contrast, data-driven encoding processes are bottom-up processes that encode each episode's specific features. According to the model, expectancies are particularly useful because they allow for both preserving and effectively allocating cognitive resources. Thus, while expectancy-inconsistent information benefits from extensive data-driven encoding, expectancy-consistent information is encoded in a gist-based manner. The model posits that this role for expectancies is most evident when cognitive resources are scarce. Under these conditions, the asymmetries between expectancy-congruent and incongruent information, for conceptual versus data-driven encoding processes, are considerably accentuated (see Sherman, Conrey, & Groom, 2004; Sherman et al., 1998).

We argue that under impression formation processing goals, conceptual or gist-based sentence encoding corresponds to trait encoding, while data-driven encoding corresponds to encoding specific features of the sentence and its context (for a similar proposal see Almeida, 2007). Because trait encoding of trait-implying information is likely to occur by default in impression formation settings, facilitating the trait encoding of expectancy-congruent behaviors may be difficult to detect. Thus, we focus on expectancies' impairment effects on the trait encoding of incongruent behaviors, as well as on the consequences of these impairments.

Potential consequences of trait encoding difficulties during impression formation

Even if activating initial expectancies makes the trait encoding of expectancy-incongruent behaviors more difficult, the consequences of this impairment for impression formation are still not clear.

As discussed above, our main goal is to extend the encoding flexibility model to impression formation contexts. If expectancies that are incongruent with trait-implying behaviors make the trait encoding of these behaviors difficult, then failure in extracting the gist (i.e., traits) of the behaviors should make them difficult to understand and less informative. Experiment 1 tests this prediction and uses an impression formation paradigm. Experiment 2 specifically tests for the differential impact of expectancies (congruent or incongruent with trait-implying behaviors) on trait encoding. We expect to find obstructions in the trait encoding of expectancy-incongruent behaviors. Finally, to better grasp the role of trait encoding inhibition in the impression formation process, Experiment 3 directly manipulates difficulties in trait encoding for either expectancy-congruent or incongruent behaviors. Given that difficulties in conceptual (trait) encoding may result in better performance on free recall tasks, we tested the impact of our manipulation on the differential recall of expectancy-congruent and incongruent information.

Experiment 1

If expectancies that are incongruent with trait-implying behaviors hamper the trait encoding of these behaviors, then expectancy-incongruent behaviors should be, compared with congruent behaviors, more difficult to understand and, therefore, less informative about the target's personality. To test this, we asked participants to assess the ambiguity of a set of behaviors that were related to the target's personality. We expected that incongruent behaviors would be rated as more ambiguous than congruent behaviors.

To ensure that performing the ambiguity ratings did not interfere with the usual processing of the behaviors, we included a free recall measure that is influenced by the differential processing of expectancy-congruent and incongruent behaviors. Specifically, we expect a recall advantage for expectancy-incongruent behaviors over expectancy congruent behaviors (i.e., the incongruency effect) under impression formation but not memorization processing goals (Garcia-Marques & Hamilton, 1996; Hastie & Kumar, 1979; Sherman & Hamilton, 1994; Srull, 1981; Srull, Lichtenstein, & Rothbart, 1985).

In sum, the study hypotheses are that: ambiguity ratings should be higher for expectancy-incongruent than congruent behaviors (Hypothesis 1) and recall levels should be higher for expectancy-incongruent than expectancy congruent behaviors (i.e., the incongruency effect) (Hypothesis 2).

Method

Overview. The general procedure was consistent with Garcia-Marques and Hamilton's (1996) paradigm. Participants formed an impression of an individual target about whom an initial expectancy was activated and then read 36 behavioral descriptions one at a time: 12 expectancy-congruent, 12 incongruent and 12 irrelevant. Additionally, half of the participants evaluated the degree of ambiguity for some behaviors, whereas the other half did not perform an evaluation (the control condition). Ambiguity ratings were requested for six behaviors – three expectancy-congruent and three incongruent. After reading the behaviors and finishing the requested evaluations, participants completed a filler task and were then asked to freely recall the presented behavioral descriptions.

Participants. Participants were 112 undergraduate psychology students from the University of Lisbon and ISCTE–IUL, who earned one credit for an introductory psychology course for participating in this study.

Stimulus Materials and Constructing the Stimulus Set. The initial target expectancy was activated by reference to the occupational group and three stereotypical traits. The two target pairs generated opposite expectancies (child-care professional is stereotypically friendly, whereas a traffic policeman is unfriendly; mathematician is stereotypically intelligent, whereas a bouncer is unintelligent).

The lists of behaviors presented to the participants (see Garrido, 2001; Jerónimo, 2001) varied in trait-dimension replication (friendly-unfriendly and intelligent-unintelligent) by list version and rating position. First, occupational group ascriptions were counterbalanced across behavior sets, which made each behavior expectancy-congruent in half of the conditions and expectancy-incongruent in the other half of the conditions. Thus, it was possible to compare ambiguity ratings and free recall levels for the same behavioral descriptions when they were congruent and incongruent with prior expectancies.

Second, we created two versions of these lists, such that the behaviors evaluated for ambiguity in one version were not evaluated in the other version and vice-versa.

Third, ambiguity ratings were made on the first or second half of the behavior list. In this procedure, we attempted to minimize interference from the rating task on the impression formation process. A second version of the behavior lists was created in which we did not request ambiguity ratings.

Design. The design was a 2 (Ambiguity ratings: absent vs. present) x 4 (Type of expectancy: friendly vs. unfriendly vs. intelligent vs. unintelligent) x 2 (Behavior list: version A vs. version B) x 2 (Rating position: first half vs. second half) x 3 (Behavior type: congruent vs. incongruent vs. irrelevant), with the last factor varying within participants.

Procedure. We individually tested participants on an IBM-compatible PC. The study was presented as, “the way in which we form an impression of a person on the basis of that person’s actions.” Instructions to the participants for the “rating” condition also included information for evaluating the ambiguity of some of the target’s behaviors on an eleven-point scale (from *non-ambiguous at all* to *extremely* *ambiguous*). For participants in the rating positions' "first half," evaluations were only made until a certain point in the behavior presentation that was signaled by "last scale." Participants in the "second half" position were informed that the evaluations would only be made after a certain point in the behavior presentation.

Initial information that was provided about the target comprised the occupational group and three personality traits that were stereotypic of that group, after which the computer automatically presented behaviors, one at a time, at a rate of 8 sec per item. For critical behaviors, after the behavior had been presented, the ambiguity scale appeared on the screen for 8 sec or until an answer was detected, after which another behavior was presented. Then, participants performed a pseudo-word letter-matrix (5-minute filler task) and tried to recall as many of the presented behaviors as possible (10-minute free recall task). Finally, we debriefed participants and they were thanked for their participation.

Dependent Measures. The dependent measures in this study were the ambiguity ratings for expectancy-congruent and incongruent behaviors and the number of recalled expectancy-congruent, incongruent, and irrelevant behaviors.

Results

Preliminary Analyses. Before analyzing the differences for the mean ambiguity ratings, we evaluated the ratings internal consistencies. The ambiguity ratings for expectancy-congruent behaviors had a .70 Cronbach alpha coefficient and the correlations among ratings were reliable (> .49). A principal components factor analysis revealed a single factor that explained 62.5% of the total variance, with all behaviors strongly associated with the factor (> .77). The internal consistency of the ambiguity ratings for the expectancy-incongruent behaviors was lower and had an alpha coefficient of .44, which was because the first incongruent behavior was weakly correlated (.20) with the remaining incongruent behavior evaluations. The ambiguity ratings for the other two incongruent behaviors were significantly correlated ($r = .30$, $p < .05$). Given that the ambiguity ratings' internal consistencies for the expectancy-incongruent behaviors were impaired for the first presented behaviors, all subsequent analyses excluded that behavior. The same pattern of results was found when all behaviors were analyzed, thus, we examined the entire set of evaluations for the ambiguity scale.

Ambiguity Ratings. The dependent variable was the mean ambiguity rating in a 4 (type of expectancy) x 2 (behavior list) x 2 (rating position) x 2 (behavior type: congruent vs. incongruent) analysis of variance (ANOVA) with repeated measures on the last variable. A main effect for behavior type was the only effect that emerged from this analysis, $F(1, 48) = 14.13$, $p < .001$, $MSE = 6.23$, $\eta_p^2 = .23$, and showed that the ambiguity ratings were higher for expectancy-incongruent ($M = 6.49$, $SD = .26$) than congruent behaviors ($M = 4.83$, $SD = .33$), thus supporting Hypothesis 1.

Free Recall. The behavioral descriptions that were recalled by each participant were categorized by two coders who were blind to the experimental conditions and used a lenient ("gist") criterion. There was high reliability for the coding procedure, with inter-coder agreement greater than 95%. Intrusions (less than 4%) and errors that inverted the behavior's meaning were omitted from the analyses.

Recall performance was analyzed in a 2 (rating request) x 4 (type of expectancy) x 2 (behavior list) x 3 (behavior type: congruent vs. incongruent vs. irrelevant) analysis of variance (ANOVA) with repeated measures on the last factor. The "rating position" variable was not included in the present analysis because it was not manipulated in the no-rating condition. However, supplementary analyses showed that it was not statistically significant and did not interact with other factors.

There was a main effect for behavior type as predicted by Hypothesis 2, $F(2, 188) = 7.18$, $p < .001$, $MSE = 1.89$, $\eta_p^2 = .07$. Planned contrast analyses revealed that expectancy-incongruent behaviors were better recalled ($M = 4.90$, $SD = .18$) than congruent behaviors ($M = 4.50$, $SD = .17$; $t(94) = 2.31$, $p = .029$, one-tailed), and both were better recalled than irrelevant behaviors ($M = 4.19$, $SD = .17$; $t(94) = 2.93$, $p = .006$, one-tailed)[1].

There was also a main effect for rating requests, $F(1, 94) = 18.96$, $p < .001$, $MSE = 6.03$, $\eta_p^2 = .17$, which reflected higher recall levels in the "no-rating" condition ($M = 5.12$, $SD = .20$) than in the "rating" condition ($M = 3.93$, $SD = .18$). There was a significant interaction effect between the behavior type and the rating request, $F(2, 188) = 4.58$, $p < .05$, $MSE = 1.89$, $\eta_p^2 = .05$ (see Table 1); however, the difference between recall levels for expectancy-incongruent and congruent behaviors were the same in the rating and no-rating conditions ($F < 1$), which suggests an incongruency effect in both conditions. Thus, only the difference between recall for the relevant (congruent and incongruent) and irrelevant behaviors is affected when a rating is requested ($M = 4.26$, $SD = .23$ and $M = 3.27$, $SD = .23$, for relevant and irrelevant behaviors) compared with the no-rating condition ($M = 5.13$, $SD = .26$ and $M = 5.10$, $SD = .26$, for relevant and irrelevant behaviors; $F(1, 94) = 7.89$, $p = .001$).

INSERT TABLE 1 HERE

[1] The effect of the behavior type was qualified by the type of expectancy, $F(6, 188) = 5.36$, $p < .0001$, $MSE = 1.89$. This effect results from the absence of differences in recalling relevant ($M = 4.47$, $SD = .35$) and irrelevant ($M = 4.93$, $SD = .35$) behaviors for intelligent expectancy and from the absence of differences in recalling congruent and incongruent behaviors for unfriendly expectancies ($M = 5.27$, $SD = .33$ vs. $M = 4.91$, $SD = .36$). This reveals a non-interpretable effect for the experimental materials.

The free recall analysis supports the incongruency effect. This effect was not affected by the presence of a rating request (only the difference between the recall levels for relevant and irrelevant behaviors was affected) or by the ratings' position.

Discussion

Consistent with Hypothesis 1, participants made higher ambiguity ratings for expectancy-incongruent compared with congruent behaviors. This suggests that incongruent behaviors are more ambiguous about the target's personality than the congruent behaviors. This result is impressive because the same behaviors were used for the expectancy-incongruent and congruent items (expectancy status changed as a function of the expectancy manipulation).

In addition, since expectancy-incongruent behaviors were better recalled than congruent behaviors in the present experiment (supporting Hypothesis 2 and replicating the incongruency effect), performing the ratings did not interfere with normal information processing. Therefore, we believe that the observed differences in the perceived ambiguity of expectancy-congruent and incongruent behaviors resulted from normal processes that underlie impression formation.

These differences in difficulty for extracting expectancy-congruent and incongruent behaviors' meanings corroborates the role of prior expectancies in obstructing incongruent behaviors' conceptual encoding, even when cognitive resources are available. Experiment 2 further explores these differences consequences for extracting meaning.

Experiment 2

This experiment explores the memory consequences for the differences in expectancy-congruent and incongruent behavior's conceptual encoding that were obtained in Experiment 1.

Previous research on trait inferences suggests that gist-based encoding for a trait-implying behavior often corresponds to encoding the implied trait, while data-driven encoding for the same behavior corresponds to an episodic type of encoding (see Almeida, 2007). Thus, the trait encoding difficulties that were triggered by expectancy information that was incongruent with the trait-implying behaviors that were shown in Experiment 1 should also be found when we compare participants' memory for the expectancy-congruent and incongruent behavioral descriptions.

This difference in the trait encoding probability may have source monitoring consequences. Specifically, if the higher conceptual fluency of expectancy-congruent behaviors that was shown in Experiment 1 facilitates personality trait encoding (conceptual encoding), then subsequent attempts to determine if that trait was presented with the behavior or inferred will be very difficult. In contrast, given the difficulty in the trait-encoding of incongruent behaviors and reliance on a context-specific type of encoding, it should be easier to later discriminate between trait activation that results from conceptual encoding and trait activation that results from the trait's presence in the behavioral description. According to the source-monitoring framework, discriminating an internally generated memory trace (e.g., an inferred trait) from an externally generated memory trace (e.g., an explicitly presented trait) is less reliable for memory traces of easily generated mental events. This is because the latter includes little details that are related to its internal generation process, which makes them more similar to traces from externally generated events (see Johnson, Hastroudi & Lindsay, 1993; Mitchell & Johnson, 2009).

To take advantage of these source monitoring difficulty differences, half of the expectancy-relevant behaviors that were used in this experiment were changed to include the implied trait, while the other half of those behaviors were presented with no trait included. For example, the behavioral description, “He won a chess tournament with more than fifty participants,” was changed to, “He was so brilliant that he won a chess tournament with more than fifty participants.” In a memory test, we asked participants to perform a forced recognition task in which they identified whether a behavior was initially presented with or without the implied trait that was explicitly stated in the sentence. In that task, participants were presented with two versions of the same behavioral description that only differed in the presence or absence of the implied trait and indicated which version matched the trait that was presented earlier.

According to our proposal, distinguishing cases in which the trait was encoded from the behavior from cases in which the trait word was included in the behavior description should create a more difficult source monitoring problem for expectancy-congruent behaviors. In contrast, source identification problems should decrease for expectancy-incongruent behaviors because conceptual or trait encoding is less likely to occur.

Recognition accuracy in the forced recognition task was measured by the discriminability (d’) between the behaviors that were presented with and without a trait and the proportion of false alarms for behaviors presented without a trait. Because trait encoding would be less likely for incongruent than congruent behavior descriptions, discrimination should be easier for incongruent compared with congruent behavior descriptions. This difference in discrimination is predicted to be due to a propensity to commit false alarms for congruent relative to incongruent behaviors (i.e., choosing the version of a behavior that includes the implied trait when it was presented without the trait). This propensity would suggest that the trait was actively inferred as part of conceptual encoding.

We also added a no-expectancy condition, which allowed us to better understand if the differences in trait-encoding for expectancy-congruent and incongruent behaviors specifically depend on the expectancy's activation. When comparing the recognition accuracy for the same behavioral examples that were presented under the no-expectancy and expectancy conditions, we predicted higher discriminability and lower false-alarms for the expectancy-incongruent behaviors compared with the no-expectancy behaviors. In other words, we expected that expectancy's activation would be responsible for more difficulty in the trait encoding for incongruent behaviors. In contrast, we did not expect a difference between the expectancy-congruent behaviors and the same behavioral descriptions in the no-expectancy condition. In fact, because the behaviors selected for this study were good exemplars of a given personality trait and easy to interpret and because there is ample evidence that trait inferences are spontaneously made from behaviors (Uleman, Newman, & Moskowitz, 1996), this process should occur by default. As such, an expectancy cannot increase the activation of a concept that is already activated by the (congruent) behavior.

In sum, the hypotheses are that: expectancy-incongruent trait-implying behaviors that are presented with or without the implied trait will be easier to discriminate than expectancy congruent behaviors in a recognition task (Hypothesis 1); false alarms will be less frequent for expectancy-incongruent than congruent behaviors that are presented without a trait (Hypothesis 2). The same behavioral descriptions will be easier to discriminate in the expectancy-incongruent than the no-expectancy conditions (Hypothesis 3); and false alarms will be less frequent for expectancy-incongruent behaviors that are presented without a trait than the same behavioral descriptions in the no-expectancy condition (Hypothesis 4).

Method

Overview. This study's characteristics were similar to the no-rating condition in Experiment 1. As in that experiment, we asked participants to form an impression about one individual target on the basis of a set of behavioral descriptions. However, there were two important changes. First, an initial expectancy about the target was activated for only half of the participants. Second, from the behaviors that were presented, half of the expectancy-relevant behaviors, or their descriptive counterpart in the no-expectancy condition, included the implied trait in the behavior description.

Then, participants completed a forced recognition task in which two versions of the same behavior (with and without the implied trait) were presented and participants selected the version that matched the one that was presented during the impression formation phase.

Participants. Participants were 48 undergraduate psychology students from ISCTE–IUL, who earned one credit for an introductory methodology course for their participation in this study.

Stimulus Materials and Constructing the Stimulus Set. The initial expectancy about the target was activated by referencing an occupational group (either a child-care professional or skinhead for the friendly-unfriendly expectancies, and a computer programmer or construction worker for the intelligent-unintelligent expectancies) and four personality traits that were stereotypical of that group.

Thirty-six behaviors were presented to every participant: 12 expectancy-congruent; 12 incongruent; and 12 irrelevant. There were 4 different behavior sets that varied in trait-dimension replication (friendly-unfriendly and intelligent-unintelligent) and stimulus set version. Similar to Experiment 1, the occupational group ascription was counterbalanced across behavior sets. Because only half of the expectancy-relevant behaviors (or their descriptive counterparts in the no-expectancy condition) were presented with an explicitly stated implied trait, we created two complementary versions of the behavior set. The behavior descriptions, with and without the trait, for the same behavioral descriptions were identical and only differed by including/excluding the trait in the behavioral description. The personality traits that were included in behavior description were selected from words that were generated in a small pre-test study (n = 16), in which participants generated up to three trait-words for each set of behavior descriptions.

The recognition lists were composed of pairs of both versions of each behavior (with and without the trait). Because neutral behaviors were always presented without a trait, a new version of these behaviors had to be created for the recognition test and included a personality trait (e.g., the trait "lucky" in the behavior, "He was so lucky that he parked the car near his place"). However, that personality trait was never related to the relevant trait dimensions.

Design. The design was a 2 (Expectancy: present vs. absent) X 4 (Type of expectancy: friendly vs. unfriendly vs. intelligent vs. unintelligent) x 2 (Behavior list: version A vs. version B) x 3 (Behavior type: congruent vs. incongruent vs. irrelevant), with the last factor varying within participants and the type of expectancy replication factor nested in the present level of the expectancy factor.

Procedure. We tested participants using IBM-compatible PCs. All instructions, stimuli, and tasks were presented with E-Prime version 1.1.4.6 (Schneider, Eschman, & Zuccolotto, 2002). The initial instructions informed participants that they were participating in an impression formation study. The expectancy condition instructions included a brief description of the target, which included the target occupational group and four personality traits that were stereotypic of that group. The instructions for the no-expectancy conditions only referred to the name of the target. Then, participants read on the computer screen, at a rate of one per 6 sec, the 36 behaviors that corresponded to their experimental condition; half of the expectancy-relevant behaviors (or their descriptive counterparts in the no-expectancy condition) were presented with the trait included in the description, while no trait was included in the other half; neutral behaviors were presented without including a trait.

After performing a 10-min filler task that consisted of a pseudo-word letter matrix, participants completed the forced recognition task. For each behavior, the two possible versions (with and without the trait included) were simultaneously presented on the center of the screen, one above the other, for a maximum of 15 sec. Participants' task was to select, as accurately as possible, the version of the behavior that matched the behavior that was presented earlier by pressing the appropriate key on the keyboard. When no answer was detected in the available time, the next pair would automatically be displayed. Finally, participants were debriefed and thanked for their participation.

Dependent Measures. The dependent measures in this study were recognition discriminability (d') for congruent and incongruent behaviors and the proportion of false alarms for recognizing congruent and incongruent behaviors that were presented without a trait.

Results

We were most interested in the impact of prior expectancies on recognition accuracy for congruent and incongruent behaviors. As such, our first analysis only examined the conditions that induced a prior expectancy. The d' for expectancy-congruent and incongruent behaviors was the dependent measure in a 4 (type of expectancy) X 2 (behavior list) X 2 (behavior type: congruent vs. incongruent)

ANOVA, with repeated measures on the last variable. The only statistically significant effect was the main effect for behavior type, $F(1, 16) = 5.63$, $p < .05$, MSE =1.28, $\eta_p^2 = .26$, which revealed, as predicted, higher recognition discriminability for incongruent ($M = 2.42$, $SD = .30$) compared with congruent ($M = 1.64$, $SD = .23$) behaviors. In a second analysis, the proportion of false alarms for congruent and incongruent behaviors that were presented without a trait was the dependent measure in a 4 (type of expectancy) X 2 (behavior list) X 2 (behavior type: congruent vs. incongruent) ANOVA, with repeated measures on the last variable. As predicted, there was a significant main effect for behavior type, $F(1, 16) = 6.95$, $p < .05$, MSE = .02, η_p^2 =.30, which showed less false alarms for incongruent ($M = .09$, $SD = .03$) than congruent ($M = .19$, $SD = .03$) behaviors[2].

Taken together, the results from these two analyses revealed that trait encoding of the behaviors was less likely for expectancy-incongruent than congruent behaviors. As predicted (Hypothesis 1), we found higher discriminability between the behaviors that were presented with and without a trait when those behaviors were expectancy-incongruent compared with congruent. We also found fewer false alarms for incongruent than congruent behaviors that were presented without a trait (Hypothesis 2).

Although these results support a relative difference in trait encoding between expectancy-congruent and incongruent behaviors, they do not verify the encoding difficulty fallouts from the expectancy activation. To test this idea, two complementary analyses were conducted in which the recognition performance in the

[2] However, this effect was qualified by the type of expectancy, $F(3, 16) = 4.98$, $p <$ .05, MSE = .02, η_p^2 =.48, which was due to an unexplainable inversion of the expected difference when the expectancy was “unfriendly” ($M = .06$, $SD = .07$ and $M = .17$, SD = .06, for congruent and incongruent behaviors).

expectancy condition (in which an expectancy was activated) was compared with recognition performance in the no-expectancy condition (in which there was no previous expectancy about the target). This analysis was conducted by item to compare recognition accuracy for expectancy-congruent, -incongruent and no expectancy versions for the friendly, unfriendly, intelligent, and unintelligent behavior descriptions (see Table 2).

The d' for each behavior item was the dependent measure in a 4 (nature of behavior: friendly vs. unfriendly vs. intelligent vs. unintelligent) X 3 (relation to the expectancy: congruent vs. incongruent vs. no expectancy) ANOVA, with repeated measures on the last variable. The expected main effect of relation with the expectancy was significant ($F(2, 88) = 7.66$, $p < .001$, $MSE = 1.24$, $\eta_p^2 = .15$) and indicated that there were higher d' scores for incongruent behaviors when an expectancy was activated ($M = 2.40$, $SD = .23$) compared with the d' scores that were obtained for the same behaviors when there was no expectancy ($M = 1.54$, $SD = .14$; $t(44) = 4.04$, $p = .001$, one-tailed). There was no difference for expectancy-congruent behaviors ($M = 1.78$, $SD = .15$; $t(44) = 1.23$, p = .20, one-tailed). There was also a main effect for nature of the behavior ($F(3, 44) = 6.67$, $p < .001$, $MSE = 2.13$, $\eta_p^2 = .31$), which suggested an effect from the stimulus material: unfriendly behavior, $M = 2.76$, $SD = .24$; friendly behavior, $M = 1.37$, $SD = .24$; intelligent behavior, $M = 1.50$, $SD = .24$; and unintelligent behavior, $M = 1.99$, $SD = .24$. The results from the present analysis clearly support that the differences in the trait-encoding of congruent and incongruent behaviors depend on activating an expectancy and result in increased difficulty encoding expectancy incongruent behaviors by their implied traits (and not an increased facility in encoding expectancy-congruent behaviors).

An additional analysis was conducted on the proportion of false alarms for the behaviors presented without a trait. We conducted a 4 (nature of behaviors: friendly vs. unfriendly vs. intelligent vs. unintelligent) X 3 (relation to the expectancy: congruent vs. incongruent vs. no expectancy) ANOVA, with repeated measures on the last variable. The expected main effect for the relation to the expectancy was statistically significant, $F(2, 88) = 3.27$, $p < .05$, $MSE = .02$, $\eta_p^2 = .07$. This effect revealed that there was a lower proportion of false alarms for behaviors that were incongruent with the previously activated expectancy ($M = .12$, $SD = .03$), compared with the same behaviors in the no-expectancy condition ($M = .19$, $SD = .02$; $t(44) = 2.33$, $p = .029$, one-tailed). There was no difference between the congruent ($M = .19$, $SD = .03$) and no-expectancy ($t(44) = .07$, ns, one-tailed) conditions. There was also a main effect for nature of behavior ($F(3, 44) = 4.71$, $p < .01$, $MSE = .07$, $\eta_p^2 = .24$), which suggesting an effect from the stimulus material for friendly behaviors, $M = .29$, $SD = .04$; intelligent behaviors $M = .18$, $SD = .04$; unintelligent behaviors $M = .14$, $SD = .04$; and unfriendly behaviors $M = .06$, $SD = .04$.

INSERT TABLE 2 HERE

The false alarm data converges with the d' analysis results. Expectancies increased the difficulty in trait encoding for expectancy-incongruent behaviors, but there was no trait encoding facilitation for expectancy-congruent behaviors.

Discussion

The results from the present experiment support the hypothesis of higher recognition accuracy for expectancy-incongruent compared with congruent behaviors. Participants were better at discriminating whether the behavior had been previously presented with or without the implied trait when that behavior was expectancy-incongruent than when it was congruent (Hypothesis 1). In addition, there were fewer false alarms for the incongruent compared with congruent behaviors that were presented without a trait (Hypothesis 2). These results indicate greater difficulties performing trait encoding of a behavior when that behavior is incongruent compared with when it is congruent with expectancies. One possible consequence of this processing difference is that expectancy-incongruent information may be better represented in episodic memory due to data-driven encoding (Almeida, 2007).

Importantly, the item analysis results clearly reveal that those differences depend on behaviors that are incongruent with the activated expectancy. In fact, we found a higher recognition accuracy (higher discriminability and fewer false alarms; Hypotheses 3 and 4) when the behavior was incongruent with the provided expectancy compared with the same behavior with no activated expectancy. There were no facilitation effects for the expectancy-congruent behaviors.

Overall, these results support the hypothesized difference in trait encoding difficulties that result from the expectancy activation. Trait encoding, which occurs by default when forming an impression about a person (as illustrated by the absence of facilitation effects), becomes obstructed for behaviors that are incongruent with the activated expectancy. In contrast, it is easy to make the expectancy-congruent behavior encoding for the implied trait.

Experiment 3

This experiment directly manipulates the ease at encoding the behavior descriptions in terms of traits by including the implied trait in these descriptions, either in all of the expectancy-congruent or in all of the incongruent behaviors and it explores the consequences of this ease at encoding for memory.

As previously suggested by Experiments 1 and 2, the presence of the implied trait in expectancy-congruent behaviors should not interfere with information processing because those behaviors are already easily encoded by their implied traits. Including the implied trait in the incongruent behavioral descriptions could either facilitate the trait encoding of those behaviors by increasing their conceptual fluency, or, in contrast, contribute to the trait encoding difficulty of those behaviors because the incongruency with the expectancy would be more salient.

However, previous research on impression formation and related fields indicates a relation between encoding difficulties and free recall performance. For example, attribution inferences (for the cause of a given behavior being either the actor of the behavior or the situation) that are difficult to make promote better recall for attribution-relevant information, including behavioral information (Hamilton, Grubb, Acorn, Trolier, & Carpenter, 1990). Text comprehension research, which shares many of the basic inferential processes that are involved in impression formation (e.g., Kintsch, 1998; McNamara, Kintsch, Songer, & Kintsch, 1996; Peracchi & O'Brien, 2004), has shown that descriptions that are less coherently structured and more difficult to encode, result in high-knowledge readers (i.e., readers with sufficient background knowledge) engaging in active processing to infer relations between concepts that are not explicit. These initial encoding difficulties are often functional to learning because they compensate for gaps, or unaccounted discrepancies that occur in the available sources of information, and may lead to active inferential strategies that enhance both comprehension and retention (McNamara et al., 1996). Thus, initial encoding difficulties are sometimes referred to as "desirable" difficulties (Bjork, 1994) because they effectively promote better learning and memory for the studied information.

Similarly, we expect that behaviors that are difficult to understand (expectancy-incongruent behaviors) will be better recalled than easy to understand (expectancy-congruent) behaviors (the so-called the incongruency effect; Hastie & Kumar, 1979; Srull, 1981; Srull et al., 1985).

Importantly, the present experiment directly manipulates the probability of trait encoding of the behaviors by including the implied trait in the behavior descriptions, either in the expectancy-congruent or in the incongruent behavior descriptions. The third condition presented no traits in any behavioral description (trait-absent condition, which corresponded to traditional impression formation settings). We predict that the inclusion of implied traits in the behavior descriptions that are difficult to encode for traits (i.e., in the expectancy-incongruent behaviors) will remove the abovementioned "desirable" trait encoding difficulties, and, consequently, eliminate their memory advantage over the easy to encode (expectancy-congruent) behaviors. In contrast, including the implied traits in the behavior descriptions that are easy to encode for traits (i.e., expectancy-congruent behaviors) should not make a difference, because these behaviors are already encoded for traits by default. Therefore, there should be no effect on the expectancy-incongruent advantage in recall.

An impression judgment task was also included to ensure that the trait presentation, specifically the traits that were inconsistent with the expectancy, did not interfere with developing the impression. Therefore, we expect no effect of trait inclusion in this measure.

Method

Overview. As in the previous experiments, we asked participants to form an impression of a target person about whom a previous expectancy was activated. A set of behaviors were described for that target and either all expectancy-congruent or all expectancy-incongruent behaviors were presented with the implied trait (trait present conditions), or the same behaviors were presented without a trait (trait-absent conditions). Then, participants freely recalled the presented behaviors and made a final judgment about the target.

Participants. Participants were 124 undergraduate psychology students from the University of Lisbon, who earned them one credit for an introductory psychology course for participating in this study.

Stimulus Material and Constructing the Stimulus Set. For the expectancy induction, we presented the target's occupational group (the same as Experiment 2), and used eight personality traits that were stereotypic of each of those groups. The behaviors (in the versions with and without the trait) were the same as in Experiment 2.

Twelve different set of behaviors were created and varied in trait-dimension replication (friendly-unfriendly and intelligent-unintelligent), type of behavior presented with the trait (expectancy-congruent, incongruent, or none), and order of behavior presentation. Similar to the previous experiments, the occupational group ascription was counterbalanced across behavior sets. For the presented behaviors, all of the expectancy-congruent behavior descriptions, all of the incongruent behaviors, or no behavior descriptions, included the personality trait that was implied by the behavior. Finally, two different presentation orders were determined by switching the booklet's two halves.

Design. The design of this study was a 4 (Type of expectancy: friendly vs. unfriendly vs. intelligent vs. unintelligent) x 3 (Trait: present in congruent behaviors vs. present in incongruent behaviors vs. absent) X 2 (Presentation order: order A vs.

order B) x 3 (Behavior type: congruent vs. incongruent vs. irrelevant), with the last factor varying within participants.

Procedure. The initial instructions asked participants to form an impression about an individual for whom the occupational group and eight personality traits were presented (via audio at a rate of 2 sec per trait). Then, participants received a stimulus booklet that contained 36 behaviors that corresponded to their experimental condition, either with the trait included in all 12 expectancy-congruent behaviors, in the 12 expectancy-incongruent behaviors, or with no traits included in any of the behaviors. Every 6 sec, they were instructed, via audio, to turn the page and read the next behavior. After performing a 5 min filler task that consisted of a pseudo-word letter matrix, participants free recalled as many of the presented behaviors as possible for 8 min. The last task consisted of making impression judgments for the target on three different, but related, nine-point rating scales. For the friendly and unfriendly expectancy-conditions, the scales were, *insensitive-sensitive, unfriendly-friendly, unhelpful-helpful*; for the intelligent and unintelligent expectancy-conditions the scales were *fool-wise, unintelligent-intelligent, slow thinker-fast thinker*. Although there was no time limit for this task, participants were encouraged to make fast and intuitive judgments. Finally, we debriefed participants and thanked them for their participation.

Dependent Measures. The dependent measures for this study were the number of expectancy-congruent, incongruent, and irrelevant behaviors recalled and the mean impression judgment ratings.

Results

Free Recall. The behavior descriptions that were recalled by each participant were categorized by two coders who were blind to the experimental conditions and used a lenient (“gist”) criterion. The reliability for the coding procedure was high, with inter-coder agreement approximately 92%. The intrusions and errors that referred to inverting the main meanings of the behaviors (less than 5%) were eliminated from the analysis.

The number of expectancy-congruent, incongruent and irrelevant behaviors recalled was the dependent measure in a 4 (type of expectancy) X 3 (trait) X 2 (presentation order) X 3 (behavior type: congruent vs. incongruent vs. neutral) ANOVA, with repeated measures on the last variable. There was a non-interpretable main effect of presentation order ($F(1, 100) = 4.59$, $p < .05$, $MSE = 3.61$), which showed higher global recall levels in one of the order manipulations ($M = 5.07$, $SD = .14$ vs. $M = 4.64$, $SD = .14$). There was also a significant main effect for trait, $F(2, 100) = 5.56$, $p < .01$, $MSE = 3.61$, $\eta_p^2 = .10$, which revealed that global recall levels were higher in the “trait absent” condition ($M = 5.27$, $SD = .17$) than in the conditions in which the traits were included in congruent behaviors ($M = 4.45$, $SD = .18$) or incongruent behaviors ($M = 4.86$, $SD = .17$). This result is the first indication that including traits in behavior descriptions changes the conceptual fluency of those behaviors and has a detrimental impact on recall. However, we expected that this would happen especially for expectancy-incongruent behaviors. We also found a significant main effect for behavior type ($F(2, 200) = 37.27$, $p < .0001$, $MSE = 2.34$, $\eta_p^2 = .27$), which revealed higher recall levels for the expectancy-relevant ($M = 5.34$, $SD = .16$) compared with irrelevant behavior ($M = 3.89$, $SD = .14$) conditions. The absence of differences in recalling congruent and incongruent behaviors was not surprising: these differences were only expected in two of the three trait-conditions (trait-absent and when the trait was included in congruent behaviors), and not in the condition where a trait was included for incongruent behaviors.[3]

INSERT TABLE 3 HERE

The interaction between the behavior type and the trait (see Table 3) was not statistically significant, $F(4, 200) = 1.43$, $p = .22$, $MSE = 2.34$, $\eta_p^2 = .03$. As predicted, planned contrasts revealed that the conditions in which the trait was absent and where the trait was included in congruent behaviors did not differ, $t(100) = .08$, $p = .47$, one-tailed. Therefore, we combined these conditions. Together, the difference between congruent and incongruent behaviors was significant ($M = 5.07$, $SD = .27$ vs. $M = 5.55$, $SD = .28$; $t(100) = 1.91$, $p = .03$, one-tailed), which illustrated higher recall for incongruent than congruent behaviors – the incongruency effect. Moreover, these conditions together (i.e., the trait absent condition and the trait in congruent behaviors condition) significantly differed from the condition in which a trait was included in incongruent behaviors ($t(100) = 1.76$, $p = .04$, one-tailed) and the congruent and incongruent recall did not significantly differ ($M = 5.54$, $SD = .26$ vs. $M = 5.28$, $SD = .27$; $t(100) < 1$), which indicated, as expected, that the incongruency effect disappeared in this condition.

In sum, when differences in the trait encoding difficulty for expectancy-congruent and incongruent behaviors were removed by including a trait in the description of incongruent behaviors, these behaviors were not better recalled than

[3] The effect of behavior type was qualified by the type of expectancy ($F(6, 200) = 14.51$, $p < .0001$, $MSE = 2.34$). This effect may illustrate differences in the complexity of the expectancies and is non-interpretable.

congruent behaviors[4]. However, it is notable that inspecting the means for the condition in which the trait was included in incongruent behaviors raises a possible alternative interpretation for the absence of the incongruency effect. Although we argue that including the trait decreases recall for expectancy-incongruent behaviors, it apparently also enhances recall for expectancy-congruent behaviors when compared with the no trait condition.[5] The absence of the incongruency effect in this condition could be interpreted as a consequence of the reversal in expectancies. That is, including implied traits for expectancy-incongruent behaviors could undermine the initial expectancies and lead to its reversal. This could cause behaviors that were originally congruent to become incongruent with the impression, which may lead to a decrease in expectancy-incongruent and a boost in expectancy-congruent behavior recall. Fortunately, the final impression judgments discriminated between these alternatives.

Impression Judgments. To ensure that including a trait in incongruent behaviors did not affect the final impression, an analysis of variance was conducted with the mean impression ratings as the dependent variable. Impression judgments used three bipolar scales and preliminary analyses evaluated the ratings' internal consistency. These analyses showed a .53 Cronbach's alpha that was correlated to the

[4] Although the difference between recalled expectancy-congruent and incongruent behaviors was not statistically reliable, there was an increase in the number of congruent behaviors recalled in the "trait in incongruent" relative to the "trait in congruent" condition (M = 5.54, SD = .26 versus M = 4.76, SD = .27, $t(100)$ = 2.09, p = .02, one-tailed). Thus, removing trait inference differences probably benefited congruent behaviors because they highly corresponded to higher expectancies.

[5] Because the comparisons we are referring to correspond to between-participant trait conditions and there was a between-participants overall recall effect, one might object to its informativeness. As such, only differences in the magnitude of the incongruency effect would be meaningful. Thus, and in order to make the between conditions meaningfully comparable, we used the number of expectancy-irrelevant behaviors as a covariate in a new analysis. Although the main effect for the overall recall disappeared, the pattern of means remained the same and our critical contrast remained significant.

first scale (*insensitive-sensitive* and *fool-wise*, for friendly-unfriendly and intelligent-unintelligent domains) but was not strongly correlated with the other scales (< .23). A principal components factor analysis suggested a single factor that explained 51.9% of the variance, with the two last scales strongly associated with the factor (> .78), but the first scale was not strongly associated with that factor (= .55). Thus, data that were collected for the first judgment scale were excluded from further analyses. Subsequently, we centered both scales on zero, such that a positive difference from zero reflected expectancy-congruency biases. The mean (transformed) evaluation ratings for the two impression scales (centered on zero) was the dependent measure in a 4 (type of expectancy) X 3 (trait) X 2 (presentation order) ANOVA. This analysis revealed a non-interpretable main effect for type of expectancy ($F(3, 92) = 8.39$, $p < .0001$, $MSE = 1.52$, $\eta_p^2 = .21$), with impression ratings significantly above zero for all expectancies, except for unintelligence ($M = -.02$, $SD = .23$). This effect was qualified by presentation order ($F(3, 92) = 3.24$, $p < .05$, $MSE = 1.52$, $\eta_p^2 = .10$), which showed that the mean judgments for unintelligence were less than zero in only one presentation order ($M = -.69$, $SD = .30$ vs. $M = .65$, $SD = .34$). Importantly, including or not including the trait in the behavioral description had no effect on impression judgments, $F(2, 92) < 1$.

Discussion

As predicted, including the implied trait for congruent behaviors did not affect behavior processing; rather, it led to the same pattern of results that were found in the condition in which no traits were presented, or the recall advantage of expectancy-incongruent behaviors (i.e., the incongruency effect). However, including the implied trait in incongruent behaviors led to equivalent recall levels for expectancy-congruent and incongruent behaviors. This result can be explained by removing expectancy-incongruent behavior encoding difficulties when the corresponding implied traits were explicitly available. As a result, conceptual encoding decreased the need for enhanced data-driven encoding strategies that would otherwise be used to overcome initial encoding difficulties. Consequentially, better recall for expectancy-incongruent relative to congruent behavioral descriptions disappeared. Because the general impression was, as predicted, biased towards congruency, even in cases in which a trait was available for the encoding of expectancy-incongruent behaviors, indicates that presenting those traits did not interfere with developing an expectancy-congruent impression about the target.

General Discussion

The present work explored the influence of prior expectancies on the ease of conceptually encoding behaviors. Specifically, we concentrated on behaviors that were incongruent with prior expectancies and clarified the role of conceptual encoding ease in impression formation. We argued for extending the encoding flexibility model (Sherman et al., 1998) to impression formation, such that conceptual encoding, specifically trait encoding, would be easy in expectancy-congruent and difficult in expectancy-incongruent trait implicative behaviors, even under conditions with no cognitive overload.

In three studies, we found that activating an initial expectancy about a person could obstruct trait encoding for trait-implying behaviors that contradict the gist of the expectancy (i.e., the expectancy-incongruent behaviors). In Experiment 1, we showed that expectancy-incongruent behaviors conveyed more ambiguous information about the personality of the target person. This effect appeared to be associated to (and is likely to follow from) the lower conceptual encoding of incongruent behaviors. In Experiment 2, a forced-recognition task between two versions of previously presented behaviors that only differed in the explicit inclusion of the implied trait demonstrated, as predicted, greater memory performance for expectancy-incongruent behaviors. This result provides convergent evidence for the notion that trait encoding of expectancy-incongruent behaviors is less probable than for congruent behaviors.

In Experiment 3, we explored the consequences of the difficulties in trait encoding expectancy-incongruent behaviors for the process of impression formation. We manipulated the trait encoding difficulty of the behaviors by including (or not) the implied traits in the behavioral descriptions. This manipulation had no impact when the behavioral descriptions were congruent with initial expectancies. However, explicitly including the implied trait removed the episodic memory advantage of expectancy-incongruent behaviors (when compared with expectancy-congruent behaviors).

The results from these three experiments show that the conceptual-based (trait encoding) vs. data-based asymmetry in processing expectancy-congruent versus expectancy-incongruent information as proposed by the encoding flexibility model (Sherman et al., 1998), is not limited to conditions of cognitive load, but may drive processing in impression formation even under no load.

Beyond our initial rationale, the present results also have several consequences for person memory and person memory models, specifically from Experiment 3.

The higher recall for expectancy incongruent compared with congruent information (i.e., the incongruency effect) has been accounted for as the result of an attempt to overcome the challenge to impression cohesion that were derived from information that contradicts previous expectancies (Hastie, 1984; Hastie & Kumar, 1979; Srull, 1981; Srull et al., 1985). However, in Experiment 3, including the implied trait in the expectancy-incongruent behavioral descriptions, rather than making impression formation more challenging and the incongruency effect stronger, made the recall difference between expectancy-incongruent and congruent information disappear. Although they pose a problem to the person memory model (Hastie & Kumar, 1979; Srull, 1981), these results are readily interpretable under the present rationale and explain the desirable difficulties that are posed by expectancy-incongruency information, not for impression cohesion, but for trait encoding difficulty. Because including the implied trait in expectancy-incongruent behavioral descriptions circumvents encoding difficulties, the incongruency effect was undermined. No such effect was expected, nor found, for including the implied trait in the expectancy-congruent behavioral descriptions.

Interestingly, the trait encoding difficulties for expectancy-incongruent behaviors might also account for expectancy-based illusory correlations (over-estimating the number of behaviors that illustrated an expectancy-congruent trait versus the number of behaviors that implied a expectancy-incongruent trait; Hamilton & Rose, 1980) and, therefore, provide an intuitive explanation for the dissociation of the effect of expectancies found between recall and frequency estimation of congruent and incongruent behaviors (Garcia-Marques & Hamilton, 1996; Garcia-Marques et al., 2002; Garrido, Garcia-Marques & Hamilton, 2012) and provide a parsimonious alternative account for the TRAP model of the same dissociation (Hamilton & Garcia-Marques, 2003). That is, difficulties in trait encoding for expectancy-incongruent behaviors should become desirable difficulties for recall but lead to relative over-estimations of the number of expectancy-congruent behaviors. However, additional research is needed to test these ideas.

Finally, it is worthwhile to mention that several our results are similar to other findings in the spontaneous trait inferences (STIs) literature. Wigboldus and colleagues found that stereotypic expectancies inhibit STIs from stereotype-inconsistent trait-implying behaviors, compared with behaviors that converge with these expectancies (Wigboldus, Dijksterhuis, & van Knippenberg, 2003; Wigboldus, Sherman, Franzese, & van Knippenberg, 2004). Our results extend this STI inhibition effect for inferences that occur under impression formation goals. Although there are many differences between the processes that underlie intentional impression formation and spontaneous trait inferences, the similarities between these results suggest that there is an analogous effect of expectancy on trait encoding, which calls for examining common components in intentional and spontaneous trait inferences (Ferreira et al., 2012).

Conclusion

The present research revisited a central question of social psychology – how impressions of personality remain stable when confronted with violating evidence. We extended the application domain of the flexibility encoding model to impression formation by incorporating a new perspective of how to move from behaviors to personality traits into impression formation. The proposed extension contributes to simultaneously explain two opposite tendencies in the impression formation literature: the tendency to better recall behavioral evidence that violates our actual impressions about someone, and the tendency to maintain those impressions.

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Table 1: Mean Recall Levels for each Behavior Type as a Function of the Rating Request

	Behavior Type					
	Congruent		Incongruent		Irrelevant	
Rating Request	*M*	*SD*	*M*	*SD*	*M*	*SD*
No Rating	4.88	.25	5.38	.27	5.10	.26
Rating	4.10	.22	4.41	.24	3.27	.23

Table 2: d’ and False Alarms for Congruent and Incongruent Behaviors and No-Expectancy (base-line) Conditions

	Expectancy					
	Congruent		Incongruent		No Expectancy	
Recognition	*M*	*SD*	*M*	*SD*	*M*	*SD*
d’	1.78	.15	2.40	.23	1.54	.14
False Alarms	.19	.03	.12	.03	.19	.02

Table 3: Mean Recall Levels for Each Behavior Type as a Function of the Trait Condition

	Behavior Type					
	Congruent		Incongruent		Irrelevant	
Trait	*M*	*SD*	*M*	*SD*	*M*	*SD*
In Congruent Behaviors	4.76	.27	5.22	.28	3.36	.25
In Incongruent Behaviors	5.54	.26	5.28	.27	3.76	.24
Absent	5.38	.27	5.88	.28	4.55	.24

Highlights

- The role of expectancies on encoding flexibility in impression formation.
- The trait gist of behavioral information that contradicts previous expectancies is hard to extract.
- Trait encoding difficulties may account for the incongruency and the expectancy-based illusory correlation effects.
- Trait encoding difficulties may contribute for impressions' resistance to change.